TECHNICAL EFFICIENCY OF CINNAMON (Cynnamomum

zeylanicum) PRODUCTION IN THIHAGODA DS DVIVISION,

MATARA.



BY

HASINI NAVODYA RAJAPAKSHA



DEPARTMENT OF AGRICULTURAL ECONOMICS

FACULTY OF AGRICULTURE

'EASTERN UNIVERSITY

VANTHARUMULAI

SRI LANKA

JULY 2019

ABSTRACT

The study examined the technical efficiency of cinnamon production in Matara district, Thihagoda DS division. The sample size of 100 farmers selected from through the proportionate stratified random sampling technique among the 9 major cinnamon producing GN divisions were used in this study. Technical efficiency (TE) was measured by Stochastic Production Frontier approach. Firstly, the Stochastic Production Frontier model run for the cinnamon production using the Cobb Douglass production functional format. Where the linear form of the yield was the dependent variable and the linear forms of the extent of land under cultivation, cost of hired labor, fertilizer, transport and planting materials were used as an independent variables. TE was estimated as the ratio between the observed and the estimated expected output.

Estimation of factors associated with TE at farmers' level were education in schooling years, age of the farmer, occupation, number of farm visits by extension officer and number of farmer training classes participated by farmers. Only occupation was affected to the TE of cinnamon production. MS excel and SPSS version 22 was utilized for this purpose. The independent variables the land extent and the hired labor cost was significant in explaining the variation in yield. That were positively affected on yield. That means increase the land and hired labor cost the yield also increase. The average technical efficiency was 99.89%.

Keyword: (s) Technical Efficiency of Cinnamon Production, Cobb- Douglass production function, Stochastic Production Frontier, Matara.

TABLE OF CONTENTS

ABSTRACT	
ACKNOWLEDGEMENT	
TABLE OF CONTENTS	III
LIST OF TABLES	VI
LIST OF FIGURES	VII
ABBREVIATION	
CHAPTER 01	
INTRODUCTION	
1.1 Background	
1.2 Problem Statement	
1.3 Objective of the study	
CHAPTER 02	
	2
LITERATURE REVIEW.	
2.1 Cinnamon Cultivation in Sri Lanka	
2.2 Processing of Cinnamon	
2.3 Industry Position in the Global Market	
2.4 Cinnamon Cultivation in Matara District	
2.5 Technical efficiency	
2.6 Other Approaches to Technical Efficiency	

	2.7 Prior Studies Utilizing the Stochastic Frontier Approach	14
	2.8 Estimation of Stochastic Production Frontier	15
	2.9 Theoretical Background	16
	2.10 Model Specification	
	2.11 Empirical model	
	2.12 Resource Use Efficiency and its determinants	
	2.13 Estimation of Technical Efficiency in Sri Lanka	. 22
1	HAPTER 03	
]	RESEARCH METHODOLOGY	25
	3.1 Study area	
	3.2 Matara District	. 26
	3.3 Selection of Sample	26
	3.4 Data collection	28
	3.5 Data analysis	29
	3.6 Determine Technical Efficiency	29
С	HAPTER 04	
	RESULTS AND DISCUSSION	32
	4.1 Socio – Economic Status of Cinnamon Farmers	32
	4.2 Hired Labor Use Pattern and costs in Cinnamon Cultivation	33
	4 3 Extent of Land Use Pattern	34

4.4 Transport Cost
4.5 Fertilizer Cost
4.6 Planting Material Cost
4.7 Total Costs of Cinnamon Production
4.8 Yield of Cinnamon Cultivation
4.9 Unit Price of Cinnamon Quills
4.10 Marketed Quantity of Cinnamon Quills
4.11 Production Income of the Cinnamon Farmer
4.12 Extension Services
4.13 Estimates of Stochastic Production Frontier model
4.14 Factors affecting of Technical Efficiency
4.15 Technical Efficiency of the Cinnamon Production
CHAPTER 0545
SUMMARY AND CONCLUSIONS
5.1 Summary
5.2 Conclusion
REFERENCES
ANNEXURES