



Methodological Evaluation of Manufacturing Systems in Senegalese Farms Using Randomized Field Trials

Fall Sow^{1,2}, Mamadou Ndiaye¹, Diallo Diamé³

¹ African Institute for Mathematical Sciences (AIMS) Senegal

² Department of Animal Science, Institut Sénégalais de Recherches Agricoles (ISRA)

³ Department of Soil Science, African Institute for Mathematical Sciences (AIMS) Senegal

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Correspondence: fsow@outlook.com

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Author notes

Fall Sow is affiliated with African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Agriculture research in Africa.

Mamadou Ndiaye is affiliated with African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Agriculture research in Africa.

Diallo Diamé is affiliated with Department of Soil Science, African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Agriculture research in Africa.

Abstract

Manufacturing systems in Senegalese farms are crucial for optimising productivity and sustainability. This study aims to evaluate these systems through randomized field trials. Randomized field trials were conducted across multiple farms to measure the performance metrics of manufacturing systems. Data collection included input-output ratios and operational costs. The analysis revealed an average efficiency increase of 15% in feed conversion rates when using optimised manufacturing processes compared to conventional methods. Randomized field trials successfully demonstrated that implementing more efficient manufacturing systems can significantly enhance productivity without compromising quality. Farmers and policy makers should prioritise the adoption of these improved manufacturing practices to achieve sustainable agricultural development in Senegal. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agriculture, randomized trials, sustainable practices, manufacturing systems, productivity measures, agro-industrial development, statistical analysis*

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