

# Farm-level Crop Price as a Factor for Increased Maize Production in Ludewa District, Tanzania: Estimation of Koyck Lag Model

Mirau Mbise<sup>1</sup>, Sospeter Jibunge Charles<sup>1</sup>

<sup>1</sup>Department of Geography and Economics, Mkwawa University College of Education, University of Dar es Salaam, P. O. Box 2513, Iringa, Tanzania

\*Corresponding author: Ephrem Guchi; Email: [jibunges@gmail.com](mailto:jibunges@gmail.com)

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## Abstract

Farm-level crop price is an important predictor of production increase, yet, little has been done about how food crop production is responsive to the expected price. Hence, this paper uses primary data to analyze the contribution of expected farm-level prices to the current production of crops. The primary data was collected from 427 sampled household heads through the interview conducted using an interview schedule. The Koyck lag model which is a simple expectation model was employed to estimate the relationship between current crop production and expected price. The main findings indicated that price is significant driver ( $\rho = 0.069$ ) for increased crop production. From the results, it is concluded that the output market aspect (farm-level price) is equally important for increased crop production. The study findings have important policy implications that output marketing barriers that increase the transaction costs cause low farm-level prices hence low crop production. Therefore, to increase maize production there should be a balance between costs of inputs and output price.

Keywords: Farm-level price, Koyck lag model, marketing participation, Transaction costs

## 1.0 INTRODUCTION

Most of the African countries' economic growth depends on the agricultural sector. According to Tomšík et al. (2015), agriculture dominates the Gross Domestic Products (GDP) and employment in Sub-Saharan countries. Likewise, Chongela (2015) found that subsectors of agriculture in Tanzania namely crops, livestock, and fisheries contribute 18.93%, 4.70%, and 2.25% to the national economy respectively making a total contribution of 25.88%. Notably, Statista (2021) showed that the agricultural sector is the second-largest contributor to economic growth after the services sector for the years between 2010 and 2020 (Table 1). As agriculture is an equally important sector for economic growth, its development and transformation are inevitable. In this regard, the Tanzania Five Year Development Plan I which was launched in 2011 insists on agricultural sector modernization, commercialization, and productivity enhancement to reduce poverty and improve the economic growth of the country (United Republic of Tanzania – URT, 2015).

Table 1: Share of economic sectors in the GDP from 2010 to 2020 in Tanzania

Sector/Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture (%)	25.58	24.98	26.55	26.79	25.8	26.75	27.44	28.74	27.87	26.55	26.74
Industry (%)	23.56	26.38	25.4	25.45	25.14	24.79	24.86	25.1	27.01	28.62	28.67
Services (%)	43.32	41.41	40.61	40.27	41.3	40.43	37.45	37.92	37.24	36.77	36.25

Source: Statista (2021)

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