Applicability of Management Science Techniques in Operations Improvements in Sri Lanka Small and Medium Scale Enterprises (SMEs)

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ABSTRACT

The Small and Medium scale Enterprises (SMEs) play an important role in the industrial development of Sri Lanka. This sector accounts for ninety one percent of the total industrial output and plays very significant role in generation of gainful employment opportunities. Despite, the majority of industries are SMEs the economic performance of a significant number of enterprises has been less than satisfactory level due to practice of inefficient technologies and productivity improvement programs. These facts indicate a critical need to ensure SMEs to be managed effectively to survive and lead the today's highly competitive and demand driven market. In this context, the firms' management must make several conscious decisions regarding operations.

MS techniques can be considered as robust tools that offer directions in making the best decisions in an organization. They employ quantitative approaches to decision making using relevant subjective and objective information. Therefore, the study focused on analyzing the potential of applying management science techniques on operations improvement in manufacturing SMEs and the factors that contribute to adopt MS techniques in those enterprises. The Proportional odds regression model is used to identify the relevant factors. The study reveals that medium scale enterprises have more tendencies to adopt MS models than small scale enterprises. The main reasons for not using MS applications are lack of MS professionals and high operating cost. In addition, they think MS models are not applicable of their business. Based on the estimations derived from the Proportional odds regression model, management supports as well as managers' skills on MS and perceived benefits are the significant factors to adopt MS models in enterprises. The smaller sample size is one of the research limitations and the inclusion of some more variables related to environmental and macroeconomics factors will bring broader perspective to the research.

Keywords: SMEs, Management Science Techniques, decision making, operations improvement, proportional odds regression model

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