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Formulation of Set Covering Problem Using Myopic Algorithm and Greedy Reduction Algorithm in Determining the Location of Temporary Landfills in Semambu Island Village, Ogan Ilir Regency, South Sumatra

Puspita, Fitri Maya^a ; Octarina, Sisca^a; Hanum, Laila^b; Simamora, Chatrin Yohana^a;

Kemit, Helena Valenta Br^a; Yuliza, Evi^a

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^a Mathematics Department, Faculty of Mathematics and Natural Sciences, Sriwijaya University, Indralaya, 30662, Indonesia

^b Biology Department, Faculty of Mathematics and Natural Sciences, Sriwijaya University, Indralaya, 30662, Indonesia

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Abstract

This study discusses Set Covering Problem (SCP) in designing the optimal temporary waste disposal site (TWDS) in Semambu Island Village using the Myopic Algorithm (MA) and Greedy Reduction Algorithm (GRA). The analysis was carried out and compared using a maximum distance of 500m and 1000m to get the best solution from two methods. The results of the p-Median Problem by LINGO 13.0 software and MA with a maximum distance of 500m show the same TWDS location, namely Working Area (WA) 1, 2, 3, 4, 5, and 6 with the location of the candidate TWDS being at TWDS 2 WA 1, TWDS 1 WA 2, TWDS 2 WA 3, and TWDS 2 WA 5. For 1000m, it will be the location of the candidate's TWDS being at TWDS 2 WA 1, TWDS WA 2, and TWDS 2 WA 3. Using GRA, results were obtained will be 4 TWDS, namely TWDS

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2 Hamlet 1, TWDS 1 Hamlet 2, TWDS 2 Hamlet 3, TWDS 2, Hamlet 5. Then using GRA, 2 solutions are obtained, namely columns 2 and 5 which dominate. Column 2 nomination are Hamlets 1, 2, 3, and 6. Column 5 which dominates will be Hamlets 1, 3, 5, and 6. © 2023 The Authors.

Author keywords

Greedy Reduction Algorithm; Myopic Algorithm; Optimal TPS Location; Semambu Island Village; Set Covering Problem

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-
- 1 Akhter, F.
A Heuristic Approach for Minimum Set Cover Problem
(2015) *International Journal of Advanced Research in Artificial Intelligence*, 4 (6), pp. 40-45. Cited 10 times.
-
- 2 Alizadeh, R., Nishi, T.
Hybrid Covering Location Problem: Set Covering and Modular Maximal Covering Location Problem

(2019) *IEEE International Conference on Industrial Engineering and Engineering Management*, art. no. 8978601, pp. 865-869. Cited 2 times.
<http://ieeexplore.ieee.org/xpl/conferences.jsp>
ISBN: 978-172813804-6
doi: 10.1109/IEEM44572.2019.8978601

[View at Publisher](#)
-
- 3 Arba, M. F. D.
Strategi Inovasi Agro Wisata Di Desa Pulau Semambu Ogan Ilir
(2021) *Jurnal Pendidikan dan Pember-dayaan Masyarakat*, 8 (1), pp. 53-60.
-
- 4 Bangun, P.B.J., Octarina, S., Aniza, R., Hanum, L., Puspita, F.M., Supadi, S.S.
Set Covering Model Using Greedy Heuristic Algorithm to Determine The Temporary Waste Disposal Sites in Palembang

(2022) *Science and Technology Indonesia*, 7 (1), pp. 98-105. Cited 4 times.
<https://scietechindonesia.com/index.php/jsti/article/view/450/223>
doi: 10.26554/sti.2022.7.1.98-105

[View at Publisher](#)
-
- 5 Basciftci, B., Ahmed, S., Shen, S.
Distributionally robust facility location problem under decision-dependent stochastic demand

(2021) *European Journal of Operational Research*, 292 (2), pp. 548-561. Cited 47 times.
<https://www.journals.elsevier.com/european-journal-of-operational-research/>
doi: 10.1016/j.ejor.2020.11.002

[View at Publisher](#)
-

- 6 Bendík, J.
Selection of minimal set of locations in the public service system design
(2015) 2015 IEEE 13th International Scientific Conference on Informatics, INFORMATICS 2015 - Proceedings, art. no. 7377806, pp. 47-51. Cited 2 times.
ISBN: 978-146739868-8
doi: 10.1109/Informatics.2015.7377806
[View at Publisher](#)
-
- 7 Binev, P., Cohen, A., Mula, O., Nichols, J.
Greedy algorithms for optimal measurements selection in state estimation using reduced models
(2018) SIAM-ASA Journal on Uncertainty Quantification, 6 (3), pp. 1101-1126. Cited 20 times.
<https://epubs.siam.org/doi/pdf/10.1137/17M1157635>
doi: 10.1137/17M1157635
[View at Publisher](#)
-
- 8 Chen, A.Y., Yu, T.-Y.
Network based temporary facility location for the Emergency Medical Services considering the disaster induced demand and the transportation infrastructure in disaster response
(2016) Transportation Research Part B: Methodological, 91, pp. 408-423. Cited 101 times.
www.elsevier.com/inca/publications/store/5/4/8/
doi: 10.1016/j.trb.2016.06.004
[View at Publisher](#)
-
- 9 Chen, X.M., Zheng, H., Ke, J., Yang, H.
Dynamic optimization strategies for on-demand ride services platform: Surge pricing, commission rate, and incentives
(2020) Transportation Research Part B: Methodological, 138, pp. 23-45. Cited 55 times.
www.elsevier.com/inca/publications/store/5/4/8/
doi: 10.1016/j.trb.2020.05.005
[View at Publisher](#)
-
- 10 Doungpan, S.
Application the Facility Location Model for Setting Ready-Mix Concrete Plant: Case Study at Rayong Province, Thailand
(2020) 2020 IEEE 7th International Conference on Industrial Engineering and Applications, ICIEA 2020, art. no. 9101949, pp. 615-619. Cited 2 times.
<http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=9093929>
ISBN: 978-172816785-5
doi: 10.1109/ICIEA49774.2020.9101949
[View at Publisher](#)
-
- 11 Dzator, M., Dzator, J.
An Efficient Modified Greedy Algorithm for the P-median Problem
(2015) International Congress on Modelling and Simulation, 4 (5), pp. 61-64.

- 12 Gajda, M., Trivella, A., Mansini, R., Pisinger, D.
An optimization approach for a complex real-life container loading problem

(2022) *Omega (United Kingdom)*, 107, art. no. 102559. Cited 15 times.
<https://www.sciencedirect.com/journal/omega>
doi: 10.1016/j.omega.2021.102559

View at Publisher
-
- 13 Kawi, E. A., Rusdiansyah, A.
(2009) *Analisis Penentuan Lokasi Pembangunan Stasiun Pengisian Bulk Elpiji (spbe) untuk Program Konversi Minyak Tanah Ke Lpg 3 Kg Di Propinsi Jawa Timur Menggunakan Metode P-median*, 4 (6), pp. 1-3.
(In Indonesia)
-
- 14 Kocaoglu, B., Acar, A. Z., Yilmaz, B.
Demand Forecast, Up-to-date Models, and Suggestions For Improvement an Example Of A Business
(2014) *Journal of Global Strategic Management*, 8 (1), pp. 26-37. Cited 3 times.
-
- 15 Kordalewski, D.
(2013) *New Greedy Heuristics for Set Cover and Set Packing*. Cited 4 times.
Graduate Department of Computer Science: Master
-
- 16 Machado, A.M., Mauri, G.R., Boeres, M.C.S., Rosa, R.D.A.
A new hybrid matheuristic of GRASP and VNS based on constructive heuristics, set-covering and set-partitioning formulations applied to the capacitated vehicle routing problem ([Open Access](#))

(2021) *Expert Systems with Applications*, 184, art. no. 115556. Cited 9 times.
<https://www.journals.elsevier.com/expert-systems-with-applications>
doi: 10.1016/j.eswa.2021.115556

View at Publisher
-
- 17 Medrano-Gómez, X.D., Ferreira, D., Toso, E.A.V., Ibarra-Rojas, O.J.
Using the maximal covering location problem to design a sustainable recycling network ([Open Access](#))

(2020) *Journal of Cleaner Production*, 275, art. no. 124020. Cited 8 times.
<https://www.journals.elsevier.com/journal-of-cleaner-production>
doi: 10.1016/j.jclepro.2020.124020

View at Publisher
-
- 18 Mohri, S.S., Haghshenas, H.
An ambulance location problem for covering inherently rare and random road crashes ([Open Access](#))

(2021) *Computers and Industrial Engineering*, 151, art. no. 106937. Cited 13 times.
<https://www.journals.elsevier.com/computers-and-industrial-engineering>
doi: 10.1016/j.cie.2020.106937

View at Publisher
-

- 19 Octarina, S., Puspita, F.M., Supadi, S.S., Eliza, N.A.
Greedy Reduction Algorithm as the Heuristic Approach in Determining the Temporary Waste Disposal Sites in Sukarami Sub-District, Palembang, Indonesia
(2022) *Science and Technology Indonesia*, 7 (4), pp. 469-480.
scinetechindonesia.com/index.php/jsti
doi: 10.26554/sti.2022.7.4.469-480
View at Publisher
-
- 20 Özceylan, E., Mete, S., Çil, Z.A.
Optimizing the location-allocation problem of bike sharing stations: A case study in gaziantep university campus
(2017) *Proceedings of the 14th International Symposium on Operational Research, SOR 2017*, 2017-September, pp. 141-146. Cited 5 times.
ISBN: 978-961616550-1
-
- 21 Puspita, F. M., Octarina, S., Pane, H.
Pengopti-malan Lokasi Tempat Pembuangan Sementara (TPS) Meng-gunakan Greedy Reduction Algorithm (GRA) di Kecamatan Kemuning
(2019) *Annual Reseach Seminar*, 4 (1), pp. 267-274. Cited 4 times.
-
- 22 Segall, M., Lumb, R., Lall, V., Moreno, A.
Health-care Facility Location: A DEA Approach
(2017) *American Journal of Management*, 17 (6), pp. 54-65. Cited 6 times.
-
- 23 Sitepu, R., Puspita, F.M., Lestari, I., Indrawati, Yuliza, E., Octarina, S.
Facility Location Problem of Dynamic Optimal Location of Hospital Emergency Department in Palembang
(2022) *Science and Technology Indonesia*, 7 (2), pp. 251-256. Cited 2 times.
<https://scinetechindonesia.com/index.php/jsti/article/view/496/243>
doi: 10.26554/sti.2022.7.2.251-256
View at Publisher
-
- 24 Sitepu, R., Puspita, F.M., Romelda, S., Fikri, A., Susanto, B., Kaban, H.
Set covering models in optimizing the emergency unit location of health facility in Palembang (Open Access)
(2019) *Journal of Physics: Conference Series*, 1282 (1), art. no. 012008. Cited 13 times.
<http://iopscience.iop.org/journal/1742-6596>
doi: 10.1088/1742-6596/1282/1/012008
View at Publisher
-
- 25 Sitepu, R., Puspita, F.M., Romelda, S., Fikri, A., Susanto, B., Kaban, H.
Set covering models in optimizing the emergency unit location of health facility in Palembang (Open Access)
(2019) *Journal of Physics: Conference Series*, 1282 (1), art. no. 012008. Cited 13 times.
<http://iopscience.iop.org/journal/1742-6596>
doi: 10.1088/1742-6596/1282/1/012008
View at Publisher
-

- 26 Yang, P., Xiao, Y., Zhang, Y., Zhou, S., Yang, J., Xu, Y.
The continuous maximal covering location problem in large-scale natural disaster rescue scenes
(2020) *Computers and Industrial Engineering*, 146, art. no. 106608. Cited 15 times.
<https://www.journals.elsevier.com/computers-and-industrial-engineering>
doi: 10.1016/j.cie.2020.106608
View at Publisher
-

- 27 Zhang, K., Zhang, S.
Maximizing the Service Area: A Criterion To Choose Optimal Solution in The Location of Set Covering Problem
(2015) *International Conference on Geoinformatics*, 20, pp. 1-3. Cited 3 times.
-

🔍 Puspita, F.M.; Mathematics Department, Faculty of Mathematics and Natural Sciences, Sriwijaya University, Indralaya, Indonesia; email:fitrimayapuspita@unsri.ac.id
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