



Distance function approaches for efficiency analysis of organic production units: a critical review

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ABSTRACT

Objectives: This review aims to make a comprehensive synthesis of distance function methods for the efficiency analysis of organic production units.

Methodology and Results: The study reviewed and summarized the different approaches of distance functions applied in organic farming systems to assess performance. Original articles covering ten years, from 2010 to 2020 were identified through keyword searching using web search engines. After careful reading of the abstracts, 20 papers were finally retained. The selected papers were categorized based on study purpose and findings. Results showed a gap between the development of distance function methods and their usage in organic farming efficiency analysis. Four distance function methods were identified, and the most used in organic farming efficiency analysis were output distance function (40%) and directional output distance function (25%).

Conclusion and application of findings: Results indicate that distance functions are powerful tools in modelling multi-input and multi-output production technology for assessing organic farming efficiency. Future research should focus on these methods to deepen their understanding and applications.

Keywords: Distance function, efficiency analysis, literature review, organic farming.