

## Application of a Compact Wastewater Treatment Unit in a Rural Area

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**Abstract :** Encompassing inventory, warehousing, and transportation management, logistics is a crucial predictor of firm performance. This has been extensively proven by extant literature in business and operations management. Logistics is also a fundamental determinant of a country's ability to access international markets. Available studies in international and transport economics have shown that limited transport infrastructure and underperforming transport services can severely affect international competitiveness. However, the evidence lacks the overall impact of logistics performance-encompassing all inventory, warehousing, and transport components- on global trade. In order to fill this knowledge gap, the paper uses a gravitational trade model with 155 countries from all geographical regions between 2007 and 2018. Data on logistics performance is obtained from the World Bank's Logistics Performance Index (LPI). First, the relationship between logistics performance and a country's total trade is estimated, followed by a breakdown by the economic sector. Then, the analysis is disaggregated according to the level of technological intensity of traded goods. Finally, after evaluating the intensive margin of trade, the relevance of logistics infrastructure and services for the extensive trade margin is assessed. Results suggest that: (i) improvements in both logistics infrastructure and services are associated with export growth; (ii) manufactured goods can significantly benefit from these improvements, especially when both exporting and importing countries increase their logistics performance; (iii) the quality of logistics infrastructure and services becomes more important as traded goods are technology-intensive; and (iv) improving the exporting country's logistics performance is essential in the intensive margin of trade while enhancing the importing country's logistics performance is more relevant in the extensive margin.

**Keywords :** low-cost, recycling, reuse, solid waste, wastewater treatment

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