



1 of 1

Download Print Save to PDF Save to list Create bibliography

International Journal of Electrical and Computer Engineering • Open Access • Volume 10, Issue 6, Pages 6380 - 6388 • December 2020

Document type

Article • Gold Open Access • Green Open Access

Source type

Journal

ISSN

20888708

DOI

10.11591/IJECE.V10I6.PP6380-6388

View more

Demand robust counterpart open capacitated vehicle routing problem time windows and deadline model of garbage transportation with LINGO 13.0

Puspita, Fitri Maya; Simanjuntak, Ani Sahara Br.; Melati, Rima; Octarina, Sisca

^a Department of Mathematics, Faculty of Mathematics and Natural Sciences, Sriwijaya University, Palembang-Prabumulih Highway, KM 32 Inderalaya Ogan Ilir, South Sumatera, 30662, Indonesia

2 31th percentile Citations in Scopus	0.16 FWCI	28 Views count	View all metrics
---	--------------	-------------------	------------------

View PDF Full text options Export

Abstract

Author keywords

SciVal Topics

Metrics

Funding details

Abstract

Demand robust counterpart-open capacitated vehicle routing problem with time windows and deadline (DRC-OCVRPtw,d) model formed and explained in this paper, is the model used to find the minimum distance and the time needed for vehicles to transport garbage in Sukarami Sub-District, Palembang that consists of the time it takes for the vehicle to pass through the route. Time needed to transport garbage to the vehicle is called time windows. Combination of the thoses times is called deadline. The farther the distance passed by vehicle and the more garbage transported, the longer the deadline is needed. This DRC-OCVRPtw,d model is completed by LINGO 13.0 to obtain the optimal route and time deadline for Sukarami Sub-District. The model shows that the improved model of open vehicle routing problem involving the robustness, time windows and deadline can achieve the optimal routes that enable driver to save operational time in picking up the garbage compared to similar problem not involving no-time windows and deadline stated in previous research. Copyright © 2020 Institute of

Cited by 2 documents

Pickup and delivery problem in the collaborative city courier service by using genetic algorithm and nearest distance

Kusuma, P.D. , Kallista, M. (2022) Bulletin of Electrical Engineering and Informatics

Solving hybrid-vehicle routing problem using modified simulated annealing

Alsumairat, N. , Alrefaei, M. (2021) International Journal of Electrical and Computer Engineering

View all 2 citing documents

Inform me when this document is cited in Scopus:

Set citation alert

Related documents

Robust Counterpart Open-Capacitated Vehicle Routing Problem with Time Windows and Deadline (RCOCVRPTWD) Model in Optimization of Waste Transportation in Subdistrict Kalidoni, Palembang Using LINGO 13.0

Puspita, F.M. , Melati, R. , Br Simanjuntak, A.S. (2021) Journal of Physics: Conference Series

The robust counterpart open capacitated vehicle routing problem with time windows on waste transport problems

Yuliza, E. , Puspita, F.M. , Supadi, S.S. (2020) Bulletin of Electrical Engineering and Informatics

Heuristic approach for robust counterpart open capacitated vehicle routing problem with time windows

Yuliza, E. , Puspita, F.M. , Supadi, S.S. (2021) Science and Technology Indonesia


View all related documents based on references

Find more related documents in Scopus based on:

Authors Keywords

Author keywords

Deadline; Demand robust; Garbage; Time windows; Transportation OCVRP

SciVal Topics 



Metrics







Funding details



References (25)

[View in search results format >](#)

All

CSV export   Print  E-mail  Save to PDF

Create bibliography

-
- 1 Kendaganna Swamy, S., Jatti, A., Uma, B.V.
Design and implementation of secured agent based noc using shortest path routing algorithm

(2019) *International Journal of Electrical and Computer Engineering*, 9 (2), pp. 950-959. Cited 3 times.
<http://www.iaescore.com/journals/index.php/IJECE/article/view/12132/10435>
doi: 10.11591/ijece.v9i2.pp.950-959

[View at Publisher](#)
-
- 2 Yuliza, E., Puspita, F.M.
Branch and Cut Method for Solving Capacitated Vehicle Routing Problem (CVRP) Model of LPG Gas Distribution Routes

(2019) *Science and Technology Indonesia*, 4 (4), pp. 105-108. Cited 7 times.
<https://sciencetechindonesia.com/index.php/jsti/article/view/189>
doi: 10.26554/sti.2019.4.4.105-108

[View at Publisher](#)
-
- 3 Letchford, A.N., Lysgaard, J., Eglese, R.W.
A branch-and-cut algorithm for the capacitated open vehicle routing problem

(2007) *Journal of the Operational Research Society*, 58 (12), pp. 1642-1651. Cited 101 times.
<https://www.tandfonline.com/loi/tjor20>
doi: 10.1057/palgrave.jors.2602345

[View at Publisher](#)
-
- 4 Braekers, K., Ramaekers, K., Van Nieuwenhuysse, I.
The vehicle routing problem: State of the art classification and review

(2016) *Computers and Industrial Engineering*, 99, pp. 300-313. Cited 725 times.
doi: 10.1016/j.cie.2015.12.007

[View at Publisher](#)
-

- 5 Borčinová, Z., Peško, Š.
The lexicographical capacitated vehicle routing problem
(2017) *Proceedings - 2017 IEEE International Conference on Service Operations and Logistics, and Informatics, SOLI 2017*, 2017-January, pp. 86-89. Cited 2 times.
ISBN: 978-150905847-1
doi: 10.1109/SOLI.2017.8120975
[View at Publisher](#)
-
- 6 Agra, A., Christiansen, M., Figueiredo, R., Hvattum, L.M., Poss, M., Requejo, C.
The robust vehicle routing problem with time windows
(2013) *Computers and Operations Research*, 40 (3), pp. 856-866. Cited 140 times.
doi: 10.1016/j.cor.2012.10.002
[View at Publisher](#)
-
- 7 Kumar, S. N., Panneerselvam, R.
A survey on the vehicle routing problem and its variants
(2012) *Intelligent Information Management*, 4 (3), pp. 66-74. Cited 250 times.
-
- 8 Sungur, I., Ordóñez, F., Dessouky, M.
A robust optimization approach for the capacitated vehicle routing problem with demand uncertainty
(2008) *IIE Transactions (Institute of Industrial Engineers)*, 40 (5), pp. 509-523. Cited 182 times.
doi: 10.1080/07408170701745378
[View at Publisher](#)
-
- 9 Baouche, F., Trigui, R., Billot, R., Faouzi, N.E.E.
Electric vehicle shortest path problem with replenishment constraint
(2014) *2014 International Conference on Connected Vehicles and Expo, ICCVE 2014 - Proceedings*, art. no. 7297600, pp. 514-515. Cited 6 times.
ISBN: 978-147996729-2
doi: 10.1109/ICCVE.2014.7297600
[View at Publisher](#)
-
- 10 Yuliza, E.
Solution of Capacitated Vehicle Routing Problem Using Branch and Cut Method and Clarke and Wright Algorithm for Determining LPG Gas Distribution Routes
(2019) *2nd International Conference on Science and Technology (ICST)* [Online], Available
<http://semiratathe2ndicst.fmipa.unib.ac.id/>
-
- 11 Yeh, C.-C., Liu, D.-Y., Liao, Y.-K.
Two-stage iterated local search for solving capacitated vehicle routing problems ([Open Access](#))
(2016) *Proceedings - 2016 IEEE International Symposium on Computer, Consumer and Control, IS3C 2016*, art. no. 7545132, pp. 45-48. Cited 10 times.
ISBN: 978-150903071-2
doi: 10.1109/IS3C.2016.22
[View at Publisher](#)

- 12 Xu, Z.
A vehicle routing approach using mixed vehicles for pickup and delivery services to airport

(2015) *Proceedings of the 2015 27th Chinese Control and Decision Conference, CCDC 2015*, art. no. 7161956, pp. 6330-6334. Cited 2 times.
ISBN: 978-147997017-9
doi: 10.1109/CCDC.2015.7161956

[View at Publisher](#)

- 13 Daanish, A.R., Naick, B.K.
Implementation of charging station based electric vehicle routing problem using nearest neighbour search algorithm

(2017) *2017 2nd IEEE International Conference on Intelligent Transportation Engineering, ICITE 2017*, art. no. 8056880, pp. 52-56. Cited 10 times.
ISBN: 978-150906272-0
doi: 10.1109/ICITE.2017.8056880

[View at Publisher](#)

- 14 Lipowezky, U., Korenfeld, B., Ideses, I.
Solving the Capacitated Open Vehicle Routing Problem Algorithm, Based on Probability Distribution Modelling of Saving Matrix

(2018) *2018 IEEE International Conference on the Science of Electrical Engineering in Israel, ICSEE 2018*, art. no. 8646014. Cited 3 times.
<http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8643018>
ISBN: 978-153866378-3
doi: 10.1109/ICSEE.2018.8646014

[View at Publisher](#)

- 15 Hartono, Y., Puspita, F.M., Permatasari, D.I., Arisha, B.
LINGO-based on robust counterpart open capacitated vehicle routing problem (RC-OCVRP) model of waste transportation in Palembang

(2018) *2018 International Conference on Information and Communications Technology, ICOIACT 2018*, 2018-January, pp. 429-435. Cited 9 times.
<http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8343062>
ISBN: 978-153860954-5
doi: 10.1109/ICOIACT.2018.8350689

[View at Publisher](#)

- 16 Puspita, F.M., Cahyono, E.S., Rahayu, S., Sintia, B.L.
Model of Demand Robust Counterpart Open Capacitated Vehicle Routing Problem (DRC-OCVRP) Simplification by Applying Preprocessing Techniques in Rubbish Controlling in Sematang Borang District, Palembang

(2018) *E3S Web of Conferences*, 68, art. no. 01025. Cited 6 times.
www.e3s-conferences.org/
doi: 10.1051/e3sconf/20186801025

[View at Publisher](#)

- 17 Puspita, F.M., Hartono, Y., Syaputri, N.Z., Yuliza, E., Pratiwi, W.D.
Robust counterpart open capacitated vehicle routing (RC-OCVRP) model in optimization of garbage transportation in District Sako and Sukarami, Palembang City ([Open Access](#))

(2018) *International Journal of Electrical and Computer Engineering*, Part I 8 (6), pp. 4382-4390. Cited 12 times.
<http://www.iaescore.com/journals/index.php/IJECE/article/view/9955/9733>
doi: 10.11591/ijece.v8i6.pp4382-4390

[View at Publisher](#)

- 18 Ariyani, A.K., Mahmudy, W.F., Anggodo, Y.P.
Hybrid genetic algorithms and simulated annealing for multi-trip vehicle routing problem with time windows ([Open Access](#))

(2018) *International Journal of Electrical and Computer Engineering*, Part 1 8 (6), pp. 4713-4723. Cited 20 times.
<http://www.iaescore.com/journals/index.php/IJECE/article/view/12441/9835>
doi: 10.11591/ijece.v8i6.pp.4713-4723

View at Publisher
-
- 19 Puspita, F. M.
Robust Counterpart-Open Capacitated Vehicle Routing Problem with Time Windows and Deadline (RC-OCVRPTWD) Model in Optimization of Garbage Transportation in Sub-District Kalidoni, Palembang using LINGO 13.0 (2019) *2nd International Conference on Science and Technology (ICST)* Bengkulu, [Online], Available
<http://semiratathe2ndicst.fmipa.unib.ac.id/>
-
- 20 Adulyasak, Y., Jaillet, P.
Models and algorithms for stochastic and robust vehicle routing with deadlines
(2015) *Transportation Science*, pp. 1-19. Cited 5 times.
-
- 21 Xu, Z., Fu, Z.
Study on emergency response of vehicle routing based on multi-commodity dispatch VRPTD model ([Open Access](#))

(2011) *Proceedings 2011 International Conference on Transportation, Mechanical, and Electrical Engineering, TMEE 2011*, art. no. 6199267, pp. 568-571. Cited 2 times.
ISBN: 978-145771701-7
doi: 10.1109/TMEE.2011.6199267

View at Publisher
-
- 22 Sawadsitang, S., Jiang, S., Niyato, D., Wang, P.
Optimal stochastic package delivery planning with deadline: A cardinality minimization in routing

(2017) *IEEE Vehicular Technology Conference, 2017-September*, pp. 1-7. Cited 4 times.
ISBN: 978-150905935-5
doi: 10.1109/VTCFall.2017.8288239

View at Publisher
-
- 23 Sniezek, J., Bodin, L.
Cost models for vehicle routing problems ([Open Access](#))

(2002) *Proceedings of the Annual Hawaii International Conference on System Sciences*, 2002-January, art. no. 994007, pp. 1403-1414. Cited 5 times.
ISBN: 0769514359
doi: 10.1109/HICSS.2002.994007

View at Publisher
-
- 24 Solano-Charris, E. L.
(2015) *Optimization Methods for the Robust Vehicle Routing Problem*. Cited 3 times.
Thesis, Universite De Technologie De Troyes
-

□ 25 Solano-Charris, E.L., Prins, C., Santos, A.C.

A Robust optimization approach for the Vehicle Routing problem with uncertain travel cost ([Open Access](#))

(2014) *Proceedings - 2014 International Conference on Control, Decision and Information Technologies, CoDIT 2014*, art. no. 6996875, pp. 98-103. Cited 15 times.

ISBN: 978-147996773-5

doi: 10.1109/CoDIT.2014.6996875

[View at Publisher](#)

✉ Puspita, F.M.; Department of Mathematics, Faculty of Mathematics and Natural Sciences, Sriwijaya University, Palembang-Prabumulih Highway, KM 32 Inderalaya Ogan Ilir, South Sumatera, Indonesia; email: pipitmac140201@gmail.com

© Copyright 2020 Elsevier B.V., All rights reserved.

About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗

All content on this site: Copyright © 2024 Elsevier B.V. ↗, its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the Creative Commons licensing terms apply.

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies ↗.

