

**Volkan Soner Özsoy (Assoc. Prof.)****Present Address**

Department of Finance, Banking, and Insurance  
 Aksaray University, 68400  
 Aksaray, Turkey

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**Education****Gazi University****Ankara, Turkey****Ph.D.** Department of Statistics, Operations Research

Oct 2019

*Dissertation title:* Bootstrap Approach in Dynamic Network Data Envelopment Analysis Models

*Minors:* Bootstrap, Network DEA, Simulation*Advisor:* Professor Hasan Bal**Gazi University****Ankara, Turkey****M.Sc.** Department of Statistics, Operations Research

Sep 2012

*Dissertation title:* New Decision Support System for Performance Analysis*Minors:* Computer Science, DSS, DEA, Performance Analysis*Advisor:* Professor Ihsan Alp**Karadeniz Technical University****Trabzon, Turkey****B.Sc.** Department of Statistics and Computer Science

Jun 2010

**Appointments****Aksaray University,****Aksaray, Turkey**

Department of Finance, Banking, and Insurance

*Associate Professor*

Sep 2021 - present

*Assistant Professor*

Dec 2019 - Sep 2021

**Gazi University, Department of Statistics****Ankara, Turkey***Research Assistant*

Jan 2014 - Dec 2019

**Marmara University****Istanbul, Turkey***Research Assistant*

Jun 2013 - Jan 2014

**Nigde University, Department of Statistics****Nigde, Turkey***Research Assistant*

Jan 2012 - Jan 2013

**The Ministry of Family and Social Policies****Turkey**

Directorate General for Social Aids, Social Assistance and Solidarity Foundation

*Assistant Expert*

Sep 2011 - Jan 2012

**Special Trainings****Big Data Analysis****Ankara, Turkey**

Havelsan Co.

Jun 2018

**Project Cycle Management (PCM)****Ankara, Turkey**

Ministry of European Union &amp; Gazi University

Nov 2011 - Dec 2011

**Research Interests**

Methodologies: Machine Learning, Operations Research, Big Data, Performance Analysis, Optimization, Simulation, Bootstrap, Data Mining  
 Applications: R, Python, MATLAB, Visual Studio C#, AMOS, DEAP, L<sup>A</sup>T<sub>E</sub>X, SPSS Clementine (IBM Modeler)

**Courses Taught****Survey Research and Design Courses****Ankara, Turkey**

Design of questionnaires, application methods, scale types and sampling methods

Radio and Television Supreme Council (RTUK)

July 2020

**SPSS, AMOS, MAXQDA Courses** **Kahramanmaraş, Turkey**  
Scale, Reliability and Qualitative Research Methods  
Kahramanmaraş Sütçü İmam University Jun 2019

**Microsoft Office Programs Courses** **Ankara, Turkey**  
Statistical Consulting, Training, Practice and Research Center (İDEAM)  
Gazi University Apr 2019

## Teaching

Data Science  
Forecasting Methods in Data Science  
Data Preparation and Visualization  
Python and R Programming  
Statistical Machine Learning  
Python and R Applications in Data Science  
IST2006 Operations Research I G.U. Dept. of Statistics (2013-2019)  
IST3006 Operations Research II G.U. Dept. of Statistics (2013-2019)  
IST3003 Optimization Techniques G.U. Dept. of Statistics (2013-2019)  
IST3005 Simulation Techniques G.U. Dept. of Statistics (2013-2016)  
IST3002 Regression Analysis G.U. Dept. of Statistics (2015-2019)

## Journal Publications

1. **Özsoy, V.S.**, Belgin, Ö., Balkan, D. (2022) A Novel approach for determining common weights in two division network DEA: a case study of Science and Technology Parks in Turkey. *Technology Analysis & Strategic Management*, xx, xx-xx. (indexed in SCI-Exp).
2. **Özsoy, V.S.**, Doğan, M.İ. (2022). Which Universities Use Their Spaces Efficiently? Efficiency Analysis of the Public University in Turkey. *Journal of Polytechnic*, xx, xx-xx. (indexed in ESCI).
3. Muvingi, J., Peer, A.A.I., Lotfi, F.H., **Özsoy, V.S.** (2022) Hierarchical Groups DEA Cross-efficiency and TOPSIS technique: An application on mobile money agents locations. *International Journal of Mathematics in Operational Research*, 21(2), 171-199. (indexed in ESCI).
4. Doğan, M.İ., **Özsoy, V.S.**, Örkücü, H.H. (2021) Performance Management of OECD Countries on Covid-19 Pandemic: A Criticism using Data Envelopment Analysis Models. *Journal of Facilities Management*, 19(4), 479-499. (indexed in ESCI).
5. **Özsoy, V.S.**, Örkücü, H.H. (2021) Structural and operational management of Turkish airports: a bootstrap data envelopment analysis of efficiency. *Utilities Policy*, 69, 101180. (indexed in SSCI).
6. **Özsoy, V.S.**, Örkücü, M., Örkücü, H.H. (2021). A minimax approach for selecting the overall and stage-level most efficient unit in two stage production processes. *Annals of Operations Research*, 300, 137-169. (indexed in SCI-Exp.).
7. **Özsoy, V.S.**, (2021). The determination of the most suitable inertia weight strategy for Particle Swarm Optimization via the minimax mixed-integer linear programming model, *Engineering Computations*, 38(4), 1933-1954 (indexed in SCI-Exp.).
8. **Özsoy, V.S.**, Örkücü, H.H., Örkücü, M. (2021). A simplistic approach without epsilon to choose the most efficient unit in data envelopment analysis. *Expert Systems with Applications*, 54(4), 1215-1230. (indexed in SCI-Exp.).

9. Küçük, A., Demirci, M., Kerman, G., **Özsoy, V.S.** (2021). Evaluating of Hospital Appointment Systems in Turkey: Challenges and Opportunities. *Health Policy and Technology*, 10(1), 69-74. **(indexed in SSCI)**.
10. **Özsoy, V.S.**, Ünsal, M.G. Örkücü, H.H. (2020). Use of the heuristic optimization in the parameter estimation of generalized gamma distribution: comparison of GA, DE, PSO and SA methods. *Computational Statistics*, 35, 1895–1925. **(indexed in SCI-Exp.)**.
11. Örkücü, M., **Özsoy, V.S.**, Örkücü, H.H. (2020). An Optimistic-Pessimistic DEA Model Based on Game Cross Efficiency Approach. *RAIRO Operations Research*, 54(4), 1215-1230. **(indexed in SCI-Exp.)**.
12. Küçük, A., **Özsoy, V.S.**, Balkan, D. (2020) Assessment of Technical Efficiency of Public Hospitals in Turkey. *European Journal of Public Health*, 30(2), 230-235. **(indexed in SSCI)**.
13. **Özsoy, V.S.**, Örkücü, M., Örkücü, H.H. (2020). The most efficient supplier selection with mixed-integer two-stage data envelopment analysis model. *Pamukkale University Journal of Engineering Sciences*, 26(4), 758-767. **(indexed in ESCI)**.
14. Yavuzaslanoglu, E., **Özsoy, V.S.** (2020). Resistance reactions of onion landraces collected from Turkey to the stem and bulb nematode *Ditylenchus dipsaci*. *Mediterranean Agricultural Sciences*, 33(2), 195-199. **(indexed in WoS)**
15. Örkücü, H.H., **Özsoy, V.S.**, Örkücü, M., Bal, H. (2019). A neutral cross efficiency approach for basic two stage production systems. *Expert Systems with Applications*, 125, 333-344. **(indexed in SCI-Exp.)**.
16. Yavuzaslanoglu, E., Sonmezoglu, O., Genc, N., Akar, Z., Ocal, A., Karaca, M., Elekcioğlu, I., **Özsoy, V.S.**, & Aydogdu, M. (2019). Occurrence and abundance of nematodes on onion in Turkey and their relationship with soil physicochemical properties, *Nematology*, 21(10), 1063-1079. **(indexed in SCI-Exp.)**.
17. Alp, İ., **Özsoy, V.S.** (2019). A New Robust Bootstrap Algorithm for Assessment of Common Set of Weights in Performance Analysis. *Iranian Journal of Management Studies*. **(indexed in ESCI)**.
18. **Özsoy, V.S.**, Örkücü, H.H., Bal, H. (2018). Particle Swarm Optimization Applied to Parameter Estimation of the Four-Parameter Burr III Distribution. *Iranian Journal of Science and Technology, Transactions A: Science*, 42(2), 895-909. **(indexed in SCI-Exp.)**
19. Alp, İ., **Özsoy, V.S.** (2017). Two Stage Approach for the Performances of Teams in Football Using Data Envelopment Analysis. *Gazi University Journal of Science*, 30(3), 195-208. **(indexed in ESCI)**.
20. **Özsoy, V.S.**, Örkücü, H.H. (2016). Estimating the Parameters of Nonlinear Regression Models Through Particle Swarm Optimization. *Gazi University Journal of Science*, 29(1), 187-199. **(indexed in ESCI)**.
21. Bal, H. & **Özsoy, V.S.** (2016). Selecting DEA model specifications and ranking units via principal component analysis: an application of economic performance of cities. *Dumlupınar University Journal of Social Sciences*, 125-135.

22. Örkücü, H.H., **Özsoy, V.S.**, Aksoy, E., Doğan, M. I. (2015). Estimating the parameters of 3-p Weibull distribution using particle swarm optimization: A comprehensive experimental comparison. *Applied Mathematics and Computation*, 268, 201-226. (indexed in SCI-Exp.)

# of Citations	# of citations: 88 h-index: 6	Web of Science
	# of citations: 96 h-index: 6	Scopus
	# of citations: 148 h-index: 7	Google Scholar

Book Chapters	<b>Özsoy, V.S.</b> , (2018). “Network Data Envelopment Analysis”, <i>Current Topics in Quantitative Decision Methods: Theory and Practice</i> , ISBN:978-605-344-767-2, Page 15-30.
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| Conference Proceedings | <ol style="list-style-type: none"> <li>1. <b>Özsoy, V.S.</b> (2020). Performance of Differential Evolution, Particle Swarm Optimization, Genetic Algorithm, and Artificial Bee Colony algorithms in clustering analysis. 20<sup>th</sup> International Symposium on Econometrics, Operations Research and Statistics, Ankara, Turkey.</li> <li>2. <b>Özsoy, V.S.</b>, Özsoy, M., Örkücü, H.H. (2020). Determination of The Most Efficient Cement Producer of Turkey using Mixed Integer Linear Programming Model. 20<sup>th</sup> International Symposium on Econometrics, Operations Research and Statistics, Ankara, Turkey.</li> <li>3. <b>Özsoy, V.S.</b> (2019). Execution of Particle Swarm Optimization Algorithm according to Acceleration Coefficients and Inertia Weight Strategies. The 2<sup>nd</sup> International Conference on Artificial Intelligence towards Industry 4.0, Iskenderun, Turkey.</li> <li>4. Balkan, D., <b>Özsoy, V.S.</b>, Belgin, Ö. (2019). Evaluation of Technology Development Zones using Data Envelopment Analysis. 5<sup>th</sup> International Conferences on Engineering Sciences, Ankara, Turkey.</li> <li>5. <b>Özsoy, V.S.</b>, Bal, H. (2019, June 17-18). Two Stage Data Envelopment Analysis Models: Multiplicative and Additive Model. 10<sup>th</sup> International Conference of Strategic Research on Scientific Studies and Education (ICoSReSSE), Rome, Italy.</li> <li>6. Demir, E., <b>Özsoy, V.S.</b>, Örkücü, H.H., (2019, June 28-30). Estimation of parameters of Levy Distribution by Genetic Algorithm: a simulation study. 3<sup>rd</sup> International Congress of Applied Sciences, Sivas, Turkey.</li> <li>7. Bal, H., <b>Özsoy, V.S.</b> (2019, June 17-18). Efficiency Analysis of Telecommunication Sector among The World’s Top R&amp;D investing companies. 10<sup>th</sup> International Conference of Strategic Research on Scientific Studies and Education (ICoSReSSE), Rome, Italy.</li> <li>8. Örkücü, H.H., <b>Özsoy, V.S.</b>, Örkücü, M. (2019). Cross Efficiency Model in Network Data Envelopment Analysis Models. 6<sup>th</sup> International Symposium on Academic Studies in Science, Engineering and Architecture Sciences, Ankara, Turkey.</li> <li>9. Örkücü, H.H., <b>Özsoy, V.S.</b> (2019). Estimation of Parameters of Rayleigh Distribution by Differential Evolution Algorithm: A Simulation Study. 6<sup>th</sup> International Symposium on Academic Studies in Science, Engineering and Architecture Sciences, Ankara, Turkey.</li> </ol> |
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10. **Özsoy, V.S.**, Örkücü, H.H, Bal, H., RTM: Interactive estimation tool for modeling real-time wind speed. *5<sup>th</sup> International Conference on Management Information Systems (IMISC 2018)*, 2018, Ankara, Turkey.
11. **Özsoy, V.S.**, Alp, İ. R&D Index of Countries based on the R&D Performance of the World Top 2500 Companies. *1. International Mersin Symposium*. Mersin.
12. Gölcükcü, A., **Özsoy, V.S.**, Bal, H. Multiplier DEA Model in case of zero data for Cultural Development Comparison. *4<sup>th</sup> International Congress on Social and Economic Sciences (ICSES)*, November 26-30, 2018, Budapest, Hungary.
13. Alp, İ. **Özsoy, V.S.**, NBA 2016 Sezonu Basketbol Takımların Veri Zarflama Analizi ile Performansının Değerlendirilmesi. *1. International Mersin Symposium*. Mersin, Turkey.
14. Bal, H., **Özsoy, V.S.**, Gölcükcü, A., Comparison of DEA Models for The Performance Evaluation of The World's Top R&D Investing Companies in The Automobiles Industry. *4<sup>th</sup> International Congress on Social and Economic Sciences (ICSES)*, November 26-30, 2018, Budapest, Hungary.
15. **Özsoy, V.S.**, Kocak, E., "Evaluation of the Life Index Based on Data Envelopment Analysis: Quality of Life Indexes of Turkey", *10<sup>th</sup> International Statistics Congress , 2017*, December 06 to 08, 2017 Ankara, Turkey.
16. Tüzüner, Z., Örkücü, H.H., Bal, H., **Özsoy, V.S.**, Kocak, E., "The Health Performances of the Turkey Cities by the Mixed Integer DEA Models", *10<sup>th</sup> International Statistics Congress , 2017*, December 06 to 08, 2017 Ankara, Turkey.
17. **Özsoy, V.S.**, Bal, H., "A New Variable Selection Method for Data Envelopment Analysis Through Bootstrap Approach", *International Conference on Computational and Statistical Methods in Applied Sciences (COSTAS 2017)*, November 9 to 11, 2017 Samsun, Turkey.
18. Bal, H., **Özsoy, V.S.**, Örkücü, H. H., "A New Weights Method for Cross Efficiency Based on Goal Programming in Data Envelopment Analysis", *International Conference on Computational and Statistical Methods in Applied Sciences (COSTAS 2017)*, November 9 to 11, 2017 Samsun, Turkey.
19. **Özsoy, V.S.**, Örkücü, H. H., Dogan, M. I., Bal, H., "Evaluation of Dynamic Performance of Electricity Distribution Companies in Turkey using Window Analysis", *3<sup>rd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2017)*, 24-26 May, 2017, Konya, Turkey.
20. **Özsoy, V.S.**, Örkücü, H. H., Dogan, M. I., Bal, H., "Simulation study of estimating the unknown parameters in distributions using Particle Swarm Optimization", *3<sup>rd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2017)*, 24-26 May, 2017, Konya, Turkey.
21. **Özsoy, V.S.**, Örkücü, H. H., Dogan, M. I., Bal, H., "Measuring the efficiency in the Turkish Banking Industry: Application of Data Envelopment Analysis and Malmquist Productivity Index", *3<sup>rd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2017)*, 24-26 May, 2017, Konya, Turkey.

22. Dogan, M. I., Örkücü, H. H., **Özsoy, V.S.**, Bal, H., "A Hybrid Method for Multi-Group Classification Problem", *3<sup>rd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2017)*, 24-26 May, 2017, Konya, Turkey.
23. Dogan, M. I., Örkücü, H. H., **Özsoy, V.S.**, Bal, H., "A New Two-Group Classification Method Based on Data Envelopment Analysis", *3<sup>rd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2017)*, 24-26 May, 2017, Konya, Turkey.
24. Bal, H., **Özsoy, V.S.**, "Selecting DEA model specifications and ranking units via Principal Component Analysis: A application of economic performance of cities", *International Conference on Economics, Business Management and Social Sciences (ICEBSS 2016)*, October 5-9, 2016, Sarajevo, Bosnia-Herzegovina.
25. Gölcükcü, A., **Özsoy, V.S.**, Bal, H., "Matrix Model for Multiple Group Comparison with Malmquist Data Envelopment Analysis: a Basketball League Example", *Operational Research Society Annual Conference (OR58)*, Page 21-29, 6 – 8 September 2016, University of Portsmouth, Portsmouth, Germany.
26. Örkücü, H.H., **Özsoy, V.S.**, "New approaches to cross efficiency in DEA and performance evaluation of Turkey's cities", *International Conference on Applied Mathematics and Analysis (ICAMA2016)*, Page 78, July 11-13, 2016, Atılım University, Ankara, Turkey.
27. **Özsoy, V.S.**, Örkücü, H.H., "Measuring the efficiency of Turkey airports with various data envelopment analysis models", *International Conference on Applied Mathematics and Analysis (ICAMA2016)*, Page 83, July 11-13, 2016, Atılım University, Ankara, Turkey.
28. **Özsoy, V.S.**, "Yapay Arı Kolonisi ile Doğrusal Olmayan Regresyon Modellerinin Parametre Tahmini", *Proceedings of 17<sup>th</sup> International Symposium on Econometrics, Operations Research and Statistics*, Page 674-675, June 2-4, 2016, Cumhuriyet University, Sivas, Turkey.
29. **Özsoy, V.S.**, Örkücü, H.H., "Benzetilmiş Tavlama Algoritması ile Üç Parametrelili Weibull Dağılımının Parametrelerinin Tahmin Edilmesi", *Proceedings of 17<sup>th</sup> International Symposium on Econometrics, Operations Research and Statistics*, Page 630-631, June 2-4, 2016, Cumhuriyet University, Sivas, Turkey.
30. **Özsoy, V.S.**, Bal, H., "Küresel Rekabetçilik Endeksinin Veri Zarflama Analizi ile Ölçülmesi ve Bootstrap Veri Zarflama Analizi Uygulaması", *Proceedings of 17<sup>th</sup> International Symposium on Econometrics, Operations Research and Statistics*, Page 640-641, June 2-4, 2016, Cumhuriyet University, Sivas, Turkey.
31. Örkücü, H.H., **Özsoy, V.S.**, "Estimating the unknown parameters of the four parameter Burr III distribution through Differential Evolution", *Proceedings of 2<sup>nd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2016)*, Page 38, May 4-8, 2016, Hacettepe University, Ankara, Turkey.
32. Bal, H., **Özsoy, V.S.**, Örkücü, H.H., "A goal programming method selection of weights in Data Envelopment Analysis: An evaluation of efficiency of Turkish airports case", *Proceedings of 2<sup>nd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2016)*, Page 36, May 4-8, 2016, Hacettepe University, Ankara, Turkey.

33. **Özsoy, V.S.**, Bal, H., Tüzüner, Z., "Evaluation of performance of the highways of the European Union countries using Bootstrap Data Envelopment Analysis", *Proceedings of 2<sup>nd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2016)* , Page 37, May 4-8, 2016 , Hacettepe University, Ankara, Turkey.
34. Dogan, M.I., **Özsoy, V.S.**, Örkücü, H.H., "Assessing productive efficiency of banks using Malmquist DEA and Bootstrap DEA: A case of Turkish banks", *Proceedings of 2<sup>nd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2016)* , Page 35, May 4-8, 2016 , Hacettepe University, Ankara, Turkey.
35. Tüzüner, Z., Bal, H., **Özsoy, V.S.**, "Performance Evaluation of European Union Countries Transportation with Stochastic Frontier Analysis", *Proceedings of 2<sup>nd</sup> International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2016)* , Page 90, May 4-8, 2016 , Hacettepe University, Ankara, Turkey.
36. **Özsoy, V.S.**, Bal, H., "Measurement of Climate Risk Index with Data Envelopment Analysis", *Proceedings of the 35<sup>th</sup> Operations Research and Industrial Engineering Congress (ORIE 2015)* , 129-130, Sept 9-11, 2015 , METU, Ankara, Turkey.
37. **Özsoy, V.S.**, Alp, İ., "Turkish Decision Support System for Performance Analysis With C# Programming Language", *Proceedings of the 11<sup>th</sup> International Conference of Data Envelopment Analysis and Performance Measurement (DEA2013)*, 389-394, June 27-30, 2013 , Samsun, Turkey.
38. **Özsoy, V.S.**, Alp, İ., "New Decision Support System for Performance Analysis", *Proceedings of 10<sup>th</sup> International Conference on Knowledge, Economy and Management & 11<sup>th</sup> International Conference of ASIA Chapter of the AHRD & 2<sup>nd</sup> International Conference of MENA Chapter of Academy of Human Resource Development*, 494-501, Nov 8-10, 2012, İstanbul, Turkey.
39. **Özsoy, V.S.**, Alp İ., "New Decision Support System for Performance Analysis", *Proceedings of the 5<sup>th</sup> Engineering and Technology Symposium*, 114-117, Apr 26-27, 2012, Ankara, Turkey.

## Reviews

- *Referee:* Cybernetics and Systems (indexed in SCI-Exp.)
- *Referee:* Journal of Information Technology & Decision Making (indexed in SCI-Exp.)
- *Referee:* Journal of Applied Statistics (indexed in SCI-Exp.)
- *Referee:* Operational Research - An International Journal (indexed in SCI-Exp.)
- *Referee:* RAIRO - Operations Research (indexed in SCI-Exp.)
- *Referee:* Expert Systems (indexed in SCI-Exp.)
- *Referee:* Applied Artificial Intelligence (indexed in SCI-Exp.)
- *Referee:* INFOR: Information Systems and Op. Research (indexed in SCI-Exp.)
- *Referee:* Machine Learning with Applications (indexed in ESCI)
- *Referee:* Gazi University Journal of Science (indexed in ESCI)
- *Referee:* Journal of Polytechnic (indexed in ESCI)
- *Referee:* Journal of Productivity
- *Referee:* Journal of Turkish Operations Management

<b>Honors</b>	• Incentive Awards for International Scientific Publications TUBİTAK	2019 Ankara, Turkey
	• Incentive Awards for International Scientific Publications Gazi University,	2019 Ankara, Turkey
	• Honorable Mention Award Int. Conf. on Business Economics and Soc. Sci.,	2016 Sarajevo, Bosnia-Herzegovina
	• Incentive Awards for International Scientific Publications Gazi University,	2016 Ankara, Turkey
	• Graduated second among 60 students in the department Karadeniz Technical University,	2010 Trabzon, Turkey
<b>Professional Society Service</b>	• Member: International Association of Engineers (IAENG),	since 2017
	• Member: International Statistical Institute (ISI),	since 2014
	• Member: Bernoulli Society (BS),	since 2013
	• Member: European Network for Business and Industrial Statistics (ENBIS),	since 2013