

MOSTAFA DAVTALAB-OLYAIE

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RESEARCH INTERESTS

Operations Research, Optimization, Productivity and Efficiency Analysis, Bench Marking, Big Data Analysis, Classification and Machine Learning.

CURRENT RESEARCH

Data Envelopment Analysis (DEA) and Stochastic DEA applied to economic, management and health. Multi-Objective programming. Big Data Analysis, classification.

CURRENT POSITION

Assistant professor, Department of Applied Mathematics, Faculty of Mathematical Sciences,
Kashan University, Kashan, Iran. *Sep. 2014- ...*

EDUCATION AND APPOINTMENTS

McGill University, Montreal, Canada, *March. 2018 - April. 2018*
Visiting, Department of Mathematics and Statistics,
Stochastic DEA and classification.

Kharazmi University (National University of Iran), Tehran, Iran, *Sep. 2009 - June. 2014*
PhD of Science in Applied Mathematics (Operations Research),
 Thesis: *Characterizing full dimensional facets of PPS and statistical inference in stochastic DEA* (Degree: Excellent).

University of Montreal, Montreal, Canada, *Jul. 2013 - Sep. 2013*
Visiting, Ecole Polytechnique, Department of Industrial Engineering,
DEA for big data.

McGill University, Montreal, Canada, *Feb. 2012 - Dec. 2012*
Graduate Research Trainee, Department of Mathematics and Statistics,
Statistical Inference in Stochastic DEA.

Kharazmi University, Tehran, Iran, *Sep. 2005 - Jan. 2008*
Master of Science in Applied Mathematics,
 Thesis: *Ranking DMUs with Principle Component Analysis and Data Envelopment Analysis* (Degree: Excellent).

University of Isfahan, Isfahan, Iran, *Sep. 2001 - Jun. 2005*
Bachelor of Science in Applied Mathematics,
 Thesis: *Introduction on Multi-Objective Programming* (Degree: Excellent).

PUBLICATIONS

PUBLISHED PAPERS

- Davtalaab-Olyaie, M. and Roshdi, I. and Jahanshahloo. G. R. and Asgharian. M (2014) . Characterizing and finding full dimensional efficient facets in DEA: a variable returns to scale specification, *Journal of Operational Research Society*, 65:1453-1464.

- **Davtalab-Olyaie, M.** and Roshdi, I. and Partovi Nia, V. and Asgharian. M. (2015) On characterizing full dimensional weak facets in DEA with variable returns to scale technology, *Optimization*, 64:2455-2476.
- Roshdi, I. and Jahanshahloo. G. R. and **Davtalab-Olyaie, M.** (2012) Characterizing and Finding Full Dimensional Efficient Facets of PPS with Constant Returns to Scale Technology, *International Journal of Industrial Mathematics*.
- **Davtalab-Olyaie, M.** and Maleki, M. S. (2017) A Mathematical Model for Evaluating the Efficiency of the University of Kashan's Faculties, *Accepted in Mathematics Interdisciplinary Research*, DOI: 10.22052/mir.2017.89450.1066.
- **Davtalab-Olyaie, M.** (2019). A secondary goal in DEA cross-efficiency evaluation: A 'one home run is much better than two doubles' criterion. *Journal of the Operational Research Society*, 70 (5): 807-816.
- **Davtalab-Olyaie, M.**, Asgharian, M., and Nia, V. P. (2019). Stochastic ranking and dominance in DEA. *International Journal of Production Economics*, 214:125-138.

SUBMITTED PAPERS

- **Davtalab-Olyaie, M.** and Asgharian, M. and Partovi Nia, V. (2017). Stochastic Ordering in Data Envelopment Analysis, *under review in Operations Research*.
- Roshdi, I. and Van de Woestyne, I and **Davtalab-Olyaie, M.** Determining Maximal Reference Set in DEA, arXiv:1407.2593.
- **Davtalab-Olyaie, M.** (2017). A new method for selecting the optimal weights in cross-efficiency evaluation, *under review in Journal of Operational Research Society*.

WORKING PAPERS AND PROJECTS

- Stochastic DEA when variables are subject to right censoring.
- Dimension reduction and variable selection in DEA.
- Pareto optimality in cross-efficiency evaluation.
- New method for solving Multi-objective shortest path problem
- Efficiency predicting.
- Efficiency stability in DEA.
- Sensitivity analysis in stochastic DEA.
- New methods in classification.
- Proposing general secondary goal models in cross-efficiency evaluation.
- Developing some new methods in centralized resource allocation.

TALKS

- **Davtalab-Olyaie, M.**, and Davtalab-Olyaie. F. (2019). A New Fair Fixed Costs Allocation method using data envelopment analysis. *50th Annual Iranian Mathematics Conference*, Shiraz, Iran.

- **Davtalaab-Olyaie, M.**, and Mahmudi-Baram. H. (2019). A new Bi-level model for centralized resource allocation. *50th Annual Iranian Mathematics Conference*, Shiraz, Iran.
- **Davtalaab-Olyaie, M.**, Ghandi. F. and Davtalaab-Olyaie. F. (2019). Fixed Costs Allocation using Game Theory. *Proceedings of the 12th International Conference of Iranian Operations Research Society*, Babolsar, Iran.
- **Davtalaab-Olyaie, M.**, Mahmudi-Baram. H. (2019). Ranking Decision Making Units using Centralized Resource Allocation. *Proceedings of the 12th International Conference of Iranian Operations Research Society*, Babolsar, Iran.
- **Davtalaab-Olyaie, M.** and Ghandi. F. (2018). Solving the shortest path problem using weighted sum technique in DEA. *49th Annual Iranian Mathematics Conference*, Tehran, Iran.
- **Davtalaab-Olyaie, M.** and Ghandi. F. (2018). A new peer-evaluation method for ranking decision making units. *10th National Conference on Data Envelopment Analysis*, Karaj, Iran.
- **Davtalaab-Olyaie, M.** and Ghandi. F. (2017). Extending the shortest path problem using cross-efficiency evaluation method. *48th Annual Iranian Mathematics Conference*, Hamedan, Iran.
- **Davtalaab-Olyaie, M.** (2018). On ranking of DMUs in stochastic DEA. *Proceedings of the 11th International Conference of Iranian Operations Research Society*, Kermanshah, Iran.
- **Davtalaab-Olyaie, M.** and Ghandi, F (2017). A new method for Pareto-Improvement in cross efficiency-evaluation. *Proceedings of the 10th International Conference of Iranian Operations Research Society*, Babolsar, Iran.
- **Davtalaab-Olyaie, M.** (2016). Stochastic Data Envelopment Analysis. Held November 2016, GERAD seminars, Canada Excellence Research Chair in Data Science for Real-Time Decision-Making, Montreal, Canada.
- **Davtalaab-Olyaie, M.** and Karimi, B. (2016). A two stage algorithm for the two groups classification problem: a combined LP-GP based approach. *Proceedings of the 9th International Conference of Iranian Operations Research Society*, Shiraz, Iran, 892–899.
- **Davtalaab-Olyaie, M.** and Karimi, B. (2016). A New Approach for Evaluating Cross Efficiency in DEA with Undesirable Outputs (in Persian). *Proceedings of the 9th International Conference of Iranian Operations Research Society*, Shiraz, Iran, 563–569.
- **Davtalaab-Olyaie, M.** (2013). Characterization and structure of FDEF of PPS with BCC technology. Held Jan 26-28, 2011, IPM, Tehran, Iran.
- **Davtalaab-Olyaie, M.** (2012). Statistical inference in stochastic DEA, *40th Annual Meeting of the Statistical Society of Canada*. June 3-6, 2013, University of Guelph, Ontario.
- **Davtalaab-Olyaie, M.** (2007). Principal component analysis and DEA. Lahijan University, Lahijan, Iran.

REVIEWING ARTICLES FOR THE FOLLOWING JOURNALS

- Mathematical Methods of Operations Research.
- European Journal of Industrial Engineering.
- Omega (The International Journal of Management Science).

GRANTS

Research Center, Affiliated to the Ministry of Science and Technology of Iran, *2014-2015*
Evaluation and direction for improvement for education groups of Iranian Universities: A data envelopment analysis approach .
 \$12,000

HONORS AND AWARDS

Top Student *September 2012*
 Among Ph.D. students graduated in Applied Mathematics,
 Kharazmi University (National University of Iran), Tehran, Iran.

Visiting Scholarship *Feb 2012*
 Awarded to the top students nationally to visit foreign Universities for research;
 Ministry of Science and Technology, Iran.

1th Ranked *July 2008*
 Among more than 150 attendees in Ph.D. entrance exam (nationally),
 Kharazmi (National University of Iran), Tehran, Iran.

Top Student *June 2005*
 Awarded to the top student graduated from Bachelor of Science in Mathematics,
 University of Isfahan, Isfahan, Iran.

TEACHING EXPERIENCE

Lecturer, *2010- 2012, 2013-*
Kashan University, Kashan, Iran,
 Advanced Operation Research (Graduate course), Multi-objective programming (Graduate course),
 Data envelopment analysis (Graduate course), Operation Research I & II, Non-linear programming,
 Multi Criteria Decision Making, Differential Equations, Calculation II for Engineering, Statistics
 and Probability for Engineering.

Lecturer, *2009 - 2011*
Kharazmi University (National University of Iran), Tehran,
 Operation Research I & II, Differential Equations, Calculation II & III, Engineering Mathematics.

Lecturer, *2007 - 2008*
Qom University, Qom, Iran,
 Statistics and Probability for Engineering, Calculation II, Operation Research I .
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SUPERVISION

Fatemeh Ghandi, Master of Science in Applied Mathematics, Department of Mathematics, Master
 of Science in Applied Mathematics, Shahid Rajaei Teacher Training University (2017). Najmeh
 Nasiri, Master of Science in Applied Mathematics, Department of Mathematics, Qom University
 (2012).

TECHNICAL STRENGTHS

Programming Language and Operation Research Software R, Mathematica, C
 GAMS, MATLAB, Lingo