Optimizing the Productive Efficiency of Manufacturing Firms: A Model Framework

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Firms strive hard to achieve a high degree of efficiency on the production frontier, and it is where they compete to excel with their competitors. It is observed from previous studies that standardizing some policies and developing strategies could bring efficiency in production of manufacturing firms. New approaches to the measurement of productive efficiencies are being developed, and analysis of the subject is growing exponentially, since firms are now more concerned about the productivity frontier, besides others. This paper analyzes the necessary factors that contribute to the productive efficiency of an organization. A simple model of production function is constructed to understand its essence and thus contributes to the development of a new ratio that defines productive efficiency in terms of maximization of the efficiency factor that is a common issue in industrial and manufacturing organizations.

Introduction

Productivity is the basis for competitive strength. Competitive strength is a model of business success. And, financial incentives drive company performance (Pfeffer, 1994). Indeed, the penultimate yardstick or benchmark for business success is profit, but behind profit there happens to be performance, strategy and competition, productivity and innovation, and learning and efficiency, among various other determining variables of business success. Success here depends on the strength of competitive performance of a firm or a business organization. The two important facets, 'productivity' and 'competitive strength', however, are closely entwined with innovation—the grand fundamental basis of organizational growth and evolution through new knowledge creation (Nonaka, 1991), which would likely remain so in the future as well. Based on these facets, organizations leverage another factor for excelling in their businesses: productive efficiency. The idea and concept of productive efficiency arose from the pioneering works of Farrell (1957) on measuring productivity and work efficiency. The concept is further based on the theoretical understanding of the term efficiency (Førsund and Hjalmarsson, 1974). In economies of scale, manufacturing firms (Badunenko *et al.*, 2008) strive hard to gain production efficiency, i.e., making a product at a minimal cost with limited resources in least possible time.

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