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Every fifth worker in Poland holds a job most exposed to the impact of AI

The use of artificial intelligence (AI) will have a significant impact on the labour market. Some tasks will be simplified, while others will disappear entirely. Among the 20 occupational groups most vulnerable to the impact of AI are specialist positions, including finance professionals, lawyers, certain government officials, administrative specialists, and programmers. These jobs employ 3.68 million Poles, of whom 2.16 million are women, and 1.53 million are men. Poles are divided in their views on the effects of AI on the labour market: 25.8% believe that AI will positively impact job numbers, while 33.4% think it will have a negative effect. These conclusions come from a report by the Polish Economic Institute (PIE) titled "AI on the Polish labour market."

Specialist jobs are the most exposed to AI

In its study, PIE analysed which jobs are most exposed to artificial intelligence (AI Occupational Exposure, AIOE). This includes jobs that require higher qualifications, such as finance professionals, lawyers, and programmers. This category also includes mathematicians, some government officials, secretaries, as well as university lecturers and parts of the managerial staff in companies. Overall, about 3.68 million people are currently employed in the 20 occupations most exposed to AI. For comparison, the number of workers in the 20 least-exposed occupations is about 1.66 million, which is 10% of those employed—more than two times fewer than in the group most exposed to AI.

Table 3. Jobs that are most exposed to AI

Rank	AIOE			AIOE LLM			AIOE GenIm		
	Group of occupations	Number of employees in Poland (K)	Score	Group of occupations	Number of employees in Poland (K)	Score	Group of occupations	Number of employees in Poland (K)	Score
1	financial specialists	293.7	1.45	legal specialists	137.2	1.46	architects, surveyors and planners	146.2	1.86
2	mathematicians, actuaries and statisticians	9.7*	1.42	academics	101.4	1.41	computer systems analysts and programmers	359.3	1.64
3	legal specialists	137.2	1.34	administration and management specialists	467.2	1.29	engineers (excluding electrical engineering)	256.9	1.64
4	public servants for supervision	206.1	1.32	sales, marketing and public relations specialists	294.7	1.28	mathematicians, actuaries and statisticians	9.7*	1.51
5	administration and management specialists	467.2	1.25	specialists in social and religious fields	117.5	1.26	database and network specialists	55.5	1.47
6	computer systems analysts and programmers	359.3	1.22	secretaries (general)	51.6	1.25	electrotechnology engineers	75.7	1.40
7	secretaries (general)	51.6	1.19	teachers of lower and upper secondary schools (except vocational education teachers)	109.4	1.25	financial specialists	293.7	1.38
8	sales, marketing and development managers	98.6	1.18	writers, journalists and philologists	66.5	1.25	information and communications technology managers	26.1	1.28
9	financial and statistical staff	66.3	1.14	financial specialists	293.7	1.24	sales, marketing and development managers	98.6	1.26

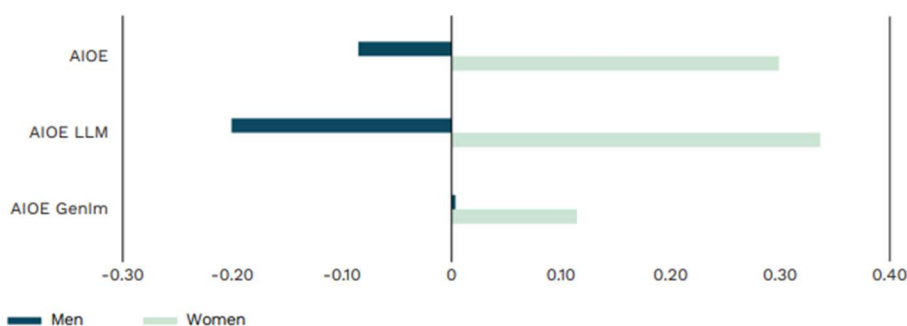
"Artificial intelligence has the potential to significantly transform the Polish labour market—by simplifying or eliminating certain tasks, increasing the productivity of some employees, and putting pressure on the need for new skills. We must consider these processes in a broader context, such as demographic trends. By 2035, the workforce will decrease by as much as 12.5% compared to today. Implementing automation tools can be an essential component of efforts to increase productivity and maintain the current potential of the Polish economy", notes Ignacy Świącicki, head of the digital economy team at PIE.

Women are more exposed to AI's impact on the labour market than men

Overall, women in Poland are more susceptible to disruptions caused by AI in the workplace than men. Among the 121 occupational groups analysed in Poland, women more often work in those most exposed to AI. In the 20 occupational groups most vulnerable to changes from AI, 28% of all working women in Poland are employed, compared to 17% of men.

Despite the overall higher number of men employed, women lead numerically in the 20 jobs most exposed to AI, with 2.16 million compared to 1.53 million. This is likely because women are less involved in manual labour and are often better educated than men, working in roles that are more susceptible to AI usage.

Figure 6. Exposure to AI by gender, based on occupational exposure of each group (weighted average of AI exposure, taking into account the number of employed women and men in a given occupation)



Source: Prepared by PEI, using BAEL data.

AI will have the greatest impact on the financial and insurance sectors

The analysis of AI exposure indicators across various economic sectors shows significant differences in the adaptation and utilization of these technologies, consistent with findings from occupational analyses. The agriculture, forestry, hunting, and fishing sectors exhibit the lowest AI exposure, suggesting they are least affected by these technologies. Similarly, low exposure levels can be seen in the food and accommodation services and construction sectors.

In contrast, the financial and insurance sectors exhibit the highest AI exposure, indicating the potential for intensive use of these technologies in process automation, data analysis, and information management. High exposure is also observed in professional, technical, and education sectors. Notably, the IT sector

ranks only fourth overall, though it rises to third place when considering exposure to language models. Other sectors, such as wholesale and retail trade and activities related to culture, entertainment, and recreation, show significant differences in AI exposure depending on whether general AI exposure (AIOE) or exposure specifically to large language models (LLM) or image generation models is considered.

"At this stage of implementing AI solutions in the economy, it remains unclear whether AI will complement employee skills or primarily lead to task automation and reduced employment in certain jobs. Barriers to broader AI implementation include relatively low labour costs in Poland compared to European standards, which do not incentivize management to pursue automation. Additionally, the need for advanced AI to process sensitive data on external servers raises concerns about potential leaks and may conflict with corporate compliance policies," says Jakub Witczak, an analyst from the digital economy team.

The Polish Economic Institute is a public economic think tank dating back to 1928. Its research primarily spans macroeconomics, energy and climate, foreign trade, economic foresight, the digital economy and behavioural economics. The Institute provides reports, analyses, and recommendations for key areas of the economy and social life in Poland, taking into account the international situation.

Media contact:

Ewa Balicka-Sawiak

Press Officer

M: +48 727 427 918

E: ewa.balicka@pie.net.pl