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Introducing Energy Efficient Technologies in Small- and Medium-Sized Enterprises in the Apparel Industry: A Case Study of Sri Lanka

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Abstract

The energy cost contributes to a significant percentage of the total operational cost of the apparel industry. The energy cost of Sri Lanka, which is higher compared to most of the competitors, hence would make the country less price-competitive. While large apparel manufacturing companies have implemented the introduction of energy-efficient technologies at a relatively early stage, while small- and medium-sized enterprises (SMEs) are still experiencing various barriers and obstacles, due to lack of finance, knowledge, technology and motivation. This paper analyses the factors that influence the diffusion of energy-efficiency technologies in the apparel industry. We conducted a survey study of the current situation of SMEs in Sri Lanka and analysed the opportunities and challenges in the diffusion of energy-efficient technologies. Based on the empirical findings, we propose a new framework for facilitating improved access to information and finance, which will require close collaboration among various stakeholders including SMEs, industry associations, financial institutions, universities, and energy service companies. The proposed framework will eliminate information and finance barriers for the diffusion of energy-efficient technologies in SMEs in the apparel industry in Sri Lanka.

Keywords: energy-efficiency technologies, apparel industry, technology diffusion, industry associations, energy service companies

1. Introduction

Energy efficiency and renewable energy have received significant attention in recent years due to the increase in environmental issues in the world. The reduction in carbon emission is the main driver for technology innovations in energy efficiency and renewable energy in many countries [1] [2]. The government regulations and the consumer pressure mainly in the industrial countries have led to an increase in demand for the energy-efficient requirement in many countries. Apart from those influences, the cost saving associated with those technologies also motivate several medium energy consuming industries to apply the energy efficient technologies (EET). The increase in interest on the energy efficiency in the apparel manufacturing industry can be attributed to the consumer pressure and the cost reduction. The apparel industry in the world is operating in a highly competitive environment where the countries are trying to maintain the competitive position based on various aspects such as price, quality, compliance and total service providing [3]. While the quality and compliance are important in the apparel industry, still the price plays a major role in the order winning process [4].

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