

Artificial Intelligence in the Context of the Labour Market

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Abstract

The presented research results show that the impact of artificial intelligence (AI) on the labour market is multi-dimensional: on the one hand, it automates and displaces some professions (lawyers, analysts, financial specialists), on the other - it creates new positions in the space of technology development, robotics, data analysis. This phenomenon may lead to increased social and property antagonisms in the future. Important challenges concern the digital education of employees and the need to introduce appropriate ethical and legal regulations. Own research conducted in the Piła district confirms that artificial intelligence is most often perceived as a tool for a personal assistant, as well as in the form of document analysis and offer personalization. At the same time, significant gaps in the knowledge of AI functioning mechanisms among employees were demonstrated - education and training in this area could accelerate the teaching process. Among the organizational and ethical problems, the most frequently indicated were the security of using AI, privacy protection, and transparency.

Keywords: Artificial Intelligence, Job Market, Automation, Ethics, Legal Regulations

Introduction

The subject of the presented research is the analysis of the impact of artificial intelligence on the labour market, taking into account its role in professional processes and the challenges and benefits related to its development. In an era of dynamic growth in interest in digital technologies, AI is becoming the most important factor in transforming the structure of employment and how professional duties are performed. This issue is of particular importance in the environment of employees' adaptation to the new labour market.

The research goal of this article is to determine how AI shapes the labour market situation, what results from its use for employment, and what challenges will require actions in the field of education, as well as ethical and legal regulations. It is imperative to identify the nature and type of positions that will be subject to reduction or development, as well as to identify the level of awareness of employees or managers about the mechanisms of operation of AI tools.

The need to understand the spectrum of effects brought by the development of artificial intelligence has become the basis for the importance of the presented research. The relevant literature often emphasizes that artificial intelligence can cause fundamental social challenges (increased unemployment, threats to security and privacy, or income inequalities) and

contribute to increased innovation and efficiency of enterprises. The presented analysis is part of a broad research process on the impact of elements of digitalization on the labour market. It is emphasized that there is a need to create appropriate regulations and actions to minimize the adverse effects and maximize the positive effects of AI development.

1. Artificial intelligence

Artificial intelligence (AI) is one of the most rapidly evolving fields in contemporary science and technology. The earliest reference to the concept of machine thinking and learning is attributed to British mathematician Alan Turing, who introduced the idea in 1936 [1]. This author is also well known for demonstrating what humanity can expect from a computer [2]. Artificial intelligence has recently transformed from theoretical considerations into practical applications, from voice assistants to extensive data analysis systems. The development of AI is driven by advances in the field of algorithms, the increase in the computing power of computers, and the availability of huge data sets. As a result, artificial intelligence is observed in many industries, such as finance, transport, entertainment, medicine, and engineering, which increases the efficiency of the processes and opens up new opportunities for innovation. With the development of AI, significant ethical and social challenges arise. There are also questions about privacy, security, and their impact on the labour market.

1.1. The history of the emergence of artificial intelligence (AI) and its types

The breakthrough in artificial intelligence occurred in the 1980s, thanks to progress in machine learning algorithms. Artificial intelligence was understood as a system that would perform, at least some, of the functions of the human mind, and would also be free from errors or memory defects. Intelligence is a property of the mind that encompasses various skills, including communication, problem-solving, adaptability, and learning. Among these, the ability to reason is considered the most important [3].

Modern AI systems can only be intelligent in a limited area. The use of AI systems in various social spheres enhances work and provides significant benefits; however, certain legal risks are also evident [4]. Early AI applications were focused on games and simple solutions. *The Logic Program Theorist* was written in 1956, and its task was to solve mathematical equations. In the same year, the first expert system, the Dendral Project, was created to imitate human knowledge and analytical skills. Ten years later, J. Weizenbaum developed a program that simulated a psychologist conducting a dialogue with a patient [5]. T. Zalewski defined artificial intelligence as a system that enables the performance of tasks requiring a learning process and the ability to account for new circumstances when solving various problems [6]. According to this author, such a system can operate autonomously and interact with the environment. The very concept of artificial intelligence arises in various debates concerning both its risks and benefits [7].

Despite the existence of many definitions of artificial intelligence, the one proposed by the European Commission in 2018 appears to be the most appropriate. According to this definition, AI systems are a type of computer software that operate in the physical or digital dimension by perceiving their environment through the interpretation of collected data,

reasoning, and data processing [8]. As a result, it is about making decisions that are best for a given activity or event, which are taken to achieve a programmed or overt goal. These systems can use symbolic rules or learn a numerical model and adapt their behaviour (overwriting the software), analyzing the impact of their previous actions on the environment. Among the different types of AI, we can mention:

- **Narrow (weak) artificial intelligence:** This type of artificial intelligence can be referred to as the ability of a computer system to perform narrowly defined tasks, in a better way than if a human were to perform them. That is the highest level of AI development that humanity has achieved; these will be, for example, autonomous vehicles or digital assistants. Today's artificial intelligence only coordinates a few narrow processes and, at the same time, makes decisions within a programmed structure (no consciousness or emotions).
- **Strong:** systems capable of partially understanding various tasks on a basis comparable to human intelligence (self-programming, "learning"). This type of AI can understand the environment and adapt to it,
- **Mental:** Emulating human thinking and understanding in a more advanced way. That includes the ability to self-program new events, process and understand natural language, and context, and even have a consciousness that results from overwriting an existing program of action.
- **Augmentative (assistive):** an approach that combines the power of human intelligence with the capabilities of artificial intelligence to enhance or facilitate human actions – synergy between the abilities of machine and human thinking,
- **safe:** developing and implementing measures to reduce the risks associated with the development of artificial intelligence, i.e., preventing undesirable effects or maintaining ethical values,
- **Inverted:** modelling human thought processes to better understand how machines interact with human expectations,
- **Representational:** creating models that represent knowledge that enables adequate understanding of information,
- **predictive:** predicting results based on collected data (weather forecast, election results, stock prices),
- **Artificial superintelligence** is a system that would be able to outperform humans in many areas, such as scientific creativity or social skills.

As you can see, an important moment in the history of AI was the progress in machine learning algorithms, which enabled the implementation of tasks attributed to the human mind, such as problem-solving, communication, and learning. However, modern AI systems operate mainly in a narrow scope, providing benefits in various fields.

1.2. Benefits and Concerns About AI Development

The spread of AI systems and their continuous development bring benefits but also generate various problems. The technological revolution associated with artificial intelligence has altered the rules of social life, leading to significant changes in the normative systems that

have traditionally governed these rules [9]. According to L. Banh and G. Strobel, artificial intelligence offers new perspectives for expanding and automating various workplace tasks. Commercially available tools can provide tangible benefits to specific professional groups—for example, by reducing task completion time in the IT industry and enhancing employee efficiency in customer service roles [10]. R. Kurzweil predicts that artificial intelligence will catalyze progress in numerous fields, including medicine, economics, and environmental protection [11]. The author notes that artificial intelligence will make it possible to cure almost any disease, understand most of the processes occurring on Earth and in space, and improve the quality of life of most people.

The most significant benefits associated with the development of artificial intelligence include:

- Increasing production efficiency—for example, through the automation of factory processes, which enhances productivity and reduces production costs [12].
- Improvements in medical diagnostics—for example, AI algorithms can analyze medical test results with significantly greater precision than many physicians [13].
- Decision-making support—for example, analytical systems based on artificial intelligence assist in forecasting market trends [14].

The most common concerns include:

- Job losses—for example, automation in the transport sector may lead to a reduction in the number of employed staff and drivers [15].
- Privacy threats—for example, AI-based monitoring systems may violate citizens' privacy by collecting various types of information without their consent [16].
- Ethical dilemmas in decision-making—for example, AI algorithms may make decisions in critical situations (such as those involving autonomous vehicles), which can lead to moral and ethical dilemmas [17].

An important element of the process related to AI implementation is communicating goals, principles, and strategies to employees. A conscious employee will see the benefits of using AI and be aware of the threats. Important issues in the area of security in the implementation of artificial intelligence are [3]:

- Confidentiality of information (solutions that ensure privacy protection should be used),
- Testing (all AI solutions should be tested by specialists who deal with cybersecurity),
- Categories of information (special attention should be paid to the types of data that will be entered into language models, and precautions should be taken, especially when working with classified data (personal data, strategic information, sensitive data),
- AI threat modelling (all production solutions should first be modelled for potential threats to a given AI solution),
- AI environment security (AI implementation should take place in a secure environment: network security, monitoring of activities, and regular updates of goals),

- Incident response plan (create an appropriate action plan in the event of a security breach),
- Eliminating security gaps,
- Ongoing supplementation of legal knowledge related to security,
- Validation of the correctness of the output data.

Given the rapid development of AI, it will be important to balance the risks and benefits that this type of technology brings. As AI becomes an increasingly integral part of everyday life, it seems necessary for societies to make informed decisions that consider both the potential and the risks associated with implementing new AI technologies. Avoiding the pitfalls of privacy protection, automation, and ethical dilemmas will require appropriate legal regulations and the involvement of decision-makers, employees, and scientists. A joint search for solutions that minimize risk while maximizing benefits can make AI a tool with enormous potential and a responsible partner in creating a better future. AI management methods have the potential to become the most important element of innovation, sustainable development, and improving the quality of life.

1.3. Conditions for AI Development within an Ethical and Legal Framework

The European Economic and Social Committee has addressed the conditions for the development of artificial intelligence within an ethical and legal framework at the EU level [18]. The Committee did not doubt that artificial intelligence would affect the level of employment, the type and nature of jobs, and at the same time the social security systems of all EU Member States. Contemporary technological changes are often referred to as the "second age of the machine" [19]. In the contemporary development period of artificial intelligence, digital technologies are quickly replacing people's mental and cognitive capabilities. AI will therefore take over both physical work and medium or highly qualified white-collar workers. This technology can affect all economic and social sectors of modern countries. These potential changes lag behind mentality, law, ethics, organizations, and institutions. Certain human skills will often be valued more than ever before. People should understand these phenomena, consider their consequences, and develop strategies to address the challenges, especially in the area of high unemployment.

In the literature on labour law, the question often arises: "Who supervises whom during work—employees or automated devices?" [20]. Today's electronic technologies are not able to independently launch any employee controls unauthorized by the employer, so there is no basis for asking whether machines can take over the supervision of employees for their benefit. The EESC states directly that technology does not take over such control anywhere. However, it is not certain whether, in the uncontrolled development process, computer scientists developing the capabilities of automatic machines will expand and deepen the capabilities of intelligent machine operation. Ethical and legal supervision is critical in augmented intelligence because it goes beyond the capabilities of cause-and-effect thinking of modern man. Supervision of AI must therefore take on a uniform legal and organizational form. According to the *Charter of Fundamental Rights of the European Union*, the uniform concept of AI supervision should be grounded in ethical principles [21].

In 2023, the European Union introduced the Digital Operational Resilience Act (DORA), which came into force in January 2025 [22]. This Act requires financial entities to have a comprehensive governance and control framework in the area of information and communication risk management. A year later, the Artificial Intelligence Act, formally known as Regulation (EU) 2024/1689 of the European Parliament and of the Council, came into force, taking effect in February 2025 [23]. This Act established the rules for introducing artificial intelligence systems to the market. The Artificial Intelligence Act introduced the following four primary risk categories:

General-purpose AI models are categorized under different levels of risk, including minimal risk, limited risk, high-risk AI systems, and prohibited practices [24]. Prohibited practices refer to situations in which AI involves unacceptable risk, i.e., a risk whose results may be highly dangerous or unethical.

The EU has included the following events among the prohibited AI practices [24]:

- Using subliminal, manipulative, or misleading techniques,
- Exploiting the weaknesses of natural persons to their detriment,
- Classifying natural persons based on personal characteristics if this would lead to their unfavourable treatment,
- Profiling individuals to assess the risk of them committing a crime,
- Creating databases that will be used for facial recognition through untargeted image acquisition from the Internet or CCTV recordings,
- Drawing unjustified conclusions about the emotions of individuals in the workplace,
- Individual categorisation of natural persons based on their biometric documentation to infer information about their political views, race, trade union membership, sexual orientation, religious or ideological beliefs,
- Use of remote biometric identification methods in public spaces to prosecute crimes.

Failure to comply with prohibited practices in the area of artificial intelligence may result in an administrative fine of up to EUR 35 million or, for enterprises, up to 7% of their annual global turnover [25].

2. The Impact of Artificial Intelligence on the Labour Market

The use of artificial intelligence will have a significant impact on the labour market. Some tasks or professions will be simplified, and some will disappear. According to E. Balicka-Sawiak, among the twenty occupational groups most exposed to the impact of artificial intelligence, specialists such as financiers, certain public officials, lawyers, and programmers predominate [26]. That is a group of about 4 million Poles.

2.1. Artificial Intelligence in the Work Process

The use of AI today is mainly driven by large enterprises, the number of which in the economy is relatively small. Despite this, these sectors remain significant employers and therefore exert considerable influence on the labour market. Optimistic estimates attribute 0.1% to 1.5% of annual productivity growth to artificial intelligence [27].

The latest changes resulting from the development of AI are complementary to the knowledge and skills of better-educated employees, who more often perform tasks related to mental and non-repetitive work. This new technology can support such activities, increasing productivity. Research conducted in various research centres indicates that women are more exposed to the possibility of dismissal from work due to the introduction of AI (mainly in services and sales), similar to people with higher education. In addition, the impact of artificial intelligence on the labour market is more pronounced in highly developed countries, where AI can more readily replace certain professions [28]. Changes related to artificial intelligence can lead to increased capital accumulation by more affluent people, which strengthens income and wealth inequalities resulting from higher capital returns. The main reason for this is that artificial intelligence contributes to the displacement of various types of labour, while simultaneously increasing demand for AI-related capital and boosting returns on capital and asset values [29]. Recently, the so-called generative artificial intelligence (GenAI) has emerged, opening new perspectives for the expansion and automation of tasks [10]. Thanks to commercialized tools, it allows to shorten the working time of programmers, as well as increase the efficiency of employees in customer service and copywriting [30], for example, there are documents showing how to pass the bar exam with help of AI, the medical exam or the Medical Final Examination in Poland [28]. The biggest barrier to implementing new AI solutions is the costs that generate methodological improvements and data processing [31].

2.2. The Impact of AI on the Type and Nature of Jobs

According to the World Economic Forum report, artificial intelligence is becoming a significant factor influencing the type and nature of jobs, fundamentally transforming how professional duties are performed [32]. This technological one poses new and unprecedented opportunities and complex challenges. The cited report states that after 2025, artificial intelligence may affect 97 million jobs. Some studies indicate that 50% of currently performed activities can be automated using existing AI technologies [33]. Artificial intelligence systems are demonstrating increasing capabilities in areas once considered exclusively human, such as decision-making, creative thinking, and data analysis [34].

AI significantly impacts the creation of previously unknown jobs, as well as types and kinds of employment or ways of performing work. Applications used in AI allow entrepreneurs to employ employees without complying with applicable employment standards. In addition, AI allows for the assignment of tasks and activities to be performed by people and machines. It allows for the management of employees' time, primarily the self-employed, and the management of other factors related to work, and at the same time allows machines to monitor the progress of employees' work constantly. Artificial intelligence systems are demonstrating increasing capabilities in areas once considered exclusively human, such as decision-making, creative thinking, and data analysis [35]. However, progress in artificial intelligence may also lead to job growth in areas such as AI development, robotics, healthcare, gaming, marketing, and transport [36]. In the coming years, more jobs of this type are predicted to be created than ever before [37].

2.3. Professions Most Susceptible to Artificial Intelligence Automation

The most frequently mentioned professional professions most exposed to AI include: financial specialists, mathematicians, actuaries and statisticians, legal specialists, supervisory public officials, administration and management specialists, computer systems analysts and programmers, secretaries (general), and sales and marketing managers – Table 1.

Table 1 Professions Susceptible to AI [26]

L P.	Occupational exposure to AI		Large language models exposed to AI		Professionals exposed to AI	
	Group of professions	Number of employees [thousand]	Group of professions	Number of employees [thousand]	Group of professions	Number of employees [thousand]
1.	financial specialists	294	specialists in the field of law	137	architects, surveyors and designers	146
2.	mathematicians, actuaries and statisticians	97	academic teachers	101	computer systems analysts and programmers	359
3.	specialists in the field of law	137	Administration and management specialists	467	engineers (excluding electrical engineering)	257
4.	government officials for supervision	206	Sales, Marketing and Public Relations Specialists	295	mathematicians, actuaries and statisticians	97
5.	Administration and management specialists	467	specialists in social and religious fields	117	database and computer network specialists	56
6.	computer systems analysts and programmers	359	secretaries (general)	52	electrotechnology engineers	76
7.	secretaries (general)	52	teachers	109	financial specialists	294
8.	Sales and Marketing Managers	99	writers, journalists and philologists	66	information technology managers	26

This group also includes academic teachers and some management staff of various enterprises. Currently, around 4 million people are employed in such professions. On the other hand, the number of people working in professions least exposed to the impact of AI is around 2 million, which is 10% of the employed, i.e., twice as few (this concerns the selected 20 professions from each group) [26].

3. Own Research Methodology

3.1. The Purpose, Subject and Object of the Study

The research aimed to analyse artificial intelligence in the labor market context and, on this basis, to determine the benefits, challenges, and development prospects among employees using artificial intelligence from the Piła region. This aim was defined by T. Pilch and T. Bauman as the acquisition of knowledge that is as precise, specific, simple, and general as possible, with a high content of acquired information [38]. That may be a theoretical, verification, or diagnostic study, aiming to examine a specific state of affairs or event.

The subject of research may include all objects, phenomena, and entities, along with the processes they undergo and to which research questions are directed [39]. The subject of research in this study will be artificial intelligence, and the subjects will be employees and managers of the companies studied.

3.2. Research Methods and Techniques

The scientific research method is defined as a group of theoretically justified conceptual and instrumental activities that encompass research efforts aimed at solving predetermined scientific problems [40]. In practice, various research methods are employed, such as experiments, diagnostic surveys, monographs, case studies, and analytical methods including comparative and historical approaches [41].

The presented study used the diagnostic survey method and survey technique. The survey is a commonly known technique for collecting information, which consists of the examined person filling in previously prepared questionnaires with a high degree of standardization [38].

3.3. Research Problems

According to S. Nowak, a research problem is a specific set of questions that should lead to answers [42]. Similarly, a research problem is defined as a question whose answer is the result obtained through scientific research. The author adds that these questions may take the form of issues "to be resolved" or "to be supplemented."

The research problems addressed in this study cover the following areas:

- 1) The everyday use of artificial intelligence,
- 2) Activities in which management staff utilize artificial intelligence tools,
- 3) Understanding the mechanisms behind the operation of AI tools,
- 4) Developing AI-related skills,
- 5) Expected changes in managerial roles due to AI,
- 6) Ethical considerations in management when using AI tools.

3.4. Organization and Scope of Research

In addition to analyzing the literature, quantitative surveys were conducted aimed at managers of three companies headquartered in the Piła region, in the Wielkopolska province, to obtain the actual picture of artificial intelligence in the activities of large company employees. Thanks to this approach, practitioners' opinions were reached. The study took into account the anonymity of responses. The survey questionnaires were sent via e-mail to selected companies. One hundred forty-three responses were received, of which 108 were accepted for further research.

4. Artificial Intelligence in the Labour Market Environment

The Polish labour market has been evolving rapidly in recent years; the number and structure of the labour pool are changing, as are the scale and structure of labour demand. A shortage of workers in most industries or professions often forces action to improve work efficiency. The solution may be new technologies, such as robotization, big data, automation, machine learning, and artificial intelligence, which allow for increasing employee productivity. One of the barriers to implementing new technologies—particularly artificial intelligence—is a low propensity to invest and take risks [43].

4.1. Artificial intelligence in everyday use

Most respondents see artificial intelligence in everyday use as a “phone – private assistant” – 90% – Figure 1.

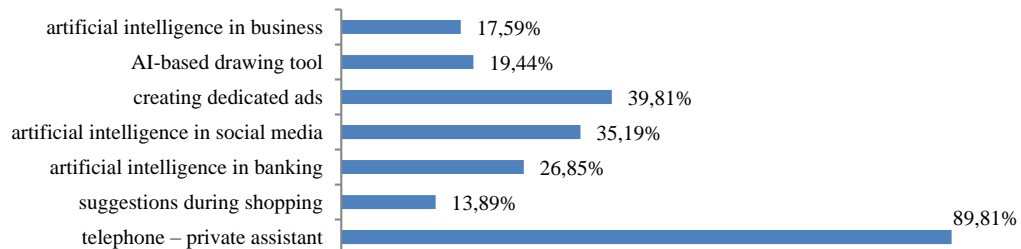


Figure 1. Elements of artificial intelligence observed in everyday use [author's own study based on Annex 1 (Table 2)]

Moreover, in the surveyed companies it is also noticed in the creation of dedicated advertisements (40%), in social media (35%), in banking (27%), among drawing tools (19%), in business (18%), in shopping suggestions (14%), in robots taking over power (8%).

4.2. Artificial intelligence tools used in the researched entities

Document analysis dominates (93%) among the artificial intelligence tools used by the surveyed entities—Figure 2.

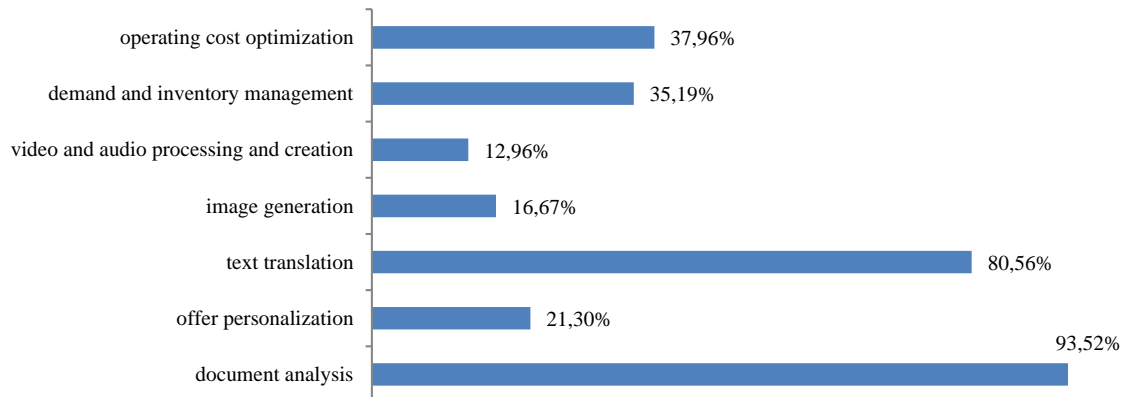


Figure 2. Artificial intelligence Tools Used in the Surveyed Entities (Source: Own Study Based on Annex No. 1, Table 2)

This includes text translation (81%), offer personalization (21%), demand and inventory management (35%), image generation (17%), and video and audio editing and creation (13%).

4.3. Understanding How Artificial Intelligence Tools Work

Understanding the mechanism of operation of artificial intelligence tools is declared by 40% of respondents and as many as 60% claim the opposite - Figure 3.

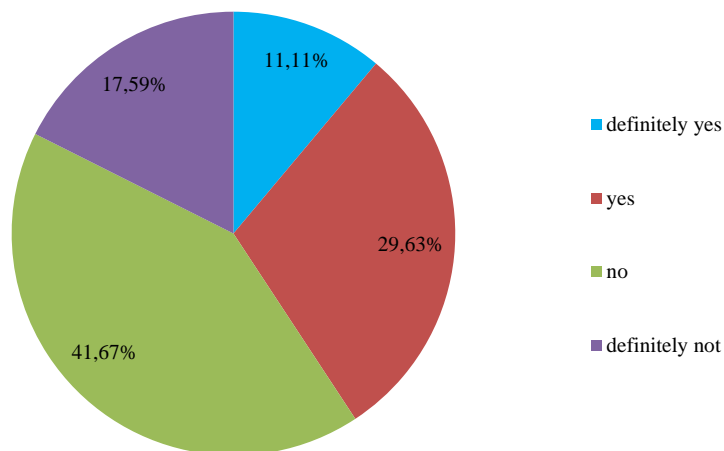


Figure 3. Understanding the Mechanisms of Operation of Artificial Intelligence Tools in the Studied Entities (Source: Own Study Based on Annex No. 1, Table 2)

This is mainly because employees often do not have direct contact with those implementing artificial intelligence tools. Even when they use them daily, they may not realize they are interacting with AI, assuming instead that it is simply another stage in the progression of new technologies.

4.4. Developing AI Skills

Developing AI skills is noticed by 58% of respondents, and 42% have a different opinion – Figure 4.

4.5. Expected Changes in Management Positions as a Result of AI

58% of respondents anticipate changes in managerial positions as a result of AI, while 42% do not share this view (see Figure 5).

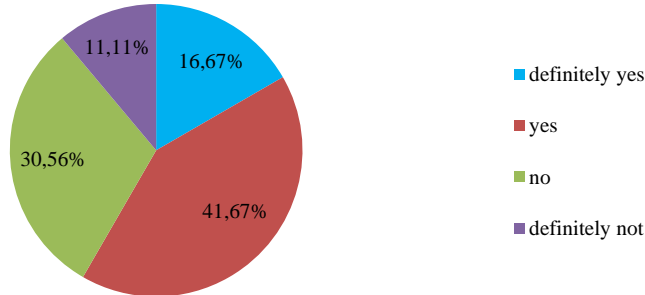


Figure 4. Development of AI skills in the surveyed entities (Source: Own Study Based on Annex No. 1, Table 2)

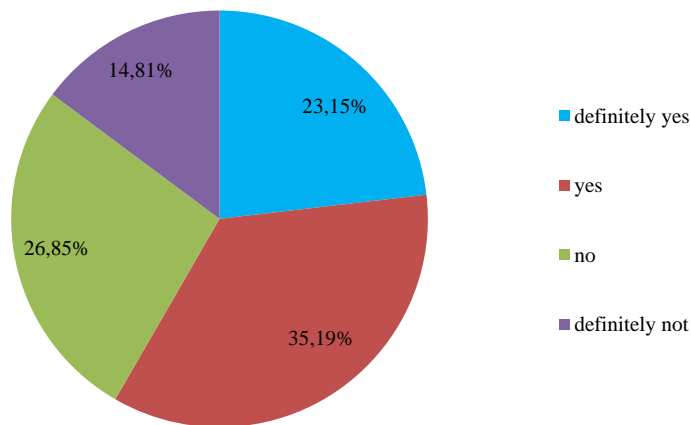


Figure 5. Expected Changes in Managerial Positions as a Result of AI in the Surveyed Entities (Source: Own Study Based on Annex No. 1, Table 2)

4.6. Ethical Issues in Management When Using AI Tools

The occurrence of ethical issues in management when using AI tools is reported by the majority of surveyed entities (73%) (see Figure 6).

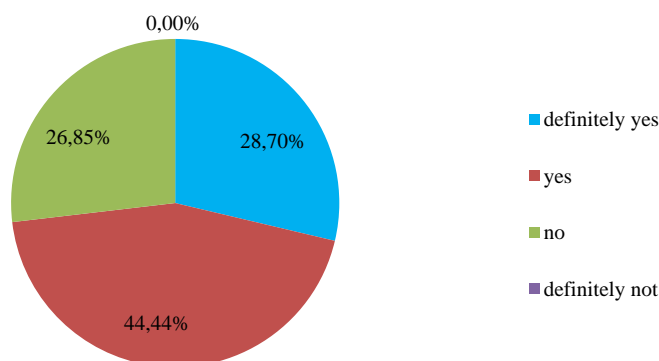


Figure 6. Occurrence of ethical problems in management when using AI tools in the surveyed entities (source: own study based on Annex No. 1, Table 2)

5. Discussion

In recent years, an increasing number of studies indicate the growing importance of AI in shaping the labour market, as well as everyday business processes. The results of these studies emphasize the potential and challenges related to the implementation of this new technology, especially in Poland, where the labour market is changing dynamically. In our studies, most respondents identified artificial intelligence in the form of a personal assistant. Similarly, A. Kłoczko highlights the important role of virtual assistant solutions in corporate payment systems [44]. G. Tarasiuk and G. Czapski demonstrate the strong interest among companies in using artificial intelligence as an assistant in product selection [45]. According to ML Żybula [3], AI is often used as an assistant in market research. It can be said that the widespread use of voice assistants has increased users' acceptance and awareness of the possibilities of AI in everyday life.

The conducted research shows that artificial intelligence was frequently used for document analysis, a finding also confirmed by K. Gumkowski, who noted that data analysis using AI serves as the foundation for automating various processes within enterprises [46]. The results of our research in the field of understanding the mechanism of AI operation indicate large gaps in this area, which reflects the educational challenges regarding AI tools. Similar conclusions were drawn by A. Antonik, who emphasized the need to educate employees in the field of artificial intelligence in order to reduce competence gaps and increase acceptance of the technology [37]. According to the results of our research, the vast majority of respondents recognize the need to develop qualifications related to artificial intelligence. This aligns with the trend highlighted by J. Fazlagić, who emphasized that developing competencies in the field of AI is essential for employees to adapt to new market conditions [38]. The results showing that over seventy per cent of respondents see ethical problems related to AI are consistent with the research by Korgula et al. [28], who point to the need to introduce a legal and ethical framework related to AI to prevent abuse and ensure transparency.

The results of our own research confirm the trends described in the literature: the need to improve the digital competencies of employees, the growing popularity of AI tools in business and everyday life, as well as the ethical challenges and risks associated with implementing this type of technology.

6. Observations and Applications

This article on artificial intelligence and its impact on the Polish labour market provides valuable insights into the development of AI technologies, their applications, associated benefits, and emerging concerns. Below are the key observations derived from the article:

- The evolution of artificial intelligence began with theoretical concepts and has since developed into a wide range of practical applications. A significant milestone occurred in the 1980s with the introduction of machine learning algorithms.
- The article discusses various types of artificial intelligence, highlighting categories such as weak, strong, mental, safe, reverse, augmentative, representative, and predictive AI. This classification illustrates how different forms of AI can influence diverse areas of human activity.
- The article presents both the benefits and concerns associated with AI, such as increased production efficiency, enhanced decision-making, and improved medical diagnostics. However, it also raises issues including potential job displacement, threats to privacy, and ethical dilemmas related to machine-driven decisions.
- AI is reshaping the labour market by simplifying or eliminating specific job roles.
- Emphasis is placed on the importance of AI education and skill development to help employees adapt to a rapidly evolving labour market.
- Ethical and legal regulations, particularly those established by the European Union, are discussed to mitigate risks associated with AI usage.

Among the practical applications of artificial intelligence highlighted in the article are:

- **Process automation** – boosting efficiency, reducing operational costs, and enhancing product quality across various industries.
- **Medical diagnostics** – enabling faster and more accurate diagnosis and treatment of patients.
- **Business decision-making** – using AI systems to support strategic decisions and forecast market trends.
- **Job creation** – particularly in fields requiring technical expertise such as programming, robotics, and data analysis.
- **Education and digital skill development** – with AI implementation driving the need for new competencies and better preparation of employees for evolving market conditions.
- **Risk management** – supporting the identification of potential threats, especially in information security.

7. Conclusions

The article presents the complexity and multi-faceted nature of artificial intelligence, which has the potential to introduce significant improvements in various fields, as well as to generate ethical challenges. Societies and organizations must make informed decisions in the context of implementing and developing artificial intelligence, maximizing the benefits and minimizing the risks associated with new technologies. Appropriate legal regulations, as well as education, will be necessary to ensure the smooth introduction of AI into everyday and professional life.

The research shows that the impact of artificial intelligence on the labour market is multi-dimensional. It can lead to automation, and thus to the disappearance of some professions

(finance specialists, systems analysts, lawyers), as well as to the creation of new jobs (technology development, data analysis, robotics). Specialist professions are particularly vulnerable to destruction, which can deepen income and wealth inequalities, mainly in highly developed countries. An important challenge is the need to raise employees' knowledge in the field of AI and develop digital skills to ensure the organization's adaptation to the dynamically changing labour market.

Legal and ethical regulations, such as the EU regulations on artificial intelligence, are an important element in minimizing the risk of abuse, as well as protecting privacy and preventing unethical practices (manipulation, unauthorized recognition of personal characteristics). Transparency and social awareness in the use of AI are necessary to build trust and ensure that the development of technology will serve employees and society, and not only the interests of corporations or individuals. It should be emphasized that artificial intelligence has great potential to create innovative jobs and improve the quality of life, as long as its management is ethical and responsible. Societies, companies and institutions should take joint actions in the field of ethics, regulation and education to balance the benefits and risks associated with the development of AI.

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Other materials

Annex No. 1

Table 2 Responses of Respondents in the Area of Artificial Intelligence

LP.	Question	Suggested Answer	Number of replies (108)	%
		document analysis	101	93.52

1.	What artificial intelligence tools are used in your company?	personalization of offers	23	21.30
		translation of texts	87	80.56
		generating images	18	16.67
		video and audio editing and creation	14	12.96
		demand management and inventory management	38	35.19
		optimisation of operating costs	41	37.96
2.	Do you understand the mechanism of operation of artificial intelligence tools?	definitely yes	12	11,11
		Yes	32	29.63
		NO	45	41.67
		not	19	17.59
3.	What activities do management teams use artificial intelligence tools for?	administrative	67	62.04
		resource sharing	18	16.67
		budget	42	38.89
		document translations	82	75.93
		Other, what?	0	0.00
4.	Are artificial intelligence skills being developed in your company?	definitely yes	18	16.67
		Yes	45	41.67
		NO	33	30.56
		definitely not	12	11,11
5.	Does the company anticipate any changes in positions as a result of AI?	definitely yes	25	23.15
		Yes	38	35.19
		NO	29	26.85
		definitely not	16	14.81
6.	Are there any ethical management issues when using AI tools?	definitely yes	31	28.70
		Yes	48	44,44
		NO	29	26.85
		definitely not	0	0.00
		telephone - private assistant	97	89.81

7.	What elements of artificial intelligence do you observe in everyday use?	suggestions when shopping	15	13.89
		artificial intelligence in banking	29	26.85
		Artificial Intelligence in social media	38	35.19
		creating dedicated ads	43	39.81
		AI-based drawing tool	21	19.44
		artificial intelligence in business	19	17.59
		robots taking over	9	8.33