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Title: [Evaluating MFCA-based system framework for performance improvement in ceramic tile manufacturing industry](#)

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Abstract: In this paper, the applicability of 'material flow cost accounting' (MFCA) is demonstrated using a case study of ceramic tile manufacturing units located in the Morbi ceramic cluster. This study illustrates the entire process of MFCA implementation, from data collection to MFCA calculation to waste-reduction initiatives. The objectives of this study were to find ways to reduce material waste and losses, and enhance material and energy efficiency. The case study's findings suggest that MFCA is a useful tool that aids decision-makers in making better and more accurate decisions, resulting in long-term cost savings and improvement. Following the conclusion of the MFCA analysis, techniques for reducing losses and improving the production process were established. The outcomes of this study may motivate other SMEs to apply the MFCA approach to improve manufacturing system performance, and the framework provided by this study will potentially help other ceramic tile manufacturers implement it.

Keywords: material flow cost accounting; MFCA; system framework; performance improvement; ceramic tiles manufacturing; small and medium sized enterprises; SMEs.

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