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A fuzzy goal programming approach for green supply chain optimisation under activity-based costing and performance evaluation with a value-chain structure

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performance indices of the GSC suppliers. A green supply chain of a mobile phone is used as an illustrative case. Several objective structures and their results are compared. The sensitivity analyses show that pure maximisation of financial profit can achieve the highest profit level, which also has the largest Euclidean distance to the multiple aspiration goals. In order to determine the final objective structure, an analytic hierarchy process (AHP) is used. This paper provides a new approach to assess and control a complex GSC based on value-chain activities, and obtain a more precise solution. The establishment of this GSC model not only helps decision-makers to monitor GSC comprehensive performance but also can facilitate further improvement and development of GSC management.

Keywords: activity-based costing (ABC) optimisation green supply chain (GSC) performance evaluation fuzzy goal programming (FGP) value-chain structure

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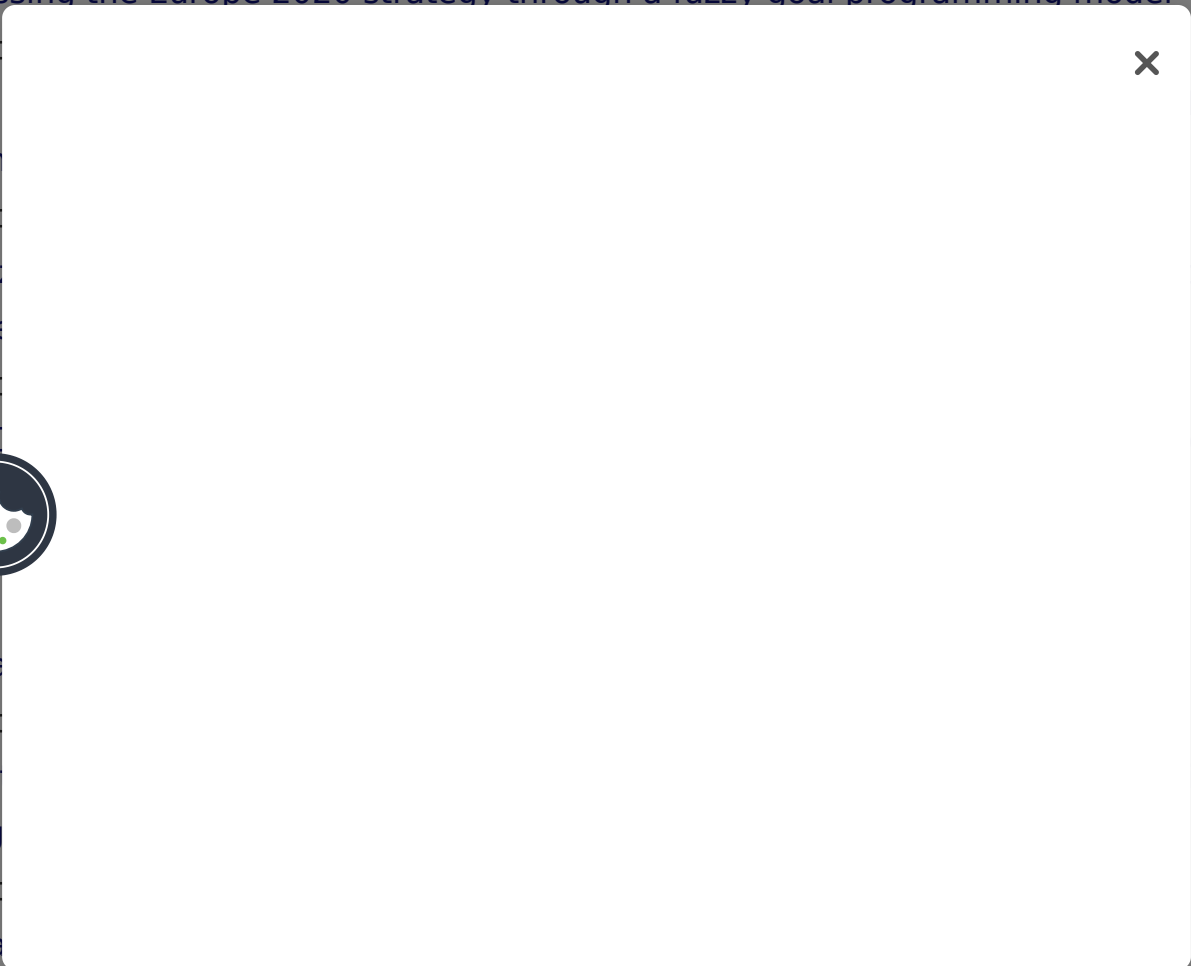
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