Reuse-based Reverse Value Chain for Sustainable Apparel Industry

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Abstract

The reverse value chain is a concept that maximizes the utility of a product after end-of-life or end-of-use. Its main components are reuse, repair, up-cycling and down-cycling. This thesis has investigated the business of apparel ‘reuse’ to develop a reuse-based reverse value chain model for apparel industry. The research began by understanding the existing theory of reverse value chain. The theory includes a literature review of the value chain from the apparel industry as well as from the other industries. A conceptual framework has been developed by considering processes of reverse value chain such as collection, sorting and reprocessing.

Consequently, the thesis has undertaken a mix method (qualitative and quantitative) approach to study the reuse-based reverse value chain. An exploratory method based on multiple case studies has been adopted to explore the current sustainable practices of apparel reuse. Organizations were visited and unstructured interviews were conducted with founder and senior managers. The results have been utilized to develop an empirical model from the current practices of collection, sorting, and reprocessing. Qualitative findings highlight that higher economic recovery depends upon efficient reprocessing and collaborations with different stakeholders of the reverse value chain of apparel. Thus, an efficient resource recovery is economical as well as environmentally sustainable. Engagement of marginalized and vulnerable sections of society in the reverse value chain of apparel contributes towards social sustainability.

The empirical model was further strengthened by mathematical model formulation. Analytical hierarchy process, Genetic algorithm and Markov principle have been used for the analysis of reuse-based reverse value chain. The thesis provides theoretical contribution, implications and ways to improve the current practice of apparel reuse along with providing scope for future research.

Keywords: Reverse value chain, Reuse, Value creation, Apparel industry, Second hand clothing