

IDENTIFICAÇÃO

Programa de Pós-Graduação em Engenharia de Produção e Sistemas

Nível: Mestrado Doutorado

Disciplina: Pesquisa Operacional e Suporte à Tomada de Decisão

Semestre: 2024/1

Carga horária: 45h/a - Créditos: 03

Professor: Prof. Dr. Fabio Antonio Sartori Piran

Código da disciplina: 895774/895760

EMENTA

Proporcionar conhecimento sobre modelagem para tomada de decisão, utilizando métodos, técnicas e ferramentas apropriadas para cada contexto, utilizando ferramentas computacionais.

CONTEÚDO PROGRAMÁTICO

1. Princípios Básicos de Modelagem.
2. Análise Envoltória de Dados (DEA).
3. Análise multicritério (Analytic Hierarchy Process - AHP)
4. Redes Neurais Artificiais.

AVALIAÇÃO

A avaliação consiste da apresentação de seminário(s) (30%) e de um artigo (70%).

**BIBLIOGRAFIA BÁSICA **

ALMEIDA, A. O conhecimento e o uso de Métodos Multicritério de Apoio à Decisão. 2. ed. Pernambuco: Universitária UFPE, 2011. 234 p. ISBN: 978-85-7315- 868-7.

BERTRAND, J. Will M.; FRANSOO, Jan C. Operations management research methodologies using quantitative modeling. International Journal of Operations & Production Management, 2002.

HAYKIN, Simon S. Redes neurais: princípios e prática. 2. ed. Porto Alegre: Bookman, 2001.

MITROFF, Ian I. et al. On managing science in the systems age: two schemas for the study of science as a whole systems phenomenon. Interfaces, v. 4, n. 3, p. 46-58, 1974.

PIRAN, Fabio Sartori, LACERDA, Daniel Pacheco; CAMARGO, Luis Felipe Riehs. Análise e gestão da eficiência: Aplicação em sistemas produtivos de bens e de serviços. Elsevier Brasil, 2018.

PIRAN, Fabio Sartori et al. Internal benchmarking to assess the cost efficiency of a broiler production system combining data envelopment analysis and throughput accounting. *International Journal of Production Economics*, v. 238, p. 108173, 2021.

SINUANY-STERN, Zilla. Foundations of Operations Research: From Linear Programming to Data Envelopment Analysis. *European Journal of Operational Research*, 2022.

BIBLIOGRAFIA COMPLEMENTAR

AIGNER, Dennis; LOVELL, CA Knox; SCHMIDT, Peter. Formulation and estimation of Stochastic Frontier Production function models. *Journal of Econometrics*, v. 6, n. 1, p. 21-37, 1977.

ALLEN, Robert et al. Weights restrictions and value judgements in data envelopment analysis: evolution, development and future directions. *Annals of Operations Research*, v. 73, p. 13-34, 1997.

CAMANHO, A. S.; DYSON, R. G. A generalisation of the Farrell cost efficiency measure applicable to non-fully competitive settings. *Omega*, v. 36, n. 1, p. 147-162, 2008.

CHAMBERS, Robert G.; CHUNG, Yangho; FÄRE, Rolf. Benefit and Distance Functions. *Journal of economic theory*, v. 70, n. 2, p. 407-419, 1996.

DYSON, Robert G.; THANASSOULIS, Emmanuel. Reducing weight flexibility in data envelopment analysis. *Journal of the Operational Research Society*, v. 39, n. 6, p. 563-576, 1988.

FÄRE, Rolf; GROSSKOPF, Shawna; WHITTAKER, Gerald. Network DEA. In: Modeling data irregularities and structural complexities in data envelopment analysis. Springer, Boston, MA, 2007. p. 209-240.

HO, William; XU, Xiaowei; DEY, Prasanta K. Multi-criteria decision-making approaches for supplier evaluation and selection: A literature review. *European Journal of Operational Research*, [S.I.], v. 202, n. 1, p. 16-24, 2010.

JONDROW, James et al. On the estimation of technical inefficiency in the Stochastic Frontier Production function model. *Journal of Econometrics*, v. 19, n. 2-3, p. 233-238, 1982.

LAMPE, Hannes W.; HILGERS, Dennis. Trajectories of efficiency measurement: A bibliometric analysis of DEA and SFA. *European Journal of Operational Research*, [S.I.], v. 240, n. 1, p. 1-21, 2015.

LAMPE, Hannes W.; HILGERS, Dennis. Trajectories of efficiency measurement: A bibliometric analysis of DEA and SFA. *European Journal of Operational Research*, [S.I.], v. 240, n. 1, p. 1-21, 2015.

LEWIS, Herbert F.; SEXTON, Thomas R. Network DEA: efficiency analysis of organizations with complex internal structure. *Computers & Operations Research*, v. 31, n. 9, p. 1365-1410, 2004.

LI, Feng et al. A balanced data envelopment analysis cross-efficiency evaluation approach. *Expert Systems with Applications*, New York, v. 106, p. 154-168.

LIU, John S.; LU, Louis YY; LU, Wen-Min. Research fronts in data envelopment analysis. *Omega*, v. 58, p. 33-45, 2016.

PIDD, Michael. *Modelagem empresarial: ferramentas para tomada de decisão*. Porto Alegre: Bookman, 1998.

PIRAN, Fabio Antonio Sartori et al. Product modularization and effects on efficiency: an analysis of a bus manufacturer using data envelopment analysis (DEA). *International Journal of Production Economics*, v. 182, p. 1-13, 2016.

PORTELA, Maria Conceição A. Silva. Value and quantity data in economic and technical efficiency measurement. *Economics letters*, v. 124, n. 1, p. 108-112, 2014.

SARKIS, Joseph; CORDEIRO, James J. An empirical evaluation of environmental efficiencies and firm performance: pollution prevention versus end-of-pipe practice. *European Journal of Operational Research*, [S.l.], v. 135, n. 1, p. 102-113, 2001.

THOMPSON, Russell G. et al. The role of multiplier bounds in efficiency analysis with application to Kansas farming. *Journal of Econometrics*, v. 46, n. 1-2, p. 93-108, 1990.

WADUD, Abdul; WHITE, Ben. Farm household efficiency in Bangladesh: a comparison of Stochastic Frontier and DEA methods. *Applied Economics*, v. 32, n. 13, p. 1665-1673, 2000.

WONG, Y.-HB; BEASLEY, J. E. Restricting weight flexibility in data envelopment analysis. *Journal of the Operational Research Society*, v. 41, n. 9, p. 829-835, 1990.