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A STUDY OF MATHEMATICAL MODELS OF PRODUCTION FUNCTIONS

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Abstract : In this paper we study the production and cost function in generalized form. The formulation and generalization may be used to study the production behaviour and cost structure of any industry.

1. Introduction

Production is a sequence of technical processes requiring either directly or indirectly the mental and physical skill of craftsman and consists of changing the shape size and properties of materials and ultimately converting them into more useful articles. In short we may understand production as an organised activity of transformation of raw materials into finished products to satisfy the human wants [5].

Production function is a purely technical relation which connects factors input and outputs. It describes the law of productions, that is the transformation of factor inputs into outputs at any particular time period. The production function represents the technology of an industry on of the economy as a whole. When one is concerned with the input output relation of a single industry this comes under study of micro-economic, No-one is really interested in this type of model. A model which deals with input-output relation of whole industry comes under micro-economic level [10].

If we consider the input of an industry only labour and capital, we will not be able to get realistic model for appropriate measurement of output. We have to take into account managerial skills, good labour relation, technical progress and many other parameter which influence the output. Griliches [7] and Jorgenson [9] studied the effects of various inputs on the production function. Mathematical models in industry have been extensively investigated by Hall [8], Anderson [2,3] and Andrews [1].

In the present work we study the production function and cost function in generalized form.