

**DETERMINATES AFFECTING PRODUCTIVITY OF ARABICA COFFEE
AMONG SMALL SCALE FARMERS OF NAMABYA SUB COUNTY
NAMISINDWA DISTRICT, UGANDA.**

BY;

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DECLARATION.

I WASOLO BRIAN declare to the best of my knowledge that this research report is my work and truly based on my efforts and direct participation and it has not been submitted for any other degree award to any other university before.

Signature.....Date.....

Name of Student.....

APPROVALS.

This special project report has been submitted to the department of agribusiness and extension with approval of the University supervision.

Signature.....Date.....

Name of Supervisor.....

DEDICATION

This research dissertation is dedicated to my dear father Mr. MasaiJames, who supported, encouraged and gave me an opportunity to make my dream come true. To all those who were always on my side during the soft and rough times, I dedicate this piece of work to you.

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LIST OF ABBREVIATIONS.

UCDA: Uganda Coffee Development Authority.

NAADS: National Agricultural Advisory Development Service

NARO: National Agricultural Research Organization.

KM. Kilometer.

SPSS: Scientific Package for Social scientists.

IPM: Intergrated pest management.

ABSTRACT.

Arabica coffee is a major cash crop in Namisindwa district particularly in Namabya Sub County however the yield of Arabica coffee is lower than the estimated quantity by Uganda Coffee Development Authority and little research has been done on determinants which affects productivity of Arabica coffee in Namisindwa District particularly in Namabya Sub County. The study was conducted in October and November 2023 assessing the determinants which affects productivity of Arabica coffee in Namisindwa District in Namabya Sub County. The study utilized random sampling technique to collect data from 80 households of Arabica coffee farmers who was interviewed using questionnaires with both structured and semi structured questions. Data was analyzed using scientific package for social scientists (SPSS version 16.0). Descriptive statistics was used to analyze the characteristics of farmers as well as the years they have taken in producing Arabica coffee. Parameters like age was expressed in terms of years of farmers who involve in Arabica coffee Production in Namabya Sub County. Sex was expressed in terms of the differences between men and women who involve in Arabica coffee production. The percentage of both age and sex was obtained by dividing the number of farmers in each village with the total number of Arabica coffee farmers of the entire Sub County then multiplied by hundred. Models like regression models was used to analyze objective two. Multiple regression models was used because it shows one dependent variables being affected by the number of independent variables. Take for example of independent variables like economic determinants which included variables like price of inputs (x1, access to loans x2, availability of agro input shops x3 and farmers income x4). This was expressed in an equation as shown below. $Y = x_1, x_2, x_3, x_4, \dots$ Meaning that dependent variable Y which is productivity of Arabica coffee depends on independent variables x1, x2, x3, x4 and others. Descriptive and inferential statistics was used to analyze objective three. This involved the use of continuous variables like time to determine the period which farmers are being faced by low yield of Arabica coffee and how they have tried to solve the above problem of low yield of Arabica coffee in the Sub County.

CHAPTER ONE; BACKGROUND.

Globally coffee production is a cash crop being grown worldwide and it has increased the economic development of the economy through generating employment among the people who involve in coffee related activities.

Ethiopia is located in the horn of Africa where coffee originated from producing 400,000 tons of coffee making it the world's 5th largest producer and this has increased on income levels among the people(Olana Jawo et al., 2023).

In Sub-Saharan Africa, coffee is a major cash crop and source of income for farmers mainly in countries like central Africa, East Africa, South and West Africa. Coffee is vital to the economy of East and Central Africa, providing a major source of foreign exchange earnings and as a cash crop, supporting the livelihoods of millions who involve in cultivation, processing, marketing, and export of coffee (Rutherford et al., 2016).

Coffee is Uganda's major cash crop, both in terms of foreign exchange earnings and employment creation through export of coffee to other countries(Saragih, 2019). As a producer of coffee, Uganda ranks second in Africa and it has boasted on the level of economic development of the economy through generating employment levels(Chaves et al., 2022).

Coffee as a commodity has continued to play a leading role in the economy of Uganda Coffee contributing between 20 – 30% of the foreign exchange earnings, despite the vigorous efforts by government to diversify the economy(Widiastuti, 2021).

Coffee is among the largest Uganda's export contributing to around 22% (Wang et al., 2015). Uganda has successively managed to maintain coffee as the main engine of the national economy, exporting an average of four million bags of 60-kg each per year (UCDA, 2019). Coffee is grown by 1.7 million households in addition to the industry employing over 5 million people through coffee value chain related activities(Chialva et al., 2023). It is the country's target to achieve middle income status by 2040. To achieve this, the country targets an income level of about Ushs 20 million per household per year. Uganda coffee production fluctuated substantially in recent years, it tended to increase through 1972 - 2021 period ending at 374,760 tons in 2021(Olana Jawo et al., 2023). Arabica Coffee is one of the two major types grown in Uganda and accounts for 40% of Uganda's coffee volume which has raises on

level of coffee yield in the District. Increase in coffee yield will eventually increase farmers income since coffee is a major cash crop being grown in Namabya Sub County.

REFERENCES.

- Avelino, J., Cristancho, M., Georgiou, S., Imbach, P., Aguilar, L., Bornemann, G., Läderach, P., Anzueto, F., & Hruska, A. J. (2015). *The coffee rust crises in Colombia and Central America (2008 – 2013): impacts, plausible causes and proposed solutions*. 303–321. <https://doi.org/10.1007/s12571-015-0446-9>
- Blumenthal, P., Steger, M. C., Segatz, V., Rieke-zapp, J., Sommerfeld, K., Schwarz, S., Einfalt, D., & Lachenmeier, D. W. (2022). *Production of Coffee Cherry Spirits from Coffea arabica Varieties*. 1–28.
- Ch, S. K., K, S. R. P., Umadevi, K., & Skn, U. (2019). Impact of coffee cultivation on socio – economic conditions of farmers in Visakhapatnam district of Andhra Pradesh. *Journal of Pharmacognocny and Phytochemistry*, 8(6), 493–499.
- Chaves, A. G., Metzger, J. P., Paulo, U. D. S., Carneiro, L. G., & Garibaldi, L. A. (2022). *Positive forest cover effects on coffee yields are consistent across regions*. *March 2021*, 330–341. <https://doi.org/10.1111/1365-2664.14057>
- Chialva, M., Patono, D. L., de Souza, L. P., Novero, M., Vercellino, S., Maghrebi, M., Morgante, M., Lovisolò, C., Vigani, G., Fernie, A., Fiorilli, V., Lanfranco, L., & Bonfante, P. (2023). The mycorrhizal root-shoot axis elicits *Coffea arabica* growth under low phosphate conditions. *New Phytologist*, 239(1), 271–285. <https://doi.org/10.1111/nph.18946>
- Coffee Management Services. (2018). Coffee Economic Viability Study. *Coffee Economic Viability Study*, 19. <https://www.globalcoffeeplatform.org/assets/files/03-GCP-Tools/Kenya-Coffee-Platform-Coffee-Economic-Viability-Study-Report.pdf>
- Daudu, A. K., Abdoulaye, T., Bamba, Z., Shuaib, S. B., & Awotide, B. A. (2023). Heliyon Does youth participation in the farming program impact farm productivity and household welfare ? Evidence from Nigeria. *Heliyon*, 9(4), e15313. <https://doi.org/10.1016/j.heliyon.2023.e15313>

- Diro, S., Erko, B., & Yami, M. (2019). *Cost of Production of Coffee in Jimma Zone , Southwest Ethiopia*. 29(3), 13–28.
- Economics, A., & Library, D. (n.d.). *This document is discoverable and free to researchers across the globe due to the work of AgEcon Search . Help ensure our sustainability . Impact of integrated pest management technologies on farm revenues of rural households : The case of smallholder Arabica coffee farmers*.
- Lordemann, J. A., Mora-garcía, C., & Mulder, N. (2021). The main drivers of arabica coffee prices in Latin America Thank you for your interest in this ECLAC publication. *Project Documents, Economic Commission for Latin America and the Caribbean*.
- Maulidia, N. (2022). *The role of entomopathogenic fungi in controlling the coffee berry borer (Hypothenemus hampei Ferrari) at various altitudes of Arabica coffee plantations*.
- Minai, J. ., Nyairo, N., & Mbataru, P. (2014). Analysis of Socio-Economic Factors Affecting the Coffee Yields of Smallholder Farmers in Kirinyaga County, Kenya. *Journal of Agricultural and Crop Reseach*, 2(9), 228–235.
- Negre, L. (2023). *The World of Coffee : 21 st Century solutions for a commodity facing climate change risks The Economic and Social Backdrop of the Coffee Sector*. 26.
- Olana Jawo, T., Teutscherová, N., Negash, M., Sahle, K., & Lojka, B. (2023). Smallholder coffee-based farmers' perception and their adaptation strategies of climate change and variability in South-Eastern Ethiopia. *International Journal of Sustainable Development and World Ecology*, 30(5), 533–547.
<https://doi.org/10.1080/13504509.2023.2167241>
- Organisation, S. M. (2012). *Agro-dealers in Zimbabwe : Scaling input provision as key for successful small farmer engagement*. 1–7.
- Prasetyo, E., Listiyaningsih, D., Setiadi, A., Mukson, M., Roessali, W., & Ekowati, T. (2022). Factors determining income and product type of Robusta coffee farming in Central Java, Indonesia. *International Social Science Journal*, 737–748.
<https://doi.org/10.1111/issj.12362>

- Puspita sari, N., Iman Santoso, T., & Mawardi, S. (2013). Distribution of Soil Fertility of Smallholding Arabica Coffee Farms at Ijen-Raung Highland Areas Based on Altitude and Shade Trees. *Pelita Perkebunan (a Coffee and Cocoa Research Journal)*, 29(2). <https://doi.org/10.22302/iccri.jur.pelitaperkebunan.v29i2.57>
- Rahmanta, Purba, S., & Supriana, T. (2019). Factors affecting the production of arabica coffee of smallholder plantations in Dairi District. *IOP Conference Series: Earth and Environmental Science*, 260(1). <https://doi.org/10.1088/1755-1315/260/1/012007>
- Rica, C., & Salvador, E. (2019). *Initial growth of coffee (Coffea arabica L . var) castillo in the coffee zone of Nariño Crecimiento inicial del café (Coffea arabica L . var) castillo en la zona cafetera de Nariño According to the International Coffee Organization (Organización Internacional del above other coffee producing countries , observed that , in recent years , the National Federation of Coffee Growers of Colombia has directed its efforts towards creating et al , (2011) and the National Federation of Coffee Growers of Colombia (Federación Nacional de Cafeteros de Colombia , 2017) , The Department of Nariño is close to the equator , a factor that explains the presence.* 36(December), 124–137.
- Rutherford, M. A., Bioscience, C., Centre, U. K., Lane, B., & Tw, S. (2006). *e - X tra * Fusarium -Induced Diseases of Tropical Perennial Crops Current Knowledge of Coffee Wilt Disease , a Major Constraint to Coffee Production in Africa.* 96(6), 663–666.
- Saragih, J. R. (2019). *The Role of Arabica Coffee in Local Economic Development in Highland of Simalungun District , North Sumatera , Indonesia.* August. <https://doi.org/10.2991/iclick-18.2019.53>
- Torres, J., Valera, D. L., Belmonte, L. J., & Herrero-Sánchez, C. (2016). Economic and social sustainability through organic agriculture: Study of the restructuring of the citrus sector in the “Bajo Andarax” District (Spain). *Sustainability (Switzerland)*, 8(9), 1–14. <https://doi.org/10.3390/su8090918>
- UCDA. (2019). Uganda Coffee profile. *International Coffee Council, Icc 124-8 7.*

Uganda Coffee Development Authority. (2014). *Uganda Training Materials for Coffee Production*. 61.

Wang, N., Jassogne, L., van Asten, P. J. A., Mukasa, D., Wanyama, I., Kagezi, G., & Giller, K. E. (2015). Evaluating coffee yield gaps and important biotic, abiotic, and management factors limiting coffee production in Uganda. *European Journal of Agronomy*, 63. <https://doi.org/10.1016/j.eja.2014.11.003>

Widiastuti, Y. (2021). The Influence of Economic and Entrepreneurial Environmental Factors on Coffee Farming Performance in Banyuwangi Regency. *Journal of Aquaculture Science*, 6(11S). <https://doi.org/10.31093/joas.v6i1is.165>

Yusiska, S., Kasimin, S., & Sugianto, S. (2019). Analysis of Factors Affecting the Production and Price of Coffee Arabica to Competitiveness in Central Aceh District. *International Journal of Multicultural and Multireligious Understanding*, 6(4). <https://doi.org/10.18415/ijmmu.v6i4.1006>

Zhang, X., Peck, L. D., Flood, J., Ryan, M. J., & Barraclough, T. G. (2023). Temperature contributes to host specialization of coffee wilt disease (*Fusarium xylarioides*) on arabica and robusta coffee crops. *Scientific Reports*, 13(1), 1–12. <https://doi.org/10.1038/s41598-023-36474-w>

APPENDICES.

APPEDIX 1: QUESTIONIER.



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I am a student of Busitema University Arapai Compass, faculty of agriculture and animal science conducting research on determinates which affects productivity of Arabica coffee among small scale farmers of Namabya Sub County. I request you to kindly respond to this questionnaire faithfully and truthfully. I promise that information given will be handled as highly confidential and used for only research purposes.

Instructions to respondent.