

**ASSESSMENT OF FARMER'S ADOPTION OF GREENHOUSE
TECHNOLOGY AND THEIR PERFORMANCE IN
KALUTARA DISTRICT**



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ABSTRACT

Greenhouse plays a critical aspect in farming with solutions to most issues that traditional farmers encounter. The study aims to investigate the factors influencing farmers' performance of greenhouse technology in agriculture. The study of a quantitative cross-sectional survey was used to do the research design. Data were collected from 100 farmers who involved in greenhouse farming in Kalutara District by using a pre-tested structured questionnaire focusing on socio-economic characteristics, knowledge levels, market opportunities, government support, and financial constraints. Descriptive statistics and multiple regression analysis were conducted to analyze the data using SPSS statistical software. The study achieved a high response rate of 93%, with 87% of respondents being men, predominantly aged 30-39 years. Most respondents had completed secondary education (32%) or held diplomas (33%), and 93% owned their own greenhouses. The regression models explained 45.1% of the variance in crop yield, 24.8% in crop quality, and 29.7% in economic performance. Findings showed that knowledge level significantly improved crop yield ($p = 0.000$) and crop quality ($p = 0.011$), while government support had a negative impact on both crop yield ($p = 0.004$) and crop quality ($p = 0.010$). Market opportunities positively influenced crop yield ($p = 0.000$) and crop quality ($p = 0.078$). Economic performance was significantly enhanced by knowledge level ($p = 0.002$) and greenhouse ownership ($p = 0.014$). Additionally, part-time involvement in greenhouse activities was prevalent, with 88% of participants engaged part-time. These results provide empirical evidence on knowledge, markets, and greenhouse as important factors of the improvement of agricultural production. At the same time, there is a need to better-targeted government support.

Keywords: economic performance, farmer performance, greenhouse technology, knowledge level, market opportunities.

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