Title:

Green supply chain management using the queuing theory to handle congestion and reduce energy consumption and emissions from supply chain transportation fleet

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Abstract:

Purpose: Nowadays, governments and people pay more attention to use green products due to environmental pollution, irreplaceable energy and shortage of resources. Green products are resulted from the application of green supply chain management strategies to the organizations' performance strategies, so that we can reduce environmental pollutants and wastes and take a step towards saving energy with limited resources. Methodology: In this paper, the effect of reducing energy consumption in green supply chain is examined by using queuing theory and transportation models. Data was generated and solved by a commercial optimization epackage

theory and transportation models. Data was generated and solved by a commercial optimization epackage. Findings: The findings indicate that suitable assignment of existing transportation fleet with specified capacity, and using queueing theory in a closed-loop network to reduce the queue length and handle congestion, can cause a reduction in energy consumption by optimizing transportation and waiting times in a green supply chain. Originality/value: Adopting investment strategy in improving the environmental performance of the supply chain, will yield in many advantages and benefits. This article investigates the effect of queuing theory on reducing waiting time, optimizing energy consumption in green supply chain, and consequently decreasing pollution.

Subjects:

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