

UNIVERSITI TEKNOLOGI MARA

**PROFITABILITY AND TECHNICAL
EFFICIENCY OF COCONUT
PRODUCTION AMONG
SMALLHOLDERS IN BATU PAHAT,
JOHOR**

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MSc

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree of qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Malaysia is listed as one of the top ten coconut producing countries in the world and the coconut is the 4th most important industrial crop after oil palm, paddy and rubber in the country. Coconut cultivation plays significant roles as a source of income and provides employment to more than 100,000 families that wholly or partly depend on coconut especially among smallholders. The industry had provided smallholder farmers with an opportunity to expand their resources for coconut cultivation and to fulfil domestic requirements to cater for fresh consumption and coconut processing industry. On the contrary, coconut smallholders were also facing productivity gap due to variations in farming practices, socio-economic conditions as well as economic factors such as demand and supply that had resulted in price instability and varied profitability of coconut. Therefore, the present study aimed to investigate issues relating to socio-economic status, as well as factors and constraints that influenced profitability and technical efficiency of coconut production among smallholders in Batu Pahat, Johor, Malaysia. A sample of 152 smallholders was selected through a random sampling technique. The profitability and technical efficiency of coconut production in this study were analysed using Cost-Benefit Analysis (CBA), Stochastic Frontier Analysis (SFA), Cobb Douglas Production Function and Exploratory Factor Analysis. The results observed several socio-economic factors that can lead to the increasing of smallholders' technical efficiency such as land, extension program, education level, experience and transportation and provided evidence on agricultural practices that were beneficial to enhance the productivity of coconut cultivation. The result for cost-benefit analysis showed that the cultivation of coconut in the study area was profitable, as indicated by the benefit-cost ratio. The lowest Cost-Benefit Ratio in the production of coconut was found to be 5.0 when the price of coconut was only at RM0.90 while the highest ratio was 8.40 when the price reached its peak at RM1.40. On the other hand, the Kaiser-Meyer-Olkin (KMO) for Exploratory Factor Analysis (EFA) was 0.716 and therefore indicated that all items were considered as good quality and reliable. A higher score of EFA concludes that the government factor was the main factor that had influenced the smallholders' profitability and technical efficiency in their coconut production in Batu Pahat, Johor, followed by knowledge and agronomic practices. While the major constraints included lack of knowledge, instability of coconut price and lack of technology. The Ordinary Least Square (OLS) method was used to estimate the Cobb Douglas production function which also incorporated technical efficiency parameters as well as technical inefficiency components. The results indicated that land was the highest input elasticity in this study while the mean level of technical efficiency for the sample of smallholders was 0.60. This implied that, on average, smallholders could only achieve about 60% of the potential maximum output from the given production inputs. The information on the profitability and technical efficiency in this study suggested that there were rooms for improvement among coconut smallholders in Batu Pahat, Johor to achieve higher profits and gain greater efficiency in the future.

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