ANALYZING FACTORS INFLUENCING MOLDOVAN AGRICULTURAL YIELDS

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DOI: https://doi.org/10.36004/nier.cecg.I.2023.17.14

Moldova, an Eastern European country, heavily relies on agriculture, with crop yields serving as a crucial economic performance indicator. This article conducts a comprehensive analysis of Moldova’s agricultural landscape over a 20-year period. The primary objective of this research is to identify and analyze the key determinants influencing crop yields, including pesticide usage, credit accessibility for agriculture, price indices, and climatic variables such as precipitation and temperature.

Methodologically, our study first centers on data collection from diverse reputable sources, including Moldovan government reports, agricultural statistics databases, and meteorological records, to establish a comprehensive and reliable dataset. We harmonized various datasets, performed data consistency checks, and applied logarithmic transformations to address non-linearity and heteroscedasticity. Using statistical software R, we conducted multiple linear regression analyses. To ascertain the reliability of our model, we ran diagnostic tests including assessing the goodness of fit through metrics like R-squared and adjusted R-squared. Additionally, we examined critical assumptions such as the normality of residuals and homoscedasticity. Notably, effective pest management practices are found to have a positive impact on crop yields, underlining their significance in enhancing agricultural productivity. Surprisingly, fluctuations in prices and credit accessibility do not wield significant influence over crop yields. Furthermore, the research underscores the importance of optimal temperature conditions, with a strong positive correlation observed between crop yields and mean monthly temperature averages. The research emphasizes the need for further exploration of complex yield-influencing mechanisms in Moldova’s agricultural sector, aiding informed decision-making and strategic planning for sustainability.

Keywords: Moldovan agriculture, regression analysis, factors influencing yields
JEL classification: C51, C52, Q12
UDC: 338.432(478)