A. Koldunova
А.А. Колдунова
ВГТУ (Витебск)
Научный руководитель Е.Н. Домбровская

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE UNEMPLOYMENT RATE IN THE REPUBLIC OF BELARUS

Влияние искусственного интеллекта на уровень безработицы в Республике Беларусь

In the Republic of Belarus, artificial intelligence (AI) is used in various sectors of the economy for data processing, optimization of production processes, cost reduction, predictive maintenance to anticipate potential failures, and minimizing errors in manufacturing. Despite the advantages of automation, it is important to consider the risks associated with the implementation of AI, specifically the threat of increased unemployment. The aim of this study is to assess the impact of AI on the unemployment rate. A correlation-regression model (formula 1) was selected for this purpose. Variable forecasting was carried out using the extrapolation method. In the first stage, population size (P1), employed population size (P2), average monthly wage level (W), gross domestic product (GDP), and inflation rate (INF) were chosen as key influencing factors.

$$Ut = \alpha + \beta1 \cdot P1 + \beta2 \cdot P2 + \beta3 \cdot W + \beta4 \cdot \mathrm{GDP} + \beta5 \cdot \mathrm{INF}, \quad (1)$$

where α – the intercept; β1, β2, β3, β4, β5 – regression coefficients.

In the second stage, the automation coefficient (A) was included in the model.

$$Ut = \alpha + \beta1 \cdot P1 + \beta2 \cdot P2 + \beta3 \cdot W + \beta4 \cdot \mathrm{GDP} + \beta5 \cdot \mathrm{INF} + \beta6 \cdot A. \quad (2)$$

There is no statistics regarding on the results of AI implementation in enterprises in the Republic of Belarus, so for our research, we used data from the Russian Federation, adjusting their values by 1–2 % to increase reliability. The results of the conducted research are presented in the table.

Forecasting the unemployment rate in the Republic of Belarus as a result of AI implementation in enterprises

Year	Unemployment rate, %	Without taking into account the automation coefficient		Taking into account the automation coefficient	
		Value, %	Deviation, p. p.	Value, %	Deviation, p. p.
1	2	3	4	5	6
2017	5,6	5,32	0,28	5,6	0
2018	4,8	5,06	–0,26	4,8	0
2019	4,2	4,36	–0,16	4,2	0

Ending

1	2	3	4	5	6
2020	4,0	3,95	0,05	4,0	0
2021	3,9	3,76	0,14	3,9	0
2022	3,6	3,68	–0,08	3,6	0
2023	3,5	3,46	0,04	3,5	0
2024	–	2,28	–	3,9	–
2025	–	2,30	–	3,1	–

According to the data in the table, the unemployment forecast without taking into account the automation coefficient implies a more optimistic scenario. However, the forecast taking into account the impact of AI is more accurate, as it has less deviation from the actual data. Considering current trends, several scenarios of the labor market situation in the Republic of Belarus under the influence of AI implementation in enterprises can be identified:

1. *Optimistic Scenario*. The active growth of economic sectors and the adaptation of the workforce to new requirements will lead to the creation of new jobs and a reduction in unemployment levels.

2. *Pessimistic Scenario*. If the pace of automation exceeds the labor market's ability to adapt, it could lead to an increase in unemployment, especially among low-skilled workers.

3. *Balanced Development Scenario*. The implementation of retraining programs and support for workers, including at the state level, will help mitigate the negative impact of automation on the unemployment rate.

M. Kolesinskiy
М.В. Колесинский
АУпПРБ (Минск)
Научный руководитель В.В. Рогов

DLP SYSTEMS: PROTECTING CONFIDENTIAL INFORMATION IN THE DIGITAL AGE

DLP-системы: защита конфиденциальной информации в цифровую эпоху

Data breaches represent one of the main threats in the modern IT world. Personal data, confidential information, trade secrets, and even more classified information periodically appear on the Darknet and other dubious resources.

However, DLP systems have existed for several decades. DLP stands for Data Leak Prevention, and sometimes it is deciphered as Data Loss Prevention. However, data loss