
The Consequences of Implementing Artificial Intelligence Technology in the Digital Economy from the Perspective of Generation Z

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Abstract:

Purpose: The aim of this article is to understand how Generation Z (born 1995-2010) perceives artificial intelligence (AI) and the effects of its implementation in the digital economy.

Design/Methodology/Approach: The research was exploratory in nature. The study used a diagnostic survey method, a survey technique, and a survey questionnaire tool. The study was conducted using the CAWI (Computer Assisted Web Interviewing) method. The sample included 323 respondents.

Findings: The study reveals the limited trust of the younger generation in AI and the high public awareness of privacy protection. The results also highlight the high frequency of AI use in everyday life and concerns about the possibility of AI replacing work performed by humans in specific sectors.

Practical Implications: The results of the study provide valuable information for both private companies and public institutions as well as recommendations for politicians. Understanding the approach of the young generation to AI technology can influence the development strategies of companies and regulatory decisions regarding the technologies of the future. It can influence the directions of education.

Originality/Value: Artificial intelligence and the digital economy are rapidly developing topics, but their specific impact on younger generations and selected sectors of the economy has not yet been widely studied. The originality of the study is the interdisciplinary approach to the problem from an economic, social and technical perspective. The study focuses on Generation Z, which is entering the labor and consumption market, a generation with different expectations, which makes them a unique research group.

Keywords: Artificial intelligence, generation Z, digital economy, trust, economic effects of AI implementation.

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1. Introduction

In recent years, artificial intelligence has been a leading topic of discussion in various global bodies, including the Organisation for Economic Co-operation and Development (OECD, 2024). The aim of the OECD is to support member states in achieving the highest possible level of economic growth and the standard of living of citizens, which is why most of its recent sessions are devoted to issues such as *"Artificial Intelligence at Work, Innovation, Productivity and Skills"* or *"Artificial Intelligence and the Future of Labor, Trade and Social Affairs"* (OECD, 2024).

The currently dominant digital economy, which is based on electronic communication, information technologies, automation and virtualization of activities, is an ideal space for artificial intelligence. As Kelly (2016, pp. 1-12) notes, the dynamics of changes in digital business models are determined by the concepts of the new economy. Cognitive algorithms that describe technological platforms based on the scientific disciplines of artificial intelligence and signal processing are of particular importance in terms of dynamizing the operation of new business entities.

These platforms include, among others, machine learning, reasoning, natural language processing, speech recognition and vision (object recognition), human-computer interactions, generating dialogue and narrative. Skowronek-Mielczarek (2021, pp. 23-36) adds that in the most dynamically developing enterprises, the revenues and profits achieved are increasingly the result of using information and communication technology (ICT) and systems created on its basis. ICT technologies play a strategic role in the functioning of the enterprise, becoming its strategic asset.

The close interconnections between a company and its information system mean that the development of a company is directly dependent on the capabilities of its information and communication system. All this boils down to the claim that the role of artificial intelligence in the digital economy will become increasingly crucial.

The *"White Paper on Artificial Intelligence. A European Approach to Excellence and Trust"* published in February 2020 by the European Commission is indisputable proof that artificial intelligence is an integral part of today's economy (EC, 2020). It identifies policy options for achieving the dual goal of promoting AI adoption and mitigating risks associated with its applications. It assumes that Europe's economic

growth and social well-being are based on the value created by data, and AI is one of the most important applications of the data economy. As noted by Sun *et al.* (2024) and Wen Wang *et al.* (2024, pp. 3207-3221), the impact of AI on firm productivity is an unexplored issue and an important topic for further research and analysis.

With the development of artificial intelligence, the role of the Polish population is changing, especially in shaping and adapting new technologies. Generation Z (people born between 1995 and 2010) grew up in a world dominated by digital technologies, and as a key group of consumers and future leaders in the labor market, they have the potential to transform many sectors of the economy.

Therefore, it is important to analyze their attitudes and expectations regarding solutions based on AI technologies. This will allow for a better understanding of the perspective of Generation Z in the context of implementing artificial intelligence.

2. Artificial Intelligence (AI) in the Digital Economy and Generation Z: A Literature Review

Artificial intelligence has been present in society for decades. Nevertheless, one might get the impression that it was only the premiere of the GPT Chat chatbot (November 30, 2022) developed by the OpenAI organization that publicized the presence of this revolutionary technology in people's lives. The introduction of GPT Chat to the world meant that the areas of education, higher education, scientific research, literature, as well as the labor market in the sphere of accounting, banking, customer service and many other areas of life will have to adapt to the new reality and change the existing "rules of the game" (Aly, 2022; Zarifhonarvar, 2023; Hwang and Chien, 2022; Holmes *et al.*, 2019; Gillani *et al.*, 2023; Balsmeier and Woerter, 2019).

The concept of "artificial intelligence", despite the common use of the term, is not easy to define. The term "artificial intelligence" was first proposed and defined in 1955 by John McCarthy (Rózanowski, 2007, pp. 109-135). According to McCarthy (2007), the task of artificial intelligence is to construct machines whose operation can be said to be similar to human manifestations of intelligence, e.g., reasoning, problem solving, learning, language understanding, etc.

Duch (1997) proposed to define artificial intelligence as a field of science that deals with solving efficiently non-algorithmic problems based on knowledge models. In turn, Stan Gibilisco in 1994 characterized artificial intelligence as referring to computers that imitate aspects of human thinking (Gibilisco, 1994).

According to Gibilisco (2001), a simple electronic calculator does not have the status of AI, but a machine that can learn from its mistakes or can show off its reasoning has the status of AI. There is no exact dividing line between these extremes.

Artificial Intelligence is also defined as a field of research that attempts to emulate human intelligence in a machine (Gibilisco, 1994). The field of AI includes knowledge base systems, expert systems, computer vision, machine learning, natural language understanding, robotics, and others (Kurzweil, 1999).

Regardless of the adopted definition of artificial intelligence, what should be emphasized is the fact that the incredibly dynamic development of computer science and the increase in the level of use of electronics in our daily functioning are exceptionally conducive to the development of this field of science. Artificial intelligence is one of the most interesting, fashionable, but also controversial issues in the present day.

The second issue inseparable from AI is the digital economy (DE). The digital economy, i.e. the global economy saturated with information techniques and technologies based on digital components (Sose *et al.*, 2023). An economy that is not afraid of physical barriers, because transactions are concluded on the Internet, data is saved in the so-called cloud, and customer behaviors and preferences are saturated with Big Data (another relatively new phenomenon), i.e. collections of large amounts of digital data (Rong, 2022).

It is worth emphasizing here that what connects artificial intelligence, digital economy and so-called Big Data is the scientific and technical progress of recent decades. It can therefore be assumed that the development of science and technology are positive phenomena that provide societies with new solutions, machines, devices, methods or possibilities. Recent years have seen the premiere of the 3D printer, the da Vinci surgical robot, and the production of hybrid cars. All these innovations are supposed to make life and work easier for people, and even be environmentally friendly (Yang and Zhu, 2024; Wu *et al.*, 2024; Ali *et al.*, 2024). However, we must remember not to get lost in all this, and the threat is becoming more and more real (Roberts, 2024).

The literature is increasingly focusing on the role of artificial intelligence in the transformation of the digital economy and its impact on various demographic groups, including Generation Z. According to the literature, Generation Z, which includes people born in the years 1995–2010, is the first generation to have widespread access to electronics and the Internet from an early age. As a result, these people are described as having high competences in using computers and in searching for and processing information via virtual space (Świerkosz-Hołyś, 2016; Muster, 2020).

Due to their young age, these are people who are currently continuing their education, looking for their first job, or setting up their own households (Żarczyńska-Dobiesz and Chomątowska, 2014). Due to their birth in a fully digitalized society, they are the group of consumers who are very keen to use online payments, mobile banking, online shopping, and any other services that can be

performed online without having to leave home (Ayuni, 2019; Wang, 2021; Fransiska, 2023). AI technology drives the development of new business models, including subscription platforms and on-demand services, which directly meets the expectations of young consumers from Generation Z. They value convenience, availability, and speed of execution (Schwaba and Malleret, 2020).

Research shows that Generation Z shows greater trust in AI technology, especially in the context of online shopping, where artificial intelligence supports customer service processes, opinion analysis or offer personalization (Horin, Kacperska, and Łukasiewicz, 2025).

As indicated by the World Economic Forum report (2020), the development of AI increases the demand for employees with skills in data analysis, programming, operating advanced programs, specialists in artificial intelligence, digital marketing, process automation, digital transformation, robotics engineers, etc. This is an educational challenge for young people and affects education and the labor market (WEF, 2020).

3. Research Methodology

The main goal of the article was to understand how Generation Z perceives artificial intelligence and the effects of its implementation in the digital economy. The research and analysis focus on assessing the impact of AI on various sectors of the economy, including the labor market, consumers's decision-making processes and their trust in AI-based solutions.

A key goal is to understand how the younger generation perceives the benefits and risks associated with implementing this technology in various areas of the digital economy.

The results can provide valuable information on potential challenges and opportunities related to AI implementation, which may be important not only for companies but also for public policy. Answers to the following research questions, which indicate issues requiring explanation and resolution, are helpful in achieving the goal:

- *RQ1. How does Generation Z perceive the impact of implementing artificial intelligence on the quality of life?*
- *RQ2. Which industries, in the opinion of Generation Z, benefit the most economically from the use of artificial intelligence?*
- *RQ3. Are there any changes in the labor market as a result of implementing artificial intelligence technology?*
- *RQ4. Does artificial intelligence affect the purchasing decisions of Generation Z?*

The following research hypotheses were put forward in the article:

- **Hypothesis 1:** Generation Z perceives the implementation of artificial intelligence in the digital economy as beneficial for the quality of life, increasing the efficiency and availability of services.
- **Hypothesis 2:** The development of artificial intelligence in sectors such as trade, finance and health will bring tangible economic benefits to companies, increasing their competitiveness.
- **Hypothesis 3:** As a result of the implementation of artificial intelligence in various industries, there will be a change in the labor market, where certain professions will be automated, and at the same time new jobs will appear requiring new competences.
- **Hypothesis 4:** The increase in the use of artificial intelligence in e-commerce and digital services will affect the purchasing decisions of Generation Z, increasing their trust in technology and accelerating purchasing processes.

The presented study used the diagnostic survey method, survey technique and survey questionnaire tool. The study was conducted in the form of an online survey using the CAWI (Computer Assisted Web Interviewing) method. The survey questionnaire contained 43 questions, to which the study group answered anonymously. The study was exploratory in nature and concerned a group of Internet users aged 12-29, classified as Generation Z. The survey was conducted in the period from April to May 2024, and 323 respondents took part in it, including 185 women (57.3%) and 138 men (42.7%).

4. Research Findings and Discussion

4.1 Using Artificial Intelligence Technology in the Digital Economy

One of the main technologies of the digital economy is artificial intelligence (Sturgeon, 2019). In the opinion of respondents, the concept of artificial intelligence is mainly associated as a technology supporting and streamlining decisions. This definition was indicated by as many as 62.8% of respondents. This means that in their daily decisions they use supporting tools, including artificial intelligence.

Over 78% of respondents considered that artificial intelligence has a noticeable impact on their lives. Among them, 17.6% assessed this as a decisive one, while only 15.2% stated that its impact is negligible. Taking into account purchasing decisions on websites, respondents indicated that 43.3% use the help of artificial intelligence.

Another way of looking at artificial intelligence is to define it as a technology that allows people to replace repetitive work. This is how more than half of the respondents (50.8%) define AI. Koch *et al.* (2017) have already noted that one of the

branches of artificial intelligence are algorithms, or machine learning systems that can learn from data, identify patterns and make decisions with minimal human intervention. They allow companies that use them to gain certain market advantages. These companies can better predict market trends, optimize production processes and increase the effectiveness of marketing activities (Koch *et al.*, 2017). According to respondents, the sectors that make the greatest use of AI-based solutions include: IT and telecommunications services (71.2%), trade – 43%, and education – 35.6%. (Figure 1).

Generation Z indicates that the dominant sectors for which the development of artificial intelligence technology will be the most profitable are IT and telecommunications services and trade. The largest number of respondents indicated IT and telecommunications services (59.1%) as the sector benefiting the most from the implementation of AI. This is understandable, because this sector directly deals with digital technologies and innovative solutions, including artificial intelligence.

The next high on the list were trade (44%) and transport, logistics and forwarding (40.9%). In the case of these industries, AI is used for process optimization, consumer data analysis and automation, e.g. in warehouses or delivery systems. The next industries with high potential from the perspective of respondents are education (37.2%) and financial & insurance services (32.5%).

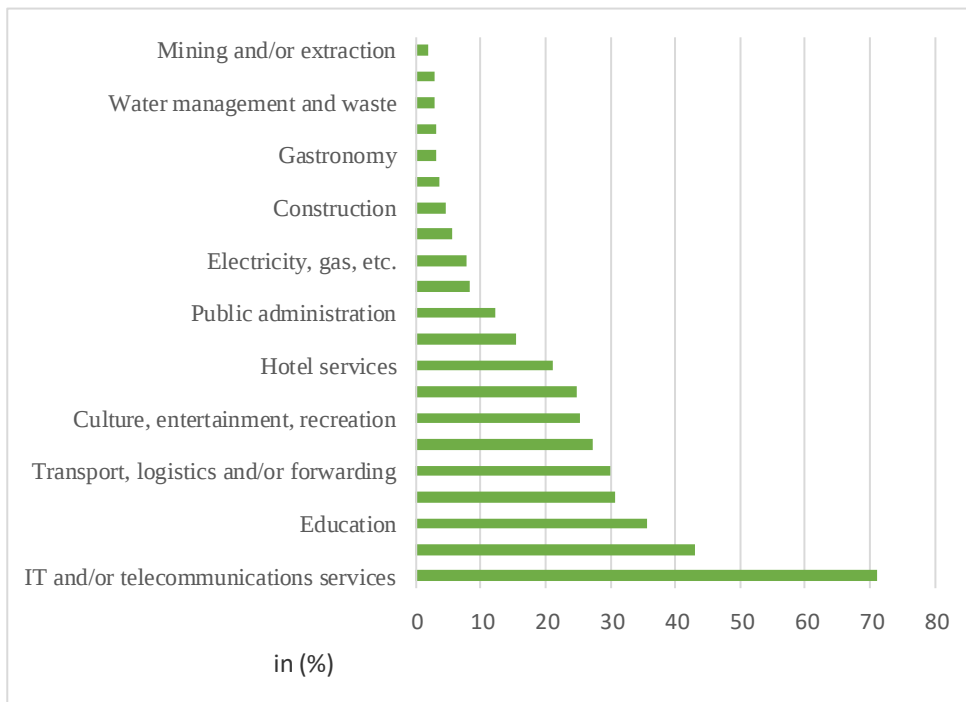
In education, AI can support the personalization of teaching, and in finance — develop algorithms for risk management and customer service. As Panasiuk notes (2022, pp. 147-162), artificial intelligence also accelerates the development of new business models, such as e-commerce platforms or services based on data analysis, which leads to increased competitiveness and dynamic market development.

Generation Z indicates the importance of artificial intelligence in B2B services, such as consulting, data analysis or process automation in business support sectors (26.3%) and professional and scientific activities (24.1%).

Sectors such as public administration (18.9%) and real estate services (18%) are of lesser importance in the opinion of Generation Z, but still have a noticeable place in AI adaptation.

These solutions may include bureaucracy automation or market analysis. Sectors such as healthcare (8.7%) and catering and agriculture (6.5%) occupy a lower position, which may be due to the limited knowledge of respondents about AI applications in these areas. Social assistance (4.3%) are also of marginal importance in the opinion of respondents, and mining (6.2%) are at the end of the list, which may suggest that respondents are less aware of the potential of AI in these sectors (Figure 2).

Figure 1. *Economic sectors most frequently using artificial intelligence technologies according to respondents' opinions*



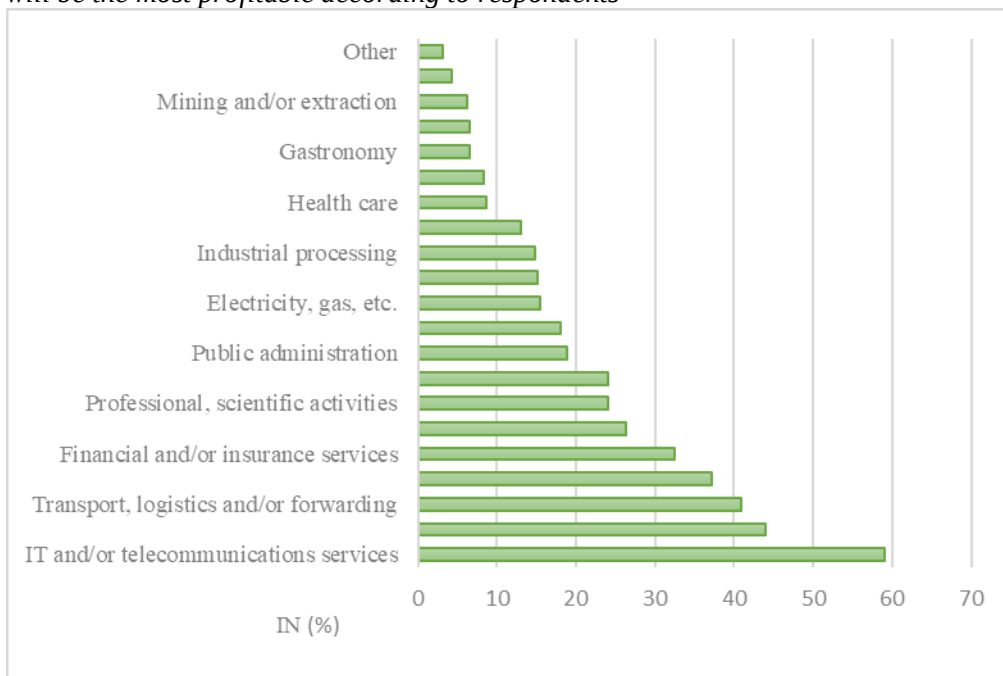
Source: *Own elaboration.*

4.2 Generation Z's Trust in AI Technology

The generation born in a fully digitalized world certainly has a greater ability to navigate in virtual reality. By interacting with devices such as smartphones, tablets or laptops from an early age, they acquire skills in operating and using electronics or the Internet from an early age, which is often a challenge for older generations. Can we therefore assume that Generation Z trusts the network and its smartphones completely or will it also show a healthy dose of skepticism towards artificial intelligence? Any concerns should mainly concern issues such as personal data protection, the risk of disinformation or the ethics of algorithms analyzing our actions.

In the analyzed study, we asked Generation Z whether they trust the use of online medical services based on AI, whether they trust the use of AI in performing independent financial transactions, whether they trust AI technology in the context of its use in autonomous vehicles, and whether they trust AI-based programs in the context of legal services (Figure 3).

Figure 2. Industries for which the development of artificial intelligence technology will be the most profitable according to respondents



Source: Own elaboration.

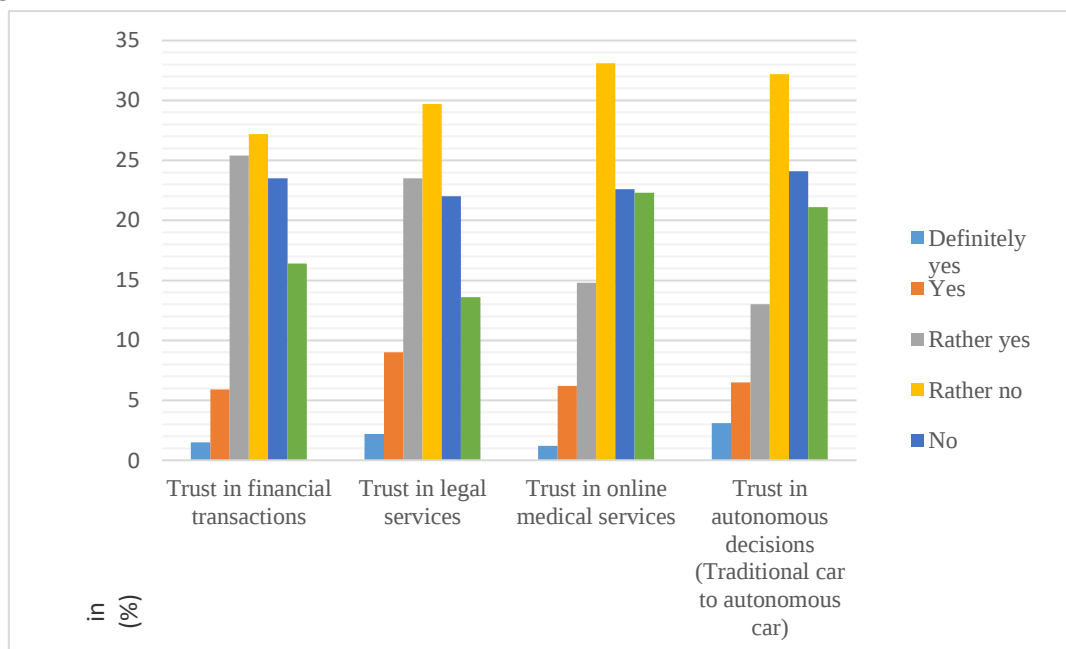
The research shows that Generation Z has limited trust in AI-based technologies. The analysis of data on trust in financial transactions shows a great reluctance (39%) of Generation Z to entrust AI with financial transactions. Among this group, 23.4% answered no and 16.4% definitely not, which indicates concerns about security, reliability and ethics. A large part of people 27.2% are uncertain and chose the answer rather not, which suggests that they are not completely against it, but have some concerns.

Moderate trust in these transactions is shown by 31.8% of respondents. Of this group, only 5.9% answered yes. The smallest group of 1.5% were determined, with full trust. The data shows that some part of Generation Z is open to using AI services in the field of financial transactions, but the dominant part remains cautious and distrustful. This is the result of concerns about security. To change this, it is necessary to ensure greater transparency, credibility and security in financial systems based on AI. Education in this area is also needed.

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Figure 3. Trust in artificial intelligence in selected sectors in the opinion of generation Z



Source: Own elaboration.

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Another surprise are the results regarding trust in AI technology in the context of legal services. The study aimed to assess the extent to which Generation Z is ready to entrust tasks related to legal services to systems based on artificial intelligence, e.g. legal advice, document analysis, preparation of contracts.

The analysis shows that the majority of respondents are skeptical -29.7 indicated rather not and another large group of 22% expressed a definite reluctance to such services. Limited willingness to use such services was indicated by 35.8% of respondents. We believe that Generation Z is open to new technologies, but in this case 23.5% of respondents would decide to use such services and only 9% were

determined. One may wonder what factors influence such decisions. These are undoubtedly (1) data security (trust in the protection of privacy and security of entrusted information), (2) ethical issues, will the solutions provided by AI be ethical? (3) certainty as to the correctness of the solutions (legal services require high precision and knowledge of the law, which may raise concerns about errors).

Only 1.2% of respondents from Generation Z have full confidence in online medical services based on AI. This suggests that although AI technology in medicine is considered promising, only a few are convinced of its effectiveness and safety. Around 20% of respondents are willing to try such services, but with some reservations. The vast majority express concerns. 33.1% of respondents indicated rather not and 22.6% no. As many as 22.3% of respondents are completely opposed. This means that most respondents are not sure whether to entrust their healthcare to AI systems. These results indicate the need for education about AI in medicine.

One of the aspects studied was determining the readiness of Generation Z to use new technologies. In this context, a question was asked about replacing a traditional car with an autonomous one, testing trust in autonomous decision-making systems. The majority of respondents (77.6%) have doubts or completely reject the idea of having an autonomous car. This indicates strong concerns about safety and reliability of the technology, but also indicates a high level of distrust.

Only 3.1% of respondents are determined to have such vehicles. They are convinced and ready to trust this technology. Around 6.5% of respondents are in favour and another 13% are open to such solutions, but their decision is not clear. To sum up, it should be pointed out that Generation Z has relatively low trust in autonomous vehicles, which results from concerns about the safety and reliability of the technology.

The key aspect of security for Generation Z is the protection of personal data. The largest number of respondents (70%) indicated this aspect of security, which may suggest concerns about privacy and the need to maintain the confidentiality of personal information. In second place are security measures, e.g. passwords, verification questions, this aspect was mentioned by as many as 57.6% of respondents. Almost half of the respondents considered that the key aspect of security is limiting access to the account, which may result from fear of unauthorized use of data. Legal regulations were indicated the least often (31.6%).

The results clearly indicate high social awareness of privacy protection. Generation Z is particularly concerned about the misuse of data. The priority is protection against cyberattacks and unauthorized access. The results emphasize the need to increase transparency in the management of personal and personal data. Companies implementing artificial intelligence technologies should focus on building user trust through transparent policies and solid security.

4.3 Impact of AI on the Labor Market and Economy

In the study, we asked respondents from generation Z whether, as a result of the development of artificial intelligence technology, the need for paid work will disappear and these jobs will be performed by machines. Over a quarter of respondents agreed and believe that AI can eliminate the need for paid work. This group sees a large potential of automation as a force capable of replacing people in many professions.

However, the largest group is made up of respondents who are uncertain about the impact of AI on the future. This result indicates the complexity of the issue and the lack of full knowledge on the subject of AI's limitations in various sectors of the economy. Over a third of respondents from generation Z believe that paid work will remain. This results from the belief that not all professions can be replaced by robots and artificial intelligence. The conclusions that emerge from the analysis are the need for education, especially it is necessary to increase public awareness of the possibilities and limitations of AI in order to better understand the impact on the economy.

As mentioned earlier, AI will have a huge impact on the labor market in the near future. It is not without reason that this issue is currently one of the leading topics of government meetings, international organizations and scientific research (Webb, 2019). An example of the increased interest in the subject can be the organization of a conference by the OECD, which will take place in December 2024 with the following topics of individual sessions:

- *Women's and men's experiences of AI at work: how might they differ?*
- *Tracking AI diffusion in firms and sectors: new evidence for policymaking.*
- *OECD's AI Capability Indicators: A first look at the scale on social interaction.*
- *AI Incidents: A look at past mistakes to inform future AI governance.*
- *Is training adapted to the AI transition?*
- *Maintaining the Fairness and Relevance of High-Stakes Exams in the Age of AI.*
- *AI use by public employment services: can it lead to more inclusive labour markets?*
- *AI and Competition.*
- *Does AI boost firms' and workers' productivity?*
- *Agentic AI: Balancing opportunities and risks in the age of intelligent agents (OECD, 2024).*

The availability of artificial intelligence can introduce significant changes to the job market. Similar to the industrial revolution, during which machines replaced the work of human hands, this time computers can replace the work of human heads.

Industries such as logistics, manufacturing, and banking and financial services are already using advanced automation systems that replace human work.

The analysis of Generation Z opinions shows that a clear majority sees a threat, i.e. fear of digital unemployment. This confirms the broad awareness of the potential negative effects of automation. More than half of respondents (57.6%) believe that the development of AI will lead to serious problems related to digital unemployment, which will have both economic, social and political significance.

This group fears that automation may lead to significant changes in the labor market, including the loss of jobs in traditional professions, which will force changes in employment policy. Only 15.2% of respondents have the opposite opinion. They believe in society's ability to adapt and be ready for change. This is a group that sees opportunities to create new jobs related to the development of technology. A large group is undecided (27.2%). The uncertainty about the impact of AI on the labor market may be the result of a lack of knowledge about the capabilities of artificial intelligence. It is necessary to invest in education.

Michael Webb (2019) from Stanford University conducted a comprehensive analysis of the impact of AI on the job market and concluded that *„Low-skilled jobs are most at risk from robots, medium-skilled jobs are most at risk from software, high-skilled jobs are most at risk from AI. What's more, AI is much more likely to affect highly educated and older workers than these previous technologies”*. In turn, Agrawal et al. (2019, pp. 31–50) found that *“For any given worker, a key predictor of whether AI will replace their job is the extent to which the core skill they bring to the job involves anticipation”*.

Zarifhonorvar (2023) predicts both positive and negative consequences of generative AI (such as ChatGPT) on the labor market. On the one hand, they are predicted to lead to the displacement of workers, especially those in routine jobs. This displacement, in turn, could lead to unemployment, falling wages, and rising income inequality. On the other hand, AI could generate new employment opportunities, especially in high-skilled occupations, and increase productivity and economic growth.

The development of AI could create new jobs for specialized IT professionals to design, program, control, administer, or manage AI. Among the many predictions, scenarios, and assumptions, what is certain is that AI has the potential to transform skill needs, career opportunities, and the distribution of workers across industries and professions in both developed and developing countries (Frank et al., 2019; Felten et al., 2019; Carbonero et al., 2023).

Dewalska – Opitek et al. (2024, pp. 33-52) in their study published in the *European Research Studies Journal* identified concerns of Generation Z towards AI regarding privacy, algorithm bias, AI replacing jobs, over-reliance on AI by humans, as well as

ethical dilemmas and the impact of AI on the economy. Faruk *et al.* (2023, pp. 1-8) emphasize that the emergence of ChatGPT as a generative AI tool has revolutionized the existing educational programs, introducing unprecedented changes. In this regard, according to the authors, it is extremely important to further investigate the factors influencing the acceptance or rejection of ChatGPT services, among others, by currently studying Generation Z for their further educational purposes.

4.4 Economic and Social Effects of AI Implementation in Enterprises

Taking all of the above into account, it is also worth focusing on the possible economic and social effects of implementing AI in enterprises. Among the potential and predicted effects of using AI in organizations, we can mention:

- Customer service automation development through chatbots and virtual assistants;
- Replacing logistics warehouse workers with robots;
- Marketing personalization through data analysis development;
- Automation of recruitment processes;
- Increased efficiency in the agricultural sector through intelligent crop management systems;
- Development of autonomous vehicles used in urban transport;
- Automation in retail sales - stores without cashiers;
- Development of AI use in medical or veterinary diagnostics;
- Replacing banking employees involved in financial risk analysis with AI.

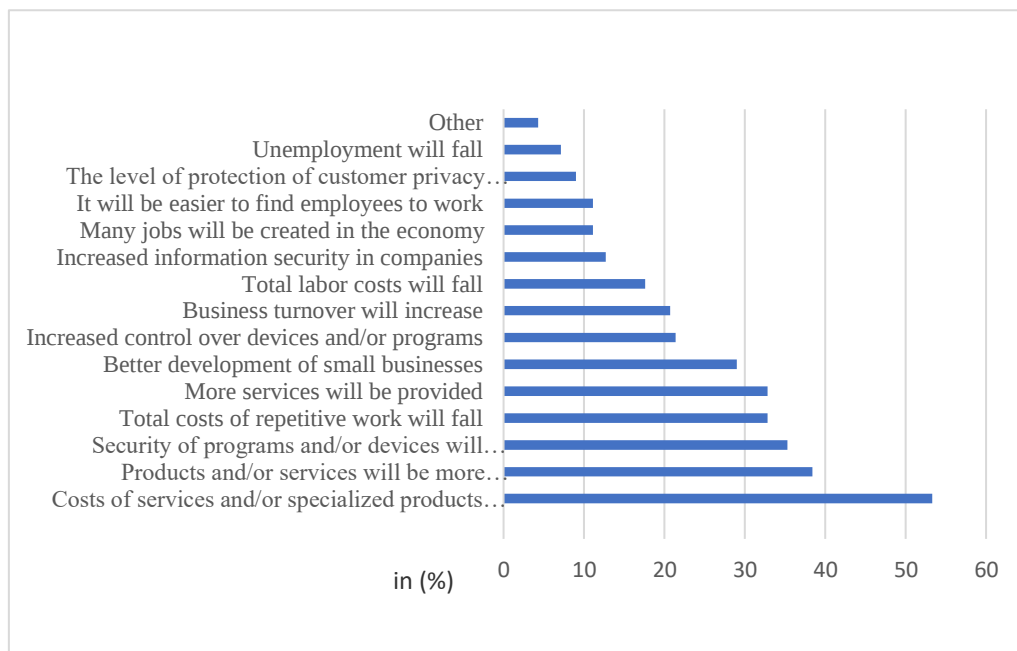
Generation Z's expectations regarding AI development focus on economic efficiency, especially in terms of reducing costs and personalizing services. Among the most frequently indicated benefits, Generation Z sees a decrease in the costs of acquiring specialist services and products. This aspect was indicated by 53.3% of respondents. Respondents expect that AI development will significantly reduce costs, which is related to the efficiency of AI technology.

Respondents also drew attention to the decrease in the total costs of repetitive work and the possibility of providing a larger number of services. As many as 32.8% of Generation Z respondents point to the potential benefits related to automation and efficiency. Another benefit most frequently indicated by 38.4% of respondents was the personalization of products and services. Generation Z believes that artificial intelligence will lead to more tailored products and services, which indicates an improvement in the quality of the products offered.

Generation Z also indicates that thanks to AI, smaller companies will have the opportunity to develop. Only 11.1% believe that artificial intelligence will make it easier to find a job or employees, and only 7.1% believe that unemployment will

decrease. Thanks to the development of AI, only 11.1% of respondents see the possibility of creating new jobs (Figure 4).

Figure 4. Expectations related to the development of artificial intelligence in the opinion of respondents



Source: Own elaboration.

The above potential effects of using AI in enterprises may, in the long term, contribute to the automation of work and reduction of operating costs, the creation of new jobs in the technology sector, an increase in income inequality, an improvement in the quality of goods and services, the optimization of decision-making processes, an increase in the productivity of economies, changes in professional structures, an increase in the innovativeness of enterprises (Cockburn *et al.*, 2019, pp. 115-148), an increase in social concerns about ethics and privacy, and an impact on local communities (Dirican, 2015, pp. 564-573).

5. Conclusions

Generation Z sees both the benefits and challenges of using AI in the digital economy. The survey results indicate that Generation Z is open to technological developments, but not in all areas, especially in the context of trust in decisions made by AI systems. This requires further education and transparency of the procedures, legal regulations, etc. Key findings:

Most Generation Z respondents stated that artificial intelligence has a significant impact on their lives. They see its potential in personalizing services and reducing costs in various industries, including trade, logistics, and financial services. At the same time, however, concerns were identified regarding the security of the technologies used, data confidentiality, and privacy, which is a key challenge for public decision-makers.

The research confirmed concerns about digital unemployment, which, in the opinion of over half of Generation Z respondents, may become a serious economic and social problem. At the same time, respondents note the opportunity for market development and the emergence of new professions and the adaptation of society to the new situation.

Generation Z's trust in artificial technology is selective and depends on the area of its application. Generation Z expressed the greatest doubts in the context of medical and legal services. This indicates the need to build better communication and education in this area.

Respondents indicated the key importance of legal regulations and personal data protection as the most important elements of the safe implementation of AI technology. The lack of such regulations limits trust in technology and may delay its implementation.

The study allowed for the verification of hypotheses. The first hypothesis was confirmed. The respondents believe that AI is beneficial, but it is worth emphasizing that they are also aware of the risks associated with it. Hypotheses formulated as *„The development of artificial intelligence in sectors such as trade, finance and health will bring tangible economic benefits to companies, increasing their competitiveness”* and *„As a result of the implementation of artificial intelligence in various industries, there will be a change in the labor market, where certain professions will be automated, and at the same time new jobs will appear requiring new competences”* have been confirmed as well.

The use of AI has also a positive impact on respondents' purchasing decisions, but it is worth emphasizing that Generation „Z” has great concerns about trusting technology. Which seems to be positive in the context of young people's awareness of the dangers that may appear online.

6. Recommendations

Raising public awareness of the functioning and benefits of AI is essential, which can help build greater trust. Further analyses are needed to accurately estimate the impact of AI on employment and create strategies for adapting to new conditions. It is considering the development of international regulatory standards for AI, particularly in the areas of data protection and algorithmic accountability.

Research on the impact on the labor market: The presented research makes an important contribution to the consideration of the social and economic consequences of AI from the perspective of the youngest generation of professionally active people. The results can be the basis for further legislative, educational and implementation activities that will support the effective use of AI in a responsible and sustainable manner.

References:

- Agrawal, A., Gans, J.S., Goldfarb, A. 2019. Artificial Intelligence: The Ambiguous Labor Market Impact of Automating Prediction. *Journal of Economic Perspectives*, 33(2), 31-50. DOI: 10.1257/jep.33.2.31.
- Ali, Z.A., Zain, M., Pathan, M.S. 2024. Contributions of artificial intelligence for circular economy transition leading toward sustainability: an explorative study in agriculture and food industries of Pakistan. *Environ Dev Sustain*, 26, 19131-19175. <https://doi-org-100075f4j0065.han.bg.sggw.pl/10.1007/s10668-023-03458-9>.
- Aly, H. 2022. Digital transformation, development and productivity in developing countries: is artificial intelligence a curse or a blessing? *Review of Economics and Political Science*, 7(4), 238-256. <https://doi.org/10.1108/REPS-11-2019-0145>.
- Ayuni, R.F. 2019. The online shopping habits and e-loyalty of Gen Z as natives in the digital era. *Journal of Indonesian Economy and Business*, 34(2), 168.
- Balsmeier, B., Woerter, M. 2019. Is this time different? How digitalization influences job creation and destruction. *Research Policy*, Elsevier, vol. 48(8).
- Biener, C., Waeber, A. 2024. Would I lie to you? How interaction with chatbots induces dishonesty. *Journal of Behavioral and Experimental Economics*, 112, 102279.
- Carbonero, F., Davies, J., Ernst, E. 2023. The impact of artificial intelligence on labor markets in developing countries: a new method with an illustration for Lao PDR and urban Viet Nam. *J Evol Econ*, 33, 707-736. <https://doi.org/10.1007/s00191-023-00809-7>.
- Cockburn, I.M., Henderson, R., Stern, S. 2019. The Impact of Artificial Intelligence on Innovation: An Exploratory Analysis. *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans and Avi Goldfarb. Chicago: University of Chicago Press, 115-148. <https://doi.org/10.7208/9780226613475-006>.
- Dewalska-Opitek, A., Witczak, O., Szostak, A., Dziura, M., Wroniszewska-Drabek, B. 2024. Generation Z's trust toward artificial intelligence: attitudes and opinions. *European Research Studies Journal*, 27(S3), 33-52.
- Dirican, C. 2015. The impacts of robotics, artificial intelligence on business and economics. *Procedia-Social and Behavioral Sciences*, 195, 564-573.
- Duch, W. 1997. *The Fascinating World of Computers*. Nakom Publishing House
- Faruk, L.I.D., Rohan, R., Ninrutsirikun, U., Pal, D. 2023. University Students' Acceptance and Usage of Generative AI (ChatGPT) from a Psycho-Technical Perspective. In: *Proceedings of the 13th International Conference on Advances in Information Technology*, pp. 1-8.
- Felten, E.W., Raj, M., Seamans, R. 2019. The occupational impact of artificial intelligence: Labor, skills, and polarization. *NYU Stern School of Business*.
- Frank, M.R.D., Bessen, J.E., Brynjolfsson, E., Cebrian, M., Deming, D.J., Rahwan, I. 2019. Toward understanding the impact of artificial intelligence on labor. *Proceedings of the National Academy of Sciences*, 116(14), 6531-6539.

- Fransiska, M. 2023. Face the Challenge: Adaptation of Shopping Habits in the X Generation a Study of the Happy Fresh Shopping Application. *Riwayat, Educational Journal of History and Humanities*, 6(4), 2924-2929.
- Gibilisco, S. 2001. Teach yourself electricity and electronics.
- Gibilisco, S. (Ed.). 1994. The McGraw-Hill illustrated encyclopedia of robotics & artificial intelligence. McGraw-Hill, Inc.
- Gillani, N., Eynon, R., Chiabaut C., Finkel, K. 2023. Unpacking the 'Black Box' of AI in Education. *Educational Technology & Society*, 26(1), 99-111.
- Holmes, W., Bialik, M., Fadel, C. 2019. Artificial Intelligence in Education. Promise and Implications for Teaching and Learning. Center for Curriculum Redesign ISBN: 978-1794293700.
- European Commission. 2020. White Paper on Artificial Intelligence A European approach to excellence and trust. Retrived from: <https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:52020DC0065>.
- OECD. 2024. International Conference on AI in Work, Innovation, Productivity, and Skills. Retrived from: https://www.oecd-events.org/ai-wips2024?iw_mailid=34b47b95-f8a7-ef11-88cf-6045bd903ca2&iw_scope=Event.
- Hwang G.J., Chien S.Y. 2022. Definition, roles, and potential research issues of the metaverse in education: An artificial intelligence perspective. *Computers and Education: Artificial Intelligence*, 3. <https://doi.org/10.1016/j.caeai.2022.100082>.
- Horin, N., Kacperska, E., Łukasiewicz, L. 2025. The role of artificial intelligence in online shopping and trust (Paliszkiewicz Joanna, Gołuchowski Jerzy (ed.): Trust and Artificial Intelligence: Development and Application of AI Technology, Routledge. DOI:10.4324/9781032627236.
- Kelly III, J.E. 2016. Computing, cognition and the future of knowing. IBM Research: Cognitive Computing, IBM Corporation, New York.
- Koch, T., Windsperger, J. 2017. Seeing through the network: Competitive advantage in the digital economy. *Journal of Organization Design*, 6(1), 6.
- Kurzweil, R. 1999. The Age of Spiritual Machines. Books Penguin.
- McCarthy, J. 2007. What is Artificial Intelligence? Retrived from: jmc.stanford.edu/articles/whatisai/whatisai.pdf.
- Muster, R. 2020. Generation "Z" in the modern labor market in the opinions of employers. *Humanization of work*, no 1, pp. 131-146.
- Panasiuk, A. 2022. Intelligent MarTech technologies as support for marketing departments in the e-commerce industry and consumer experience, *Academy of Management, Faculty of Management, Białystok University of Technology*, vol. 6, no. 3, 147-162. DOI:10.24427/az-2022-0036.
- Roberts, H. 2024. Digital sovereignty and artificial intelligence: a normative approach. *Ethics and Information Technology*, Volume 26, Issue 4, Article number 70. doi: 10.1007/s10676-024-09810-5
- Rong, K. 2022. Research agenda for the digital economy. *Journal of Digital Economy*, 1(1), 20-31.
- Rózanowski, K. 2007. Artificial Intelligence Development, Opportunities and Threats. *Scientific Papers of the Warsaw School of Computer Science*, no 2(2), pp. 109-135.
- Schwab, K., Malleret, T. 2020. Covid -19: The Great Reset. World Economic Forum.
- Skowronek-Mielczarek, A. 2021. Digital economy and the functioning of modern enterprises on the Polish market. *Economic Sciences*, no 33, pp. 23-36.
- Sose, A., Tascon, N., Viemose, A. 2023. Taxation of the digital economy. South Centre/Geneva Graduate Institute. Retrived from: <https://www.southcentre.int/wp->

- content/uploads/2023/11/SC_IHEID_report_Taxation-of-the-Digital-Economy_EN.pdf.
- Sturgeon, J. 2019. Upgrading strategies for the digital economy. *Global Strategy Journal*, Wiley, vol. 11(1).
- Sun, Z., Che, S., Wang, J. 2024. Deconstruct artificial intelligence's productivity impact: A new technological insight. *Technology in Society*, 102752.
- Świerkosz-Hołosz, M. 2016. Generation Z Enters the Workforce. *Society and Education. International Humanities Studies*, 2(21), pp. 439-447.
- Wang, W. 2021. How has the fashion industry reacted to Gen z's completely different consumption concepts and shopping habits. *Academic Journal of Humanities & Social Sciences*, 4(10), 72-80.
- Wang, X.W., Umar, M., Khaddage-Soboh, N. 2024. From innovation to impact: unraveling the complexities of entrepreneurship in the digital age. *Int Entrep Manag J.*, 20, pp. 3207-3221. <https://doi-10org-100075f4j0065.han.bg.sggw.pl/10.1007/s11365-024-00999-x>.
- Webb, M. 2019. The Impact of Artificial Intelligence on the Labor Market. Retrived from: <https://ssrn.com/abstract=3482150>, DOI: <http://dx.doi.org/10.2139/ssrn.3482150>.
- WEF. 2020. The Future of Jobs Report 2020. World Economic Forum. Retrived from: https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf.
- Wu, B., Ren, K., Fu, Y., He, D., Pan, M. 2024. Institutional investor ESG activism and green supply chain management performance: Exploring contingent roles of technological interdependences in different digital intelligence contexts. *Technological Forecasting and Social Change*, 209, 123789.
- Yang, M.J., Zhu, N. 2024. Online public opinion attention, digital transformation, and green investment: A deep learning model based on artificial intelligence. *Journal of Environmental Management*, 371, 123294.
- Zarifhonarvar, A. 2023. Economics of ChatGPT: a labor market view on the occupational impact of artificial intelligence. *Journal of Electronic Business & Digital Economics*, Vol. 3 No. 2, pp. 100-116. <https://doi.org/10.1108/JEBDE-10-2023-0021>.
- Żarczyńska-Dobiesz, A., Chomątowska, B. 2014. Generation "Z" on the labor market - challenges for human resources management. *Scientific Works of the University of Economics in Wrocław*, (350).