

A random effects model analysis of the factors contributing to food production worldwide

ABSTRACT

Food is the substance eaten or drunk to provide nutrition for the body. Among problems faced in the food production industry are climate changes, lack of land for cultivation, inadequate resources, expensive high technology and also natural disaster. The objective of the study is to find the relevant factors that contribute more to the food production index. The relevant quantitative variables chosen for this study are Livestock Production Index, Agricultural Machinery, Land under Cereal Production and Food Export. On the other hand, Food and Agricultural Organization (FAO) membership and Tropical Climate have been used as the qualitative variables. Using Random Effects Model under Panel Data Analysis; the results indicate strong significant relationship of Livestock Production Index, Agricultural Machinery and Land under Cereal Production towards food production. It is to be concluded that most of the variables used in the study including time are significant in explaining the food production worldwide. For future studies more independent variables should be added such as employment in the agriculture sector, technology, fertilizer production, water sources, population rate and World Trade Organization (WTO) rules and regulations.

Keyword: Food production; Agriculture; Random effects model; Econometrics; STATA