



Labour productivity, energy intensity and economic performance in small enterprises: A study of brick enterprises cluster in India

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Abstract

This paper probes the role of labour efficiency in promoting energy efficiency and economic performance with reference to small scale brick enterprises' cluster in Malur, Karnataka State, India. In the bricks industry, the technology in use being similar, labour efficiency has a negative influence on energy cost. Therefore, those enterprises that exhibited higher labour productivities had lower average energy intensity and higher returns to scale as compared to those that had lower labour productivities. Considering this, improvement of labour efficiency can be an alternative approach for energy efficiency improvement in energy intensive small scale industries in developing countries like India, which face the obstacle of financial constraints in up-grading technology as a means of energy efficiency improvement.

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1. Introduction

Small enterprises occupy a place of strategic importance in the Indian economy due to their considerable contribution to industrial production, employment generation and total exports, among others. Small enterprises account for 40% of manufacturing value added (MVA), 44% of manufacturing employment and 35% of total exports in the Indian economy [1,2]. However, the performance as well as the contribution of small enterprises to the Indian economy has been less impressive since 1991 compared to the earlier decade because the economic environment in which they operate has steadily become more competitive. In this context, promotion of small enterprise competitiveness is considered crucial for their survival and growth [3].

The competitiveness of a firm, in general, can be improved by improving the efficiency of the major factor inputs of production, namely, labour, capital (or technology), energy and raw materials. Among others, energy efficiency improvement can be an important strategy for enhancing competitiveness in industry. This is because a significant portion of the operating costs of any manufacturing industry is in the form of energy costs. Therefore, energy efficiency improvement within any manufacturing organization can reduce operating costs. Any reduction in operating costs is bound to increase the competitive edge of the industry [4]. This will be particularly true for energy intensive manufacturing enterprises, including small enterprises.

An important contributor to energy efficiency improvement could be up-grading technology. Technological obsolescence has been a common feature of Indian small enterprises across the sectors [5]. Inefficient technology is bound to be energy inefficient as well [6], but up-grading technology across all small enterprises would call for an enormous amount of investment at the macrolevel, and at the microlevel, financial constraints would prevent many of the small entrepreneurs from achieving energy efficiency by means of up-grading technology.

Given this, how to promote energy efficiency in small enterprises is a major problem to policy makers in developing countries like India. It is with this background that this study is undertaken. Small enterprises in countries like India use relatively more labour intensive technologies. This holds good even for energy intensive industrial sectors like bricks. If this is true, labour would play a major role in the utilization of machinery, energy and the raw material inputs. Therefore, labour efficiency will have a significant influence on energy utilization and efficiency. If this is true, improvement of labour efficiency should lead to improvement of energy efficiency and, in turn, economic performance in small enterprises. This study is an attempt to substantiate this argument.

In the Indian context, no empirical study has thrown light on these issues. This paper analyzes the labour productivity, energy intensity and economic performance in the context of the brick enterprises' cluster in the Karnataka State of India. This paper is structured to comprise six sections. Section 2 briefly deals with the policy measures in force to promote energy conservation in small enterprises, and Section 3 presents a brief review of the literature. Section 4 describes the objectives, scope and methodology and background of four clusters. Section 5 comprises analysis of the objectives, and Section 6 consists of summary and conclusions.

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