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Evaluation framework of barriers during green technology adoption

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Adoption of an appropriate green technical solution matching with the enterprise operational characteristics is not only essential for its green sustainable ambitious, but also a key process in the successful commercialization of technical achievements on the micro level. The fundamental challenge is to recognize the possible barriers in the process of green technology adoption and transformation and make a comprehensive evaluation and clarify the supporting resources and environment required to overcome these obstacles. The work is the very basis of a rational decision-making, which plagues practitioners for a long period. This paper intends to build a barrier identification and examination system in the process of green technology adoption. The goal of this work is to establish a comprehensive identification framework and index system for green technology adoption. The structure is consisted of two dimensions of competence and motivation driven from the previous research related with organization operation theory and organizational psychology theory. Thereafter operational recognition indicators are explored and set with the perspective of extended life cycle theory which may be confronted in green technology adoption. According to the nature and logic of recognition system purposed trapezoidal fuzzy evaluation is applied into the identification system and the practical computation steps are designed for the application. Meanwhile a numerical example demonstrates the application of the recognition system clarifying the utilization of diagnosis. This research can support the decision-making process for practitioners in green technology adoption. It may narrow the gap between sustainable strategy and green operation in practice while enriching green technology innovation and sustainable operation theory.

Recent Publications

1. Xia D, Yu Q, Gao Q, et al. (2017) Sustainable technology selection decision-making model for enterprise in supply chain: Based on a modified strategic balanced scorecard. *Journal of Cleaner Production*; 141: 1337- 1348.
2. Xia D, Chen B and Zheng Z (2015) Relationships among circumstance pressure, green technology selection and firm performance. *Journal of Cleaner Production*; 106: 487-496.

Biography

De Xia has his expertise in green operation management in improving sustainability. He has obtained his MSc and PhD degrees in Management Science and Engineering, both from Wuhan University of Technology, China. Currently, he is a Full Professor of Management School at Wuhan University of Technology and was a Visiting Researcher in Warwick Business School of Warwick University, UK. His current research interests are green technology adoption, green supply chain management, fuzzy decision making. He is the Principal Investigator of National Nature Science Foundation of China and National Social Science Foundation of China and Collaborator of Key Program of National Social Science Foundation of China. He has published more than 50 papers in journals, conference as well as 2 books related to his areas.

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