

**SPATIAL VARIATIONS IN THE ADOPTION OF AGROFORESTRY BY
SMALL SCALE FARMERS IN THARAKA NITHI COUNTY, KENYA**

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**A Thesis Submitted to the Graduate School in Partial Fulfillment for the
Requirement of the Award of Degree of Masters of Arts in Geography of Chuka
University**

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DECLARATION AND RECOMMENDATION

Declaration

This Thesis is my original work and has not been presented for the award of a degree or diploma in this or any other University.

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17-10-2024

Recommendation

This thesis has been examined, passed and submitted with our approval as the University supervisors.

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ABSTRACT

Agroforestry is vital for sustainable land use. Various efforts have been initiated to enhance adoption of agroforestry in Tharaka Nithi County. Despite the efforts made, farmers are yet to fully adopt agroforestry in Tharaka Nithi County. There is paucity of information regarding spatial variations in the adoption of agroforestry. This study therefore aimed to investigate spatial variations in adoption of agro forestry in Tharaka Nithi County. The study was based on the Rogers Adoption-Diffusion Model. The study utilized a cross-sectional survey research design. The target population was 43,231 small scale farmers in Tharaka Nithi County. Simple random sampling was employed to select 220 farmers to participate in the study. The data for the study was collected using questionnaires for farmers. Reliability of the instruments was tested using Cronbach's Alpha which obtained reliability coefficient of above 0.9 for all variables indicating that the findings are reliable and can be used to inform policy. Validity of the research instruments was ensured by basing the variables on relevant theoretical foundation. Validity of the constructs was also assessed through content validity ratio and all the constructs attained the 0.7 threshold indicating the validity of the instrument. Findings indicated spatial distribution in the adoption of agroforestry among small scale farmers in the sub counties in Tharaka Nithi County. Findings further showed that soil fertility, topography, soil color, soil depth, rainfall variability, flooding, temperatures and occupation are factors that accounted for spatial variations in agroforestry. Findings on objective three which was to examine the spatial variability in the adoption of agroforestry among small scale farmers in Tharaka Nithi County, the study obtained Pseudo R^2 values of .710 for soil type, .806 for climatic conditions, .560 for landscape, for climatic conditions .039, for social factors .048 and .781 for cultural factors indicating that all these factors (all with p values > 0.05) accounted for spatial variations in agroforestry. Based on objective three to investigate the intensity of adoption of agroforestry the P values obtained for local cattle breeds were 0.042 and 0.018 < 0.05 indicating that adoption of local cattle breed was significant. Adoption of Zero Grazing was not significant with P values 0.370 and 0.072 > 0.05 while adoption of enclosed own firm was significant with p values 0.000 and 0.00221 < 0.005. Adoption of free grazing was also significant with P values 0.032 and 0.0029 < 0.005. The findings of the study will be crucial in informing current agroforestry technology adoption decision by the farmers within Tharaka Nithi County guided by identification of constraints (socio-economic, cultural and geophysical) that hinder wide adoption of agroforestry. The findings will also be useful to agencies working with the local communities to improve agricultural production through improved farming practices through scaled advocacy and provision of support to the farmers.

DEDICATION

The thesis is dedicated to wife Florence and children Kenneth and Sheilet for the encouragement during the study period. To my mum Florence and my late dad Josphat, you took me to school and inspired me to excel.

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