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## Use of statistical quality control techniques: a case study on Southern Province medium-scale manufacturing sector in Sri Lanka

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The need for statistical quality control techniques in the competitive business environment has been felt more important than ever. Although the importance is highlighted, most of the medium-scale entrepreneurs are not practicing these techniques sufficiently. The knowledge on which statistical quality control techniques are used in medium-scale manufacturers and the reasons for non-compliances for the statistical quality control techniques in medium-scale manufacturers are lagged behind the market requisites. Thus, the objectives of the study were to identify the statistical quality control techniques use in medium-scale manufactures, discuss the limitations hinder the level of usage of statistical quality control techniques and the possible strategies to meet-up with those limitations experienced by the medium-scale manufacturers. The survey method was used to collect the data through a structured questionnaire from the medium-scale manufacturers in Galle, Matara, and Hambantota districts in the Southern Province, Sri Lanka. A total of 108 manufactures were identified and questionnaires were administered. Descriptive statistical techniques and factor analysis were applied using R language (version 4.0.3). The results of the analysis indicate that most of the quality control techniques used by the medium-scale manufacturers are non-systematic and in a very low level. The acceptance sampling, control charts, and check sheets were identified as common statistical quality control techniques used by the medium-scale manufacturers. Two barriers were extracted from the factor analysis as attitudinal barriers and non-attitudinal barriers which limit the implementation of the statistical quality control system. Sub barriers under each category were also identified. Motivation, process development, retrenchment, and development strategies were extracted as the possible strategies to improve the usage level of statistical quality control techniques to improve the productivity. The study improves the existing knowledge and significance in organizational and macro-level policy making.

**Keywords:** Descriptive statistical techniques, Entrepreneurs, Factor analysis, Medium scale manufacturers, Statistical quality control techniques

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