Production-theory based performance benchmarking in practice: closing the gap between frontier analysis research and user-tailored decision support

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Introduction

Widespread use of frontier analysis (e.g. SFA, DEA) for research purposes

Limited use of frontier analysis for decision support in practice

Research questions

Why do production-function-based benchmarking techniques insufficiently find their way into practice?

What needs to be done in order to make them being used by decision makers?

Method

Review of the benchmarking literature

Anecdotic evidence, the Pigs2win case:
- a farm-specific production-theory based decision support system for economic-environmental trade-off analysis on farrow-to finish farms
- practical use in a farmer’s network

Results

Benchmarking in practice

Perceived added value
Understand own processes
Assess and improve performance
Enhance learning
Create ground for creative breakthroughs

Required efforts
Recognize one’s shortcomings
Be open to exchange information with competitors
Search for relevant benchmarks
Sufficient time and resources
Sufficient management skills
Involve employees

Lack of production-economic thinking
Extensive use of performance ratios
Insufficient knowledge by managers about the production function, non-linearity and marginal rules

Requirements for production-theory based benchmarking

Practical relevance of methodological assumptions
Functional form of the production function
Input minimizing or output maximizing objective

Flexible benchmarking
Account for firm-specific situation
Allow for comparing with others than best practice units

Mind your language
Avoid jargon managers are not familiar with

The role of intermediates
They may be more suitable to apply production-function-based benchmarking methods for their advisory tasks, compared to managers

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