

# **A cross-border e-commerce logistics optimization model**

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## **Abstract**

The speedy progression of e-commerce has complicated its logistics operations especially when it comes to cross-border e-commerce logistics. Once the cargo has been delivered to the recipients in their individual countries, intricate operational issues occur such as problems with taxes, the exchange rate, local and transnational logistics, etc. This study aims to develop an optimization model to tackle the issues of cross-border e-commerce logistics. Specifically, this proposed model minimizes operational costs as well as identifies optimal shipping routes and product types within the regulation framework of cross-border logistics. Moreover, a numerical study has been established based on a cross-border e-commerce business model of a Taiwanese online shopping website that imports Korean products. This numerical illustration reveals the following findings. First, since the import duty tax and the exchange rate both have an effect, every cross-border logistics with the combination of product types and volumes should be carefully arranged. Second, due to high international transportation costs, incentive strategies with low-cost deliveries can benefit both customers and e-commerce firms. Finally, since inventory costs play an essential role in cross-border e-commerce logistics, the purchase of goods from overseas countries can be postponed until it has been specifically ordered.

## **Keywords**

Cross-border e-commerce logistics, online shopping, optimization model, business management

## **Acknowledgements**

This work is partially supported by Ministry of Science and Technology, Taiwan, R.O.C under grant MOST 106-2410-H-035-013-MY2.

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