

CHANGES IN THE GENDER STRUCTURE OF EMPLOYMENT IN UKRAINE

Russia's full-scale military aggression against Ukraine, which began in 2022, has caused a significant imbalance in the gender structure of employment. Solving this problem requires the implementation of innovative economic recovery projects, including digitalization, green energy development, technology transfer, the creation of creative clusters (territorial zones), and industrial revival.

However, without the application of a systematic gender-sensitive approach to employment structure analysis, such innovative projects risk exacerbating both horizontal and vertical occupational segregation, as well as significantly widening the gender pay gap between women and men.

The aim of the research is to evaluate the gender structure of employment in innovative economic recovery projects in Ukraine during 2022–2025.

The object of the research comprises employed women and men, disaggregated by gender, participating in innovative projects (Ukraine Facility, RDNA, and others).

The subject of the research is the gender structure and structural shifts in employment levels within innovative recovery projects.

Research methods include statistical methods for analyzing structure and dynamics, correlation analysis, and the index method.

Research Results. Over the period under review, the employment rate of women decreased from 49.3% to 48.7%, while the economic activity of men remained significantly higher — at the level of 62%–68%. Among registered unemployed persons, the share of women ranged from 72.5% to 80%. The gender pay gap, as confirmed by the analysis, has widened, with women earning on average 41.4% less than men. Women's unpaid work has increased to 56 hours per week, primarily involving childcare, care for the wounded, and internally displaced persons (IDPs). In informal employment, the share of women rose from 16.2% to 18.8%.

The mobilization and emigration of men have pushed women into traditionally male-dominated sectors of the economy. Women registered 59–61% of new individual entrepreneurs (FOPs) in innovative fields.

Regarding changes in the gender structure of employment in innovative economic recovery projects, the following trends were observed:

- In the green energy and industrial recovery sector, a positive trend is observed in administrative and managerial positions, where women account for up to 46% of those employed;
- In renewable energy, in technical positions, women represent only 18% of employees.

In this sector of the economy, women make up 28–32% of the employed, compared to 24% in the traditional energy sector. The gender pay gap in the energy sector stands at approximately 19% in favor of men.

A positive trend in the increasing share of women is observed in IT innovations and digitalization — from 7% to 24–26%. The growth of women's entrepreneurship in IT was facilitated by retraining programs, which trained more than 5,000 women. Currently, women account for over 60% of new individual entrepreneurs (FOPs) in the digital sectors of the economy. The gender pay gap in this sector stands at 18–25%, which is significantly lower than in other sectors of the economy.

In the creative economy and clusters such as cultural industries, design, and innovative services, women predominate, making up 55–60% of those employed. However, it should be noted that these are mainly low-paid positions. In 180 innovative projects for the economic recovery of Ukraine, the share of women increased by 8–12 percentage points compared to the pre-war period. This growth is largely due to the introduction of mandatory gender quotas.

The analysis of wages in innovative projects shows a significantly smaller gender pay gap — 18–25% compared to the national average of 41.4%. However, women hold only 36–40% of managerial

positions, with preference still given to men. It has been proven that a higher level of gender balance correlates with the efficiency of innovative projects, resulting in a 12–15% increase in labor productivity.

The positive factors encouraging women's participation in innovative economic recovery projects in Ukraine include:

- the opening of vacancies due to the mobilization of men;
- state strategies for overcoming the gender gap; [1]
- retraining programs for women and grant support. [2]

The results of the comparative index analysis indicate that Ukraine lags behind EU countries in terms of segregation (65.6 points versus 73.8), but demonstrates higher potential due to the high educational level of Ukrainian women.

Conclusions. The implementation of innovative projects for the economic recovery of Ukraine contributes to increasing women's employment (an 8–12 percentage point rise in the share of women), reducing the gender pay gap between men and women, and boosting women's entrepreneurship activity.

At the same time, significant gender disparities persist in managerial and technical positions across many sectors of the economy.

It should be emphasized that applying a gender-sensitive approach to the statistical analysis of changes in employment structure within Ukraine's innovative economic recovery projects enables the development of effective mechanisms to improve the employment rate and labor productivity of Ukrainian women, especially under the conditions of full-scale war.

References

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CLASSICAL AND QUANTUM RECURRENCE QUANTIFICATION MEASURES FOR S&P 500 MARKET DYNAMICS

Financial markets are paradigmatic complex systems whose dynamics combine stochastic fluctuations with episodes of collective, deterministic-like behaviour, particularly around crises. Recurrence plots (RP) and recurrence quantification analysis (RQA), introduced by Eckmann, Kamphorst, and Ruelle [1] and later developed into a quantitative toolbox by Webber and Zbilut [2] and Marwan, Romano, Thiel, and Kurths [3], have become a standard means of revealing hidden