







Q



- ▶ International Journal of Logistics Research and Applications ▶ List of Issues ▶ Volume 17, Issue 6
- Carbon emissions comparison of last mile

International Journal of Logistics Research and Applications >

A Leading Journal of Supply Chain Management

Volume 17, 2014 - Issue 6

5,993 139
Views CrossRef citations to date Altmetric

Original Articles

Carbon emissions comparison of last mile delivery versus customer pickup

Jay R. Brown 🔀 & Alfred L. Guiffrida

Pages 503-521 | Received 24 Jul 2013, Accepted 18 Mar 2014, Published online: 10 Apr 2014





Full Article



References

66 Citations

Metrics

Reprints & Permissions

Read this article



Abstract

The last mile problem comprises one of the most costly and highest polluting segments of the supply chain in which companies deliver goods to end customers. The recent trend towards green supply chains and social and environmental responsibility has led to many new green initiatives. One business strategy gaining popularity involves retailers offering home delivery. This paper performs a comprehensive comparison of carbon emissions resulting from conventional shopping involving customer pickup with trip chaining versus e-commerce-based online retailing involving last mile delivery to customers' homes. The break-even number of customers for carbon emissions equivalence is determined and analysed for the feasibility of last mile delivery at a desired service level based on the radius of the demand region and the delivery time available. A methodology for calculating the difference in expected carbon emissions is

formulated and demonstrated to quantify which method has the least harmful impact on the environment.

Keywords:

supply chain management last mile problem carbon emissions sustainable logistics

Acknowledgement

The authors thank the anonymous referees for their positive reviews and helpful comments.



Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email



Sign me up











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



Registered in England & Wales No. 01072954 5 Howick Place | London | SW1P 1WG