

DEA-cross efficiency approach for peer assessment of retail stores' efficiency

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Abstract

Retail industry is the most rapidly changing and dynamic industry in emerging economies like India. Indian retail industry is witnessing rapid growth due to vigorous investments, rise of multiformat retail, growing trends in e-commerce and m-commerce, and increasing penetration of internet. The growth in the sector is coupled with intense competition, shrinking revenues and rising expenditure on promotional activities, drawing attention of the decision makers towards efficient operations. It is imperative to develop methodologies for efficiency measurement to support planning and implementation of efficient operations. In this study we propose an approach for measuring the efficiency of multiple retail stores based on self and peer evaluation using Data Envelopment Analysis (DEA) methodology. The study also present comparison between self and peer evaluation scores and suggest roadmap for inefficient stores to identify the inputs and outputs to be optimized with respect to the nearest efficient benchmark. The validity and application of the proposed approach is presented through a case study.

Keywords: Retail stores, Cross efficiency, DEA, Benchmarking

Biographies

Nomita Pachar is currently pursuing doctoral degree at Department of Operational Research (OR) from University of Delhi, Delhi, India. She has qualified MSc and MPhil degrees in Operational Research from University of Delhi, Delhi, India in 2013 and 2015, respectively. She has obtained B.Sc. degree in Mathematical science in 2011 from Banasthali University, Rajasthan, India. Her area of research in doctoral degree is supply chain management with special focus on retailers. She is a CSIR Junior Research fellow (JRF). She has attended and presented in national and international conferences.

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