TECHNOLOGY ENABLED REVERSE LOGISTICS AS A MEANS OF REDUCING LPG DISTRIBUTION COST: THE CASE OF A LPG SUPPLIER IN SRI LANKA

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Declaration page of the candidate & supervisor

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Abstract

In the context of business industry; globalisation, innovation of technology and severe competition have been playing pivotal roles in reshaping its theories and practice for the last few decades. Presently the competition is there among players who control effective and efficient supply chains even though big or small which is not totally depends on the size or establishment of the company as before. This is very important for any product supplier because some companies are focusing on its forward supply chain while several companies focus on both forward and reverse supply chains as its product characteristics.

This research primarily focuses on comparative study of a typical reverse logistics problem of refilling of LPG cylinders in Colombo areas based on the LPG distribution process of a leading LPG supplier (ABC Company). And secondly the study focuses on potential suggestions that could be useful to reduce the cost of cylinder distribution/ collection process in long term via implementing technology enabled cylinder distributional process. Accordingly, this research investigates most influential cost factors in cylinder distribution, its technology usage, potential technology features to be implemented and issues in current distribution system as well. Thus, a physical survey was conducted for a period of 15 days focusing on 30 employees covering 6 employees from each department in ABC Company to get primary data. Stratified sampling technique was used for data collection due to varieties among employee viewpoints in each department regarding cylinder distribution process.

Finally, possible cost reduction strategies via technological enhancements are proposed to manage cylinder distribution process. And its execution on cost minimisation, dependability and flexibility management has also discussed as well.

Key Words: Reverse Logistics, Distribution and Collection, Technological Enhancements, LPG

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List of abbreviations

EDI – Electronic Data Interchange

ESM – Electronic Security Marker

KMO – Kaiser Meyer Olkin

LPG – Liquid Petroleum Gas

RFID – Radio Frequency Identification

RL – Reverse Logistics

ROI – Return On Investment

SCM – Supply Chain Management