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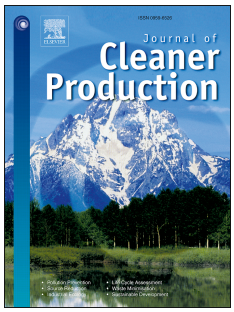

Sustainable lifestyle factors influencing industries' electric consumption patterns using Fuzzy logic and DEMATEL: The Nigerian perspective

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Sustainable Lifestyle Factors influencing Industries' Electric Consumption Patterns using Fuzzy Logic and DEMATEL: The Nigerian Perspective

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ABSTRACT

The methods applied in the attempt to minimize electricity consumption waste as result of consumer's consumption patterns is of crucial concern for government, investors and even consumers. There is a need to identify the potential factors influencing electricity consumption pattern in order to encourage sustainable practices. To examine the electricity consumption pattern and their influencing factors, this study applied Fuzzy-DEMATEL model to examine the sustainable lifestyle factors of electricity consumption pattern in Nigeria. The originality of this paper lies in the proposed approach that integrates fuzzy logic and DEMATEL to evaluate sustainable lifestyles factors that influence industries electric consumption patterns for the first time in Nigeria. Firstly, 24 sustainable lifestyle factors were sourced from literature sources and grouped into 4 clusters of economic, political, environmental and socio-cultural criteria. Two sets of questionnaires were distributed to 30 experts who comprise of managers and senior technicians in Nigerian Power Industry. The results show that the critical factors which influence industries electric consumption patterns are corruption, inadequate planning and design, electricity theft, literacy level, population demography and lifestyle attitude. The implication for decision makers is that in improving power consumption pattern in the Nigerian industries; emphasis should be placed on the critical sustainable lifestyle factors. Thus, corruption should be minimized, planning and design adequately implemented, theft of electricity curbed while improving literacy level and lifestyles of the masses to improve electric consumption patterns.

Keywords: Sustainable lifestyle, Electric consumption, Nigerian industries, Fuzzy logic and DEMATEL

Highlights

• Applied 24 sustainable lifestyle factors into 4 clusters of economic, political, environmental and socio-cultural criteria based on the Nigerian context.• Fuzzy logic and DEMATEL assessed these criteria that influence industries electric consumption patterns • Found CO>RUM>LA>IPD>OE>PDPP>IR>PD>DEM>PL>TE>LL as the critical factors affecting industries electric consumption patterns.

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