THE FACTORS INFLUENCING ON PRACTICING AND SUSTAINING LEAN IN APPAREL AND TEXTILE INDUSTRY OF SRI LANKA

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Degree of Master of Science in Business Statistics

Department of Mathematics

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DECLARATION OF THE CANDIDATE

"I declare that this is my own work and this thesis/ dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text"

……. ……..

V.T.Balasooriya Date

DECLARATION OF THE SUPERVISOR

"The above candidate has carried out research for the Master Thesis/ Dissertation under my supervision"

……. ……..

Prof. T.S.G. Peiris Date

Department of Mathematics

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ABSTRACT

Apparel and Textile Industry is the key contributor in Sri Lankan economy and the industry faces many operational, business and economic challenges time to time. In order to overcome those challenges and to increase the operations excellence, many companies have adapted "Lean" methodologies. Lean Manufacturing is a systematic approach to identify and eliminate waste in the entire value chain. This research was conducted to identify the factors influencing on practicing and sustaining Lean in apparel and textile companies. Seventeen variables were identified as observed variables from literature review. A survey questionnaire was used to collect data from apparel and textile organizations who have implemented Lean. Exploratory Factor Analysis with two extraction methods (PCF, PAF) and three rotation methods (Varimax, Equamax, Quartimax) were carried out to identify major factors influence on lean practices and all the reliability and validity checks were conducted before the Factor Analysis. Four major factors were identified in the results and Principal Component Factoring and Varimax rotation used to define the final solution. Management infrastructure, Waste elimination, Process Improvement through knowledge enhancement and Organization culture were identified as four major factors influence on practicing and sustaining Lean.

Key Words: Factor Analysis, Lean Manufacturing, Operations Excellence, Principal Component Factoring.

This report is dedicated to my parents.

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