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Research on sustainable technology selection decision making model for enterprise

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During technology adoption, assessment of its sustainable character it is difficult task to limit the insight and dimensions of sustainability, as well as its complicated application at the operational level. A proper decision-making framework and method may be conducive to bridging generic and macro-level sustainability with local-site and task-oriented technology selection, improving the application of sustainable technology. For this reason, a framework is explored to highlight the sustainable nature of relevant components during an operational decision-making process within the supply chain. With an eye to the triple bottom of sustainability, the product chain, value-added activities of supply chain and stakeholders are analyzed and embedded into the technology selection method. The dynamic relationships among these components (product chain, value-added activities and stakeholders) as carriers of the technology are also discussed to investigate their sustainable features. Furthermore, to figure out the whole technology decision making logic map, a modified strategic balanced score card is established and applied to evaluate technology candidates in terms of their features of sustainability. Next, a computing method is designed to produce a sustainable technology choice. The multilateral mechanisms among the three groups, as well as within each group, during the technology selection process are identified and elaborated completely. The framework of analysis and method presented in the paper add insight to sustainability theoretically and guide its application in technology adoption. Managerial implications as well as limitations of this work conclude this paper.

Recent Publications

1. Xia D, Chen B, 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 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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