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Human capital expenditure, employment and GDP in Ukraine's agriculture: a comparison across sectors and EU countries

Purpose. The purpose of the article is to identify and assess the relationship between human capital expenditure in Ukraine's agricultural sector and selected macroeconomic indicators, and to compare the results across economic sectors and EU countries.

Methodology / approach. The paper provides a comparative analysis of Ukraine and the European Union countries by the indicators of employment, value added by economic sectors, GDP volumes and expenditure on human capital formation. The study uses World Bank indicators for the period from 1991 to 2023. To determine the relationship between the indicators analysed, the study applies Pearson's correlation coefficient, and to test the time series for stationarity, it uses the Augmented Dickey-Fuller test and correlograms. The stationarity of the time series was confirmed only for the second difference of logarithms. The study applied the Granger Causality Test to determine the causality between the indicators in the second difference of logarithms.

Results. The analysis showed that the share of employment and value added in agriculture have the lowest values in almost all countries in the sample, while the same indicators are gradually declining in industry and steadily growing in the services. At the same time, labour productivity in the agricultural sector is significantly lower than in industry and services. The article identifies country differences in the relationship between the human capital components and GDP and value added by economic sectors. The calculations demonstrated that in Ukraine there is a moderate relationship between indicators of human capital development with indicators of GDP and value added in services, a moderate negative relationship with the IVA indicator, and no relationship with AFFva.

Originality / scientific novelty. The research has established that in Ukraine, employment in agriculture affects expenditures on human capital components in the short run, while expenditures on human capital components affect employment in services in the medium run. The components of human capital development affect the value added in agriculture in the short run, while the impact decreases in the medium run. When lags increase, the number of both two-way and one-way causal relationships decreases. The novelty of the study lies in the comparative analysis of the relationships between human capital development indicators in Ukraine's agricultural sector and selected macroeconomic indicators in sectoral and country aspects.

Practical value / implications. The proposed directions for the development of human capital in Ukraine's agricultural sector can be used in the development of state programmes to support the agricultural sector of the economy.

Key words: agriculture, human capital, labour productivity, Ukraine's integration into the EU.