Секция «Цели устойчивого развития в современных условиях экономической и политической нестабильности»

The Energy Efficiency based on Corporate Social Responsibility in Chinese Manufacturing Sector

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The global energy transition is underway, with low-carbon options replacing fossil fuels. Energy management has become an essential academic issue due to the increased demand for energy conservation and fossil fuels. Global concerns about rising primary energy consumption, associated increases in greenhouse gas emissions, and resource uncertainty have pushed energy efficiency to the top of most national policy agendas. Energy savings and energy efficiency have been identified as variables that are significantly connected with Corporate Social Responsibility (CSR) initiatives. Energy is also a key factor in economic and social growth, prosperity, and safeguarding a nation's long-term development; hence, energy efficiency concepts can help operationalize CSR. Certain factors might either limit or enhance energy efficiency and CSR. As a result, this research aims to identify the barriers, drivers, and solution methodologies of sustainable manufacturing and provide an implementation framework to encourage energy efficiency-based CSR implementation in China.

Based on our objectives, our initial goal is to investigate, assess, and model the barriers to energy efficiency-based corporate social responsibility (EECSR) implementation. Second, analyze, evaluate, and model probable drivers of EECSR implementation. Third, prioritize methods for overcoming EECSR hurdles. The final goal is to develop an implementation framework based on study findings to help China's manufacturing industry implement EECSR. To meet the study's aims, it employed multicriteria decision-making methods (MCDM), which enable choosing the best option from a set of choices by analyzing them against various criteria. MCDM has shown to be a popular and effective methodology for investigating, evaluating, and ranking decisionmaking initiatives. Integrated Structural Modelling (ISM), Cross-Impact Matrix Multiplication Applied to Classification (MICMAC), Fuzzy Analytic Hierarchy Process (FAHP), and Fuzzy Technique for Order of Preference by Similarity to Ideal Solution (FTOPSIS) are the MCDM approaches used in this study. Data was gathered from the literature review and using the Delphi method, which is well suited for exploring respondents' thoughts and attitudes on complicated and often sensitive matters and allowing for probing for further information and clarification of replies.

Results revealed that the most significant barriers that need to be addressed are: "Priorities for non-EECSR activities more important", "the decision chain is complex", and "Lack of competence to implement EECSR without external consultants". The most important drivers that lead to EECSR implementation are: "High demand from consumers and NGOs", "High cost of energy input", and "Government regulations or pressure". Top-ranked solutions that are important to remove barriers of EECSR implementation are:"EECSR adoption encouragement by concerned environmental protection authority (EPA)" and "Adjust management systems and processes as per EECSR requirements".

This investigation could help the manufacturing sector determine which individual factors they should focus on when adopting EECSR to enhance specific indicators such as quality,

environment, and finance. During EECSR implementation, top leadership must be fully aware of the most and least significant drivers and their effects on other drivers. The EECSR strategy is still in its early stages, particularly in developing nations. There is more room to analyze and investigate other drivers, impediments, and solution techniques. This research aims to increase the manufacturing sector's sustainability, quality, and productivity in a developing nation environment such as China through EECSR.

References

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