

BAB V KESIMPULAN DAN SARAN

A. Kesimpulan

Penelitian ini menerapkan nilai Myerson pada aliansi maskapai penerbangan domestik rute Jakarta (CGK)-Denpasar (DPS) dengan tiga pemain, yaitu Garuda Indonesia, Citilink, dan Lion Air. Berdasarkan data operasional sebagai representasi kondisi tahun 2024, berhasil dibentuk fungsi karakteristik yang merepresentasikan keuntungan setiap kemungkinan koalisi sebagai dasar dalam perhitungan alokasi keuntungan menggunakan nilai Myerson.

Penerapan nilai Myerson pada penelitian ini menunjukkan bahwa pembagian keuntungan aliansi tidak hanya merefleksikan keuntungan individual awal masing-masing maskapai, tetapi juga kontribusi maskapai dalam menjaga keterhubungan koalisi melalui posisinya dalam graf komunikasi. Dengan demikian, nilai Myerson pada kasus ini menilai kontribusi maskapai dari dua sisi sekaligus, yaitu kontribusi ekonomi melalui keuntungan koalisi dan kontribusi struktural melalui perannya dalam graf komunikasi.

Hasil penelitian menunjukkan bahwa besarnya nilai koalisi pada rute CGK-DPS lebih dipengaruhi oleh kontribusi operasional maskapai dalam koalisi yang tercermin dari kapasitas kursi, load factor, dan tambahan penumpang, daripada kedekatan grup usaha. Hal ini terlihat dari koalisi Garuda Indonesia-Lion Air yang lebih menguntungkan dibandingkan koalisi Garuda Indonesia-Citilink, meskipun Garuda Indonesia dan Citilink berada dalam satu grup usaha.

Alokasi keuntungan yang diperoleh dari penerapan nilai Myerson memenuhi sifat efisiensi dan *individual rationality* pada setiap graf komunikasi yang diuji. Selain itu, karena permainan yang dibentuk bersifat convex, alokasi tersebut berada dalam core, sehingga hasil pembagian keuntungan yang diperoleh bersifat stabil.

B. Saran

Dalam penelitian menggunakan beberapa parameter basis asumsi literatur, sehingga penelitian selanjutnya disarankan untuk menggunakan data primer atau hasil estimasi ekonometrik agar parameter yang digunakan lebih akurat dan mencerminkan kondisi industri penerbangan domestik secara lebih tepat. Selain itu, penelitian selanjutnya juga dapat mengembangkan model ini dengan menambah jumlah pemain, memperluas cakupan ke rute-rute domestik lain yang memiliki tingkat persaingan tinggi, atau mengintegrasikan analisis jaringan rute yang lebih kompleks sehingga hasil yang diperoleh lebih general dan dapat dijadikan acuan kebijakan industri penerbangan nasional secara lebih luas.



DAFTAR PUSTAKA

- Abdelghany, A., Sattayalekha, W., & Abdelghany, K. (2009). On airlines code-share optimisation: A modelling framework and analysis. *International Journal of Revenue Management*, 3(3), 307–330. <https://doi.org/10.1504/IJRM.2009.027389>
- Affandi, P. (2011). Penerapan program linier pada permainan non kooperatif. *Jurnal Matematika Murni Dan Terapan*, 5(2), 1–12.
- Amankwah-Amoah, J., & Debrah, Y. A. (2011). The evolution of alliances in the global airline industry: A review of the African experience. *Thunderbird International Business Review*, 53(1), 37–50. <https://doi.org/10.1002/tie.20388>
- Aminudin, S. S. (2020). *Prinsip-prinsip Riset Operasi* (Lemeda Simarmata (ed.)). Erlangga.
- Amir, M. F., Prasojo, B. H. (2016). Buku Ajar Matematika Dasar. In *Buku Ajar Matematika Dasar*. UMSIDA PRESS. <https://doi.org/10.21070/2017/978-979-3401-66-9>
- Aprisadianti, N. (2020). Aplikasi Pewarnaan Graf dalam Mengombinasikan Pemakaian Produk Skincare dengan Kandungan Bahan Aktif. *Makalah IF2120 Matematika Diskrit, Institut Teknologi Bandung*. <http://informatika.stei.itb.ac.id/~rinaldi.munir/Matdis/2020->
- Aripin, W. T., Fuadi, M. M., & Bilqis, M. R. (2024). Analisis Penentuan Strategi Pemasaran Optimal Warung Jajanan Mamadamay Cintaraja Tasikmalaya Menggunakan Metode Game Theory. *Cipasung Techno Pesantre*, 18(1), 24–30.
- Asfa'ani, E. (2017). Titik Setimbang Nash pada Permainan Linear Kuadratik Non-kooperatif dengan Asumsi Keseluruhan Pemain dapat Menstabilkan Sistem. *Math Educa Journal*, 1(2), 211–224. <https://doi.org/10.15548/mej.v1i2.28>
- Atkinson, R. M. (2011). *A Strategic Analysis Of The Oneworld by Projekt Submitted In Partial Fulfillment*.
- Badan Pusat Statistik. (2025). *Berita Resmi Statistik (3Februari 2025)*. 1–63. <https://bps.go.id/pressrelease.html>
- Barron, E. N. (2008). *Game Theory An Introduction (Second Edition)* (Second Edi). Loyola University Chicago.

- Brueckner, J. K. (2001). The economics of international codesharing. *International Journal of Industrial Organization*, 19(10), 1475–1498. [https://doi.org/10.1016/S0167-7187\(00\)00068-0](https://doi.org/10.1016/S0167-7187(00)00068-0)
- Brueckner, J. K. (2003). The Benefits of Codesharing and Antitrust Immunity for International Passengers. *Journal of Air Transport Management*, 9(2), 83–89. [https://doi.org/10.1016/S0969-6997\(02\)00073-7](https://doi.org/10.1016/S0969-6997(02)00073-7)
- Brueckner, J. K. (2005). International Airfares in the Age of Alliances: The Effect of Codesharing and Antitrust Immunity. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.281328>
- Chalkiadakis, G., Markakis, E., & Jennings, N. R. (2012). Coalitional stability in structured environments. *11th International Conference on Autonomous Agents and Multiagent Systems 2012, AAMAS 2012: Innovative Applications Track, 1*, 168–175. <https://doi.org/10.65109/pbmk6948>
- Chen, L., Li, Y. Q., & Liu, C. H. (2019). How airline service quality determines the quantity of repurchase intention - Mediate and moderate effects of brand quality and perceived value. *Journal of Air Transport Management*, 75(October), 185–197. <https://doi.org/10.1016/j.jairtraman.2018.11.002>
- Conti, C. (2001). Code-sharing and air carrier liability. *Air and Space Law*, 26(1), 4–19. <https://doi.org/10.54648/332044>
- D.E.Pitfield, R. E. C. and M. A. Q. (2010). Air line Strategies for Air craft Size and Air line Frequency with changing Demand and Competition: A simultaneous equations approach for traffic on the north Atlantic . *Journal of Air Transport Management*, 9(5), 307–316. [https://doi.org/10.1016/S0969-6997\(03\)00033-1](https://doi.org/10.1016/S0969-6997(03)00033-1)
- Darwanto, Dinata, K. B., J. (2020). *Teori Himpunan*. Universitas Muhammadiyah Kotabumi.
- Dutta, B., & Jackson, M. O. (2003). On the Formation of Networks and Groups. In Bhaskar Dutta and Matthew O. Jackson (Ed.), *Models of the Strategic Formation of Networks and Groups* (pp. 1–21). Heidelberg: Springer–Verlag.
- Ekawati, D. (2015). Aplikasi Graf pada Teori Automata. *Makalah IF2120 Matematika Diskrit, Institut Teknologi Bandung*.
- Evans, N. (2001). Collaborative strategy: *Tourism Management*, 22(3), 229–243. [https://doi.org/10.1016/s0261-5177\(01\)00024-3](https://doi.org/10.1016/s0261-5177(01)00024-3)
- Fan, T., Vigeant-Langlois, L., Geissler, C., Bosler, B., & Wilmking, J. (2001). Evolution of global airline strategic alliance and consolidation in the twenty-

- first century. *Journal of Air Transport Management*, 7(6), 349–360. [https://doi.org/10.1016/S0969-6997\(01\)00027-8](https://doi.org/10.1016/S0969-6997(01)00027-8)
- Ferguson, S. T. (2001). Game Theory. In *Encyclopedia of Wireless Networks*. University of California at Los Angeles Contents. https://doi.org/10.1007/978-3-319-78262-1_300242
- Gerlach, M. (2013). *Decentralized Code-Share Revenue Management in Airline Alliances*. Department of Information Systems, Freie Universität Berlin.
- Hannigan, T. J., Hamilton, R. D., & Mudambi, R. (2015). Competition and competitiveness in the US airline industry. *Competitiveness Review*, 25(2), 134–155. <https://doi.org/10.1108/CR-11-2014-0036>
- Hsu, C. I., & Wen, Y. H. (2003). Determining flight frequencies on an airline network with demand-supply interactions. *Transportation Research Part E: Logistics and Transportation Review*, 39(6), 417–441. [https://doi.org/10.1016/S1366-5545\(02\)00060-1](https://doi.org/10.1016/S1366-5545(02)00060-1)
- Hu, X. (2012). Revenue Sharing in Airline Alliances. *Management Science*, 1–19. <https://doi.org/http://dx.doi.org/10.1287/mnsc.1120.1591>
- Humphreys, B. K. (1995). The implications of international code sharing. *Journal of Air Transport Management*, 1(4), 195–207. [https://doi.org/10.1016/0969-6997\(94\)90012-4](https://doi.org/10.1016/0969-6997(94)90012-4)
- Iatrou, K., & Alamdari, F. (2005). The empirical analysis of the impact of alliances on airline operations. *Journal of Air Transport Management*, 11(3), 127–134. <https://doi.org/10.1016/j.jairtraman.2004.07.005>
- Ito, H., & Lee, D. (2007). Domestic code sharing, alliances, and airfares in the U.S. airline industry. *Journal of Law and Economics*, 50(2), 355–380. <https://doi.org/10.1086/511318>
- Jia, B. (2014). *A Study of Link Graphs*.
- Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th editi). Pearson.
- Li, L., Wang, X., Lin, Y., Zhou, F., & Chen, S. (2019). Cooperative game-based profit allocation for joint distribution alliance under online shopping environment: A case in Southwest China. *Asia Pacific Journal of Marketing and Logistics*, 31(2), 302–326. <https://doi.org/10.1108/APJML-02-2018-0050>
- Liu, W., Yang, W., & Zhu, X. (2014). Research Article: Cooperative Game Study of Airlines Based on Flight Frequency Optimization. *Journal of Applied*

Mathematics, 2014,Artic(1), 5.

Lu, Jin-Long, C.-W. Y. (2022). Good or bad? Passenger feelings regarding code-share alliances among airlines. *Journal of Air Transport Management*, 103, 102252. <https://doi.org/10.1016/j.jairtraman.2022.102252>

Maschler, M., Solan, E., & Zamir, S. (2013). The Shapley value. *Game Theory*, 748–781. <https://doi.org/10.1017/cbo9780511794216.019>

Munir, R. (2010). Matematika Diskrit (Revisi Keempat). *Informatika Bandung*, 281–308.

Myerson, R. B. (1997). Graphs and Cooperation in Games. *Matematics of Operation Research*, 2(3), 225–229.

O’Neal, J. W., dkk. (2007). Development of a Codeshare Flight-Profitability System at Delta Air Lines. *Interfaces*, 37(5), 436–444. <https://doi.org/10.1287/inte.1070.0301>

Octaria, S., Nababan, R., & Silaen, A. (2020). Perlindungan Hukum Terhadap Ketiadaan Aksesibilitas Penyandang Disabilitas Sebagai Penumpang Pesawat Udara Oleh Maskapai Penerbangan Di Indonesia Ditinjau Dari Uu Nomor 1 Tahun 2009 Tentang Penerbangan. *Jurnal Hukum PATIK*, 9(1), 10–19. <https://doi.org/10.51622/patik.v9i1.226>

Odoni, A., & Barnhart, C. (2009). *The Global Airline Industri* (P. Belobaba, A. Odoni, & C. Barnhart (eds.)). John Wiley & Sons, Ltd Registered.

Olgun, M. O. (2022). Collaborative airline revenue sharing game with grey demand data. *Central European Journal of Operations Research*, 30(3), 861–882. <https://doi.org/10.1007/s10100-021-00787-w>

Oum, T. H., Yu, C., & Zhang, A. (2001). Global airline alliances: International regulatory issues. *Journal of Air Transport Management*, 7(1), 57–62. [https://doi.org/10.1016/S0969-6997\(00\)00034-X](https://doi.org/10.1016/S0969-6997(00)00034-X)

Pinontoan, B., & Titaley, J. (2019). *Matematika Diskrit*. CV. Patra Media Grafindo Bandung.

Ramsey, D. M., Gąsior, D., & Rajiansyah. (2025). A Cooperative Game Theoretic Model of a Multi-Agent Information Network Based on the Myerson Value. *Procedia Computer Science*, 270, 1669–1678. <https://doi.org/10.1016/j.procs.2025.09.287>

Saad, W. (2010). Coalitional Game Theory for Distributed Cooperation in Next Generation Wireless Networks. In *Dissertation / PhD Thesis*. Department of

Informatics, Faculty of Mathematics and Natural Sciences, University of Oslo.

Salmah. (2022). *Teori Permainan dan Aplikasinya (Nanik (ed.))*. Gadjah Mada University Press.

Suh, J., & Yoon, S. G. (2021). Profit-Sharing Rule for Networked Microgrids Based on Myerson Value in Cooperative Game. *IEEE Access*, 9, 5585–5597. <https://doi.org/10.1109/ACCESS.2020.3048329>

Suheri, A., Welsa, H., & Kurniawan, I. S. (2022). The Influence of Advertising Attractiveness and Brand Image on Purchase Intention and Its Impact on Airline Purchasing Decisions Sriwijaya Air. *Kolaboratif Sains*, 5(2), 110–119. <https://www.jurnal.unismuhpalu.ac.id/index.php/JKS/article/view/2250/1956>

Syarifuddin, D. T. (2011). *Riset Operasi (Aplikasi Quantitative Analysis for Management)* (M. Dr. Sujono, SE. (ed.)). CV. Citra Malang.

Teng, L., & Tang, M. (2024). Cooperative Strategy for Airline Code-Share Agreements – A Comparative Analysis. *Promet - Traffic and Transportation*, 36(3), 433–449. <https://doi.org/10.7307/ptt.v36i3.530>

Tian, X. (2021). Computer software applied in cooperative game analysis using myerson value in the probability graph. *Journal of Physics: Conference Series*, 2033(1). <https://doi.org/10.1088/1742-6596/2033/1/012029>

Tugores-García, A., & . (2012). *Analysis of Global Airline Alliances as a Strategy for International Network Development*. Massachusetts Institute of Technology.

Vaze, V., & Barnhart, C. (2012). Modeling airline frequency competition for airport congestion mitigation. *Transportation Science*, 46(4), 512–535. <https://doi.org/10.1287/trsc.1120.0412>

Wang, K., Fan, X., & Fu, X. (2024). *Competition and Demand Dynamics in Major Airline Routes*.

Zhang, F., & Graham, D. J. (2020). Air transport and economic growth: a review of the impact mechanism and causal relationships. *Transport Reviews*, 40(4), 506–528. <https://doi.org/10.1080/01441647.2020.1738587>

Zou, L., & Chen, X. (2017). The effect of code-sharing alliances on airline profitability. *Journal of Air Transport Management*, 58, 50–57. <https://doi.org/10.1016/j.jairtraman.2016.09.006>

Zulkarnain, A., Luhung Prasojo, G., Prayitno, H., Efendi, E., & Agung Widayat, T. (2023). Strategi Membangun Kepercayaan Publik Bidang Transportasi

Udara Terhadap Maskapai Penerbangan di Indonesia. *SKYHAWK : Jurnal Aviasi Indonesia*, 3(2), 235–243. <https://doi.org/10.52074/skyhawk.v3i2.127>

