

Nazarova G. Determinants of human potential development in the conditions of structural transformation of industry / G. Nazarova, A. Demianenko, N. Nazarov et al // *Innovative technologies and scientific solutions for industries*. – 2026. – № 2 (36). – Pp. 200-213.

The structural transformation of industry in Europe is accompanied by profound changes in the structure of employment. In these conditions, human development determines the ability of the economy to adapt, while demographic and migration processes form the underlying preconditions for industrial change. The research aims to determine the relationship between the HDI and a set of demographic and migration indicators. Their impact on key components of the HDI remain relevant in the face of structural transformation of industry. The following research methods were used in the article: descriptive statistics; statistical methods of determining the normality of data; correlation analysis was performed to determine the strength and direction of correlation; panel regression modeling allowed to identify significant results in the quantitative assessment of the influence of factors. The results of research obtained reveal statistically relationships between demographic and migration indicators and each dimension of the HDI. The correlation analysis identified the direction, strength, and closeness of associations between key variables. The results revealed a moderate degree of positive correlation between the Age dependency ratio and two dimensions of human development: Long and healthy life and Decent standard of living. The analysis showed a strong negative impact of the Crude Death Rate on almost all HDI dimensions. The Net migration rate has a significant positive impact on two areas of human development: Knowledge and Decent standard of living, as well as the HDI as a whole. Net migration rate and crude rate of immigration proved to be of particular interest for future research as compensating factors, the increase of which can accelerate HDI progress. The results of the correlation analysis showed the influence of other indicators on the HDI dimensions, but such influences were weak, nonlinear, or context-dependent. The regression analysis conducted for each dimension of human development provides practical insights of high policy relevance. The constructed models offer an empirical basis for identifying key influencing factors and enable forecasting, as well as the development of evidence-based strategies and targeted measures aimed at strengthening the resilience of human capital and human development under conditions of structural transformation of industry.

Keywords: *human development; human development index; human capital; demographic dynamics; migration risks; structural transformation; industry.*