Nikola Drašković[a]
Krešimir Žnidar[b]
Vanja Vejzagić[c]

Exploring the AI Landscape: Perceptions of Economic Impacts and Ethical Dilemmas Among Generation Z

Abstract

The purpose of this study is to explore Generation Z students' perceptions and attitudes of AI technology, focusing on its impact on education, the economy, labour market, and ethical considerations. The research employs a qualitative design using focus group discussions with Generation Z students from two universities in Croatia. Thematic analysis was utilized to identify and analyse patterns within the data. The findings reveal a predominantly positive attitude towards AI, highlighting its efficiency and productivity benefits, especially in academic contexts. However, students also expressed significant concerns regarding the accuracy, reliability, and ethical implications of AI, emphasizing the need for human oversight and data protection measures. The study identifies major concerns about job displacement due to AI and the necessity for continuous learning to stay relevant in an AI-driven job market. These insights underline the importance of balanced AI adoption, integrating human judgment, and ethical considerations to maximize benefits while mitigating risks. The primary limitation of the study is its relatively small and geographically specific sample size, which may limit the generalizability of the findings. Future research should include larger, more diverse samples and quantitative methods to validate and extend these insights. This study contributes to the literature by providing into Generation Z's attitudes towards AI within the Croatian context, highlighting the need for comprehensive AI literacy programs and regulatory frameworks to ensure responsible AI development and deployment.

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[a] N. Drašković, Ph.D., Algebra Bernays University, Zagreb, Croatia (e-mail: nikola.draskovic@algebra.hr).
[b] K. Žnidar, Ph.D., Algebra Bernays University, Zagreb, Croatia (e-mail: kresimir.znidar@algebra.hr).
[c] V. Vejzagić, Ph.D., RIT Croatia, (e-mail: vanja.vejzagic@croatia.rit.edu). The paper was received on 18.07.2024. It was accepted for publication on 27.12.2024.

1. INTRODUCTION

One of the most important events that marked the recent years certainly took place when in November 2022, OpenAI introduced its model of generative artificial intelligence (GenAI) commercially called ChatGPT. Thanks to advanced capabilities, ChatGPT quickly gained a large number of users, and in parallel, other AI-based tools began to appear. GenAI, characterized by the ability to create new, original content, enables increased productivity in some industries, but also encourages innovation in areas such as cybersecurity, finance and the creative arts (Gupta et al., 2023; Farina et al., 2024). On the other hand, the advanced capabilities of AI technology also raise certain ethical dilemmas due to the risk of its misuse in areas such as education or IT (Shimizu et al., 2023; Nhavkar, 2023). After initial hesitation, a number of companies embraced AI-based tools to increase productivity, but this ultimately led to these companies starting to lay off employees whose work was partially or completely replaced by new technology (Constantz, 2024; Gul, 2022; Mirbabaie et al., 2022). On the other hand, the development of technology has driven demand for workers who possess the skills needed to use AI technology (Alekseeva et al., 2021). AI enables process automation and increases worker productivity, but the real question is the long-term impact on AI on the economy, employment and fair distribution of the benefits brought by this technology Kenthapadi et al., 2023; Zohuri, 2023).

The aim of this paper is to explore how Generation Z (or Gen Z) students experiences AI technology from the aspect of impact on education, economy, labour market, but also in the context of ethical issues and possible abuses. Members of Gen Z are typically considered digital natives, i.e. a generation that grew up in a world where access to the Internet, smartphones and social media is pervasive, making various digital platforms an integral part of their everyday life (Hameed & Mathur, 2020; Upadhyay, 2022). Unlike previous generations that have had to adapt to the digital age, Generation Z members have been immersed in it since birth, affecting their communication preferences, learning styles, and ways of consuming information and entertainment (Munsch, 2021).

2. THE IMPACT OF AI ON MODERN SOCIETY AND ECONOMY

Artificial intelligence has emerged as a transformative force in the global economy, influencing productivity, job markets, and economic growth (Sarker, 2022). AI is reshaping traditional business models and providing ground for technology-led innovations (Apsilyam et al., 2024). For example, following the emergence of ChatGPT, public excitement encouraged the development of new software applications, and many developers seized the opportunity to create their own solutions based on AI technology (Martin, 2023). Furthermore, various media reports and scientific studies have suggested the superiority of AI-based tools over human skills in specific areas, such as the detection of cancerous tissues (Gregory, 2023; Boyle, 2024).

By optimizing decision-making processes and creating new business models, AI contributes to economic expansion and efficiency (Gao and Feng, 2023). For instance, AI technologies are being used to improve manufacturing processes, optimize supply chains, and develop new products and services, thereby boosting productivity across various industries (Furman and Seamans, 2019). Moreover, AI's role in economic growth is particularly evident in the context of Industry 4.0 (Raju and Sumallika, 2023). This technological revolution integrates AI with advanced manufacturing and industrial processes, leading to the creation of new industries and job opportunities (Somjai et al., 2020). According to a recent study by Gao and Feng (2023), there is a significant positive relationship between AI penetration, or the extent to which artificial intelligence technologies are integrated and utilized within firms, and the total factor productivity (TFP), or efficiency. The study finds that every 1% increase in AI penetration leads to a 14.2% increase in TFP of firms.

In emerging economies, AI has the potential to significantly impact small and medium enterprises (SMEs) (Sarker, 2022). AI in marketing, for example, can enhance financial performance of a company and improve customer relations and internal business processes, contributing to overall SME performance (Huang and Rust, 2021; Patel et al., 2023; Almahairah, 2023). This

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emphasizes the importance of AI adoption for improving business efficiency and competitiveness in these economies (Abrokwah-Larbi and Awuku-Larbi, 2023).

Another important aspect of AI in the context of society and economy is its impact on the labour market. While AI can create new job opportunities, particularly in high-tech and innovative sectors, it also poses a risk of job displacement, especially for roles that involve repetitive tasks (Peltz and Street, 2020; Sen and Patel, 2023). Studies (Somjai et al., 2020; Li and Dou, 2021; Raju and Sumallika, 2023; Grubaugh and Levitt, 2023) have shown that AI-powered automation is displacing human labour in certain functions, leading to potential job cuts in some sectors while creating job increases in others. Policies aimed at reskilling workers can mitigate the negative impacts of AI on employment and ensure that workers are prepared for new types of jobs created by AI technologies (Sharma et al., 2023).

3. ETHICAL AND LEGAL ASPECTS OF AI

Despite the enthusiasm sparked by the emergence of AI-based technology and tools, there are also significant concerns regarding their ethical and policy implications. These considerations include a wide range of issues, including privacy, bias, accountability, transparency, and the societal impact of AI technologies (Peltz and Street, 2020; Tiwari, 2023; Camilleri, 2023; Farina et al., 2024).

Shen (2023) has identified three main areas related to the ethical challenges of AI:

- Vulnerability in machine learning: This includes issues like algorithmic black boxes, data privacy concerns, and inherent biases in AI algorithms, which pose significant ethical risks.
- Human vulnerability: Ethical challenges such as the misuse of AI, job displacement due to automation, and the over-dependence on AI, which can lead to privacy infringements and a reduction in critical thinking skills.

- Alienation of the human-machine relationship: The increasing autonomy of AI challenges human dominance and raises ethical questions about the evolving human-AI relationship.

Commonly, GenAI models are trained on large amounts of data to provide better response to user queries. This data can include sensitive and personal information, raising concerns about privacy breaches, data misuse, and alignment with relevant regulations, such as the EU General Data Protection Regulation (GDPR) (O'Flaherty, 2024). For instance, in the medical field, GenAI used for imaging analysis must handle patient data with utmost care to avoid compromising privacy (Musalamadugu & Kannan, 2023). Moreover, the lifecycle perspective on privacy and copyright protection in generative AI highlights the need for integrated approaches to ensure data integrity and compliance with privacy laws (Zhang et al., 2024).

GenAI models can inherit biases present in their training data, leading to discriminatory outcomes, particularly in sensitive areas such as hiring, law enforcement, and healthcare (Singh, 2024). It is essential to ensure that AI systems are free from bias by careful data curation and the implementation of fairness algorithms to mitigate these risks (Kenthapadi et al., 2023). Furthermore, generative AI can creative realistic but fake content (e.g. visuals, video or audio), which could lead to the spread of misinformation and consequently the erosion of trust in digital media. This has prompted discussions on the ethical guidelines and legal frameworks needed to govern the use of AI-generated content (Williams, 2024). However, the legal framework should balance the need to protect individual rights and the benefits of AI, and it should be able to keep pace with the rapid advancements in AI technology (Stix, 2022; Li et al., 2023).

A particular challenge represents the use of AI-based technology in the context of self-driving vehicles. Autonomous vehicles must be programmed to make decisions in complex situations, such as the classic "trolley problem," where the vehicle must choose between two harmful outcomes (Evans et al., 2020). Furthermore, autonomous vehicles must make impar-

tial decisions regardless of the characteristics of the people involved, which makes addressing biases in AI training data essential to prevent discriminatory outcomes (Fernández-Llorca & Gómez, 2023). One of the most pressing legal issues is determining who is responsible when an autonomous vehicle causes harm. The rapid development of autonomous driving technology outpaces the establishment of regulatory standards. Traditional liability frameworks, which typically assign fault to human drivers, are inadequate for autonomous systems. Legal scholars argue for the need to establish clear guidelines for assigning liability, whether it falls on the manufacturer, software developer, or another party (Lawlor, 2021; Croitoru et al., 2022). The debate over the legal personality of AI also intersects with these liability issues. Assigning legal personality to AI could provide a framework for addressing legal liability, but it also raises deep ethical and philosophical questions about the nature of personality and action (Milinkovic, 2021).

4. GENERATION Z AND AI BASED TECHNOLOGY

Generation Z has been surrounded by advanced technology from an early age, making them naturally comfortable with AI (Huang et al., 2023). This generation views AI as a fundamental part of their daily lives, enhancing convenience and efficiency in various tasks (Suresh et al., 2023). When compared with other generations in the context of higher education, Gen Z students are enthusiastic and optimistic about the potential of AI, while their Gen X and Millennial teachers are more cautious, indicating a notable generation gap in the acceptance and use of GenAI technologies (Chan & Lee, 2023). However, this acceptance of AI-based technologies might be happening without their full understanding of the technology's potential benefits and drawbacks for themselves and society (Katyal, 2019; Jeffrey, 2021).

Generation Z members have positive attitudes towards AI devices, influenced by factors such as hedonic motivation and frequent smartphone usage (Vitezić & Perić, 2021), but also influenced by technological factors and individual personality (Na et al., 2022). Furthermore, their positive attitudes towards AI in e-learning is influenced by factors like perceived ease of use and perceived usefulness, ultimately enhancing their overall attitude and satisfaction with e-learning (Kashive et al., 2021). According to the study by Suresh et al. (2023), Gen Z users appreciates the personalization and efficiency in the context of e-commerce. Furthermore, the findings indicate that perceived usefulness and perceived ease of use significantly influence AI adoption among Gen Z. Trust also plays a positive role, although its impact is less pronounced. Interestingly, technology literacy was found to negatively impact AI adoption, suggesting that more technologically literate individuals may have higher standards and expectations for AI systems, leading to greater scrutiny and scepticism (Suresh et al., 2023).

The 2024 Gen Z and Millennial Survey by Deloitte (2024) explores the attitudes and perceptions of over 22,800 respondents from 44 countries. According to the survey, Gen Z shows mixed emotions towards GenAI, with uncertainty being the most commonly reported feeling, followed closely by excitement and fascination. The survey finds that positive perceptions of GenAI increase with hands-on experience. Approximately a quarter of Gen Z respondents use GenAI at work regularly, reporting feelings of excitement and trust. These frequent users believe GenAI can free up their time, improve their work processes, and enhance work/life balance. Interestingly, the survey reveals notable gender differences in perceptions of GenAI. Women are more likely to feel uncertain and less comfortable working alongside AI technologies compared to men. This discomfort is reflected in their lower participation rates in GenAI-related training and their more significant concerns about job displacement.

Furthermore, there is a growing acceptance of AI-powered mental health virtual assistants among various demographics, with Gen Z showing a relatively high level of acceptance compared to older generations (Alanzi et al., 2023). This acceptance is driven by several factors, including technological familiarity, perceived usefulness, and ease of use. A study by Al-Sharafi et al. (2023) investigates on a sample of Generation

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Z the roll of AI in achieving environmental sustainability. As the study reports, respondents recognize AI's potential to enhance productivity and environmental sustainability. The study finds that Gen Z's use of AI products is positively associated with pro-environmental behaviours. AI enables efficient resource management, waste reduction, and energy conservation. Furthermore, AI products that are user-friendly and require minimal effort to operate are more likely to be adopted (Al-Sharafi et al., 2023).

Generally, reviewed studies reported positive attitudes of GenZ on AI. However, there are also some concerns. For example, GenZ students are concerned about the accuracy of AI-generated information, privacy issues, and ethical implications such as plagiarism and over-reliance on technology (Chan & Hu, 2023). Studies are also reporting about the Gen Z's concerns over the potential misuse of AI in fields such as marketing (Jeffrey, 2021). Lo et al. (2024) conduct a comprehensive systematic review to understand ChatGPT's impact on student engagement. While analysing 72 empirical studies, review findings suggest that ChatGPT significantly influences students' behavioural engagement. The AI tool's ability to provide immediate responses and act as a collaborative partner was noted to improve study habits and task completion rates. However, the review also highlighted a significant concern over the potential for academic dishonesty, as some students misused ChatGPT to complete assignments, which could undermine the educational process. On the contrary, concerns about privacy, confidentiality, and job displacement due to AI could led to anxiety and negative emotions. Furthermore, concerns about overreliance on AI leading to reduced critical thinking skills were also reported.

Taking into consideration aims of this paper, the literature review findings, and the lack of similar studies focused on the Croatian market, the following research questions are developed:

- RQ1: How do Generation Z students perceive generative AI technology?
- RQ2: What are Generation Z students' awareness and understanding of the limitations of AI technology?

- RQ3: What concerns do Generation Z students have about the impact of AI on the labour market and jobs?
- RQ4: How do Generation Z students perceive the potential ethical risks related to the use of AI?

5. RESEARCH DESIGN

Although there is a certain number of quantitative studies investigating the Generation Z acceptance of AI (e.g. Vitezić & Perić, 2021; Suresh et al., 2023; Zulfikasari et al., 2024), there is also a need to utilise qualitative studies to get more comprehensive picture of the topic (Suresh et al., 2023; Toma & Hudea, 2024). Therefore, this study employed a qualitative research design, specifically focus group discussions. The qualitative approach was chosen to gain in-depth insights into the students' views, thoughts, and attitudes towards AI, as it allows for a rich, detailed understanding of the social phenomena under investigation (Creswell, 2014). Qualitative methods are particularly useful in exploring new or complex topics where little prior research exists or more insightful view is needed, as they facilitate the capture of participants' detailed viewpoints (Patton, 2014).

Participants were recruited from two universities in Croatia to ensure a diverse representation of Gen Z students. The inclusion criteria were students aged 18-24 years, currently enrolled in higher education institutions. A total of five focus groups were conducted, with each group consisting of 6-8 participants, which is within the recommended range for focus group research to allow for manageable yet diverse discussions (Krueger & Casey, 2015).

The focus group agenda was semi-structured in a specific sequence to guide the discussion. First, participants were informed about the nature and goals of the research, followed by questions about their general use of technology and their digital literacy. The following section contained questions related to general knowledge about AI and questions that aimed to reveal participants' use of specific tools and occasions when they use these tools. Finally, the last section of the focus group agenda con-

tained questions about the impact of AI tools on participants, the advantages and disadvantages of AI, ethical concerns, and the potential effects of AI in the contexts of different industries and the labour market. An integral version of the focus group agenda is available in the appendix.

The transcriptions were analysed using thematic analysis, a method that involves identifying, analysing, and reporting patterns (themes) within the data (Braun & Clarke, 2006). This method was chosen for its flexibility and suitability for examining different perspectives, highlighting similarities and differences, and generating unanticipated insights.

6. RESEARCH FINDINGS

6.1. Opinion about the AI

Overall, respondents expressed positive opinion about the AI and AI-based technologies. Across the focus groups, participants frequently highlighted how generative AI, such as ChatGPT, can significantly enhance productivity and efficiency in completing academic tasks. For example, some participants mentioned using AI tools to draft essays, generate ideas for assignments, and conduct preliminary research. They appreciated the speed and convenience that AI offers, enabling them to complete tasks more efficiently than with traditional methods:

> "AI tools help me brainstorm ideas quickly and get a rough draft done faster. It saves a lot of time, especially when I have multiple assignments due." [Focus group 3].

Many respondents expressed that AI provides personalized support that caters to their individual learning needs, something that traditional educational resources often lack. For example, some participants discussed using AI to get personalized feedback on their writing, which helps them improve specific areas of their work:

> "Using AI for feedback on my essays is like having a personal tutor who points out my mistakes and helps me learn from them." [Focus group 2].

The round-the-clock availability of AI was another positive aspect noted by respondents. They appreciated that AI tools are always accessible, unlike human tutors or teachers who may not be available outside of scheduled hours. Some participants highlighted how they can access AI tools anytime they need assistance, whether it's late at night or during weekends, which is particularly useful during exam periods or when deadlines are approaching.

Participants found AI technologies to be engaging and innovative, making learning more interesting and interactive. Participants discussed how AI-driven simulations and interactive learning modules make complex subjects more understandable and enjoyable.

Throughout the focus groups, there was a recurring theme of participants being excited about the potential of AI to revolutionize education and other fields. They expressed eagerness to explore new AI applications and stay updated with technological trends:

> "I'm excited about the future of AI and how it can change the way we learn and work. It's amazing to see how much progress has been made." [Focus group 5].

While the overall sentiment towards generative AI is positive, it is important to note that participants also expressed caution regarding potential overreliance on AI and the need for ethical considerations. Some participants expressed concerns about becoming too dependent on AI for tasks that require critical thinking and creativity. They discussed the importance of using AI as a tool to complement their learning rather than as a crutch. Consequently, they emphasized the need to maintain a balance between using AI for assistance and developing their own skills:

> "AI is great for getting started, but I have to make sure I'm not just relying on it for everything. It's important to use my own brain too." [Focus group 2].

6.2. Limitations of AI technology

Participants frequently mentioned concerns about the accuracy and reliability of AI-gener-

ated information, recognizing that AI can sometimes produce incorrect or misleading outputs. For example, they discussed instances where AI tools provided inaccurate information or misinterpreted queries, emphasizing the need to cross-check AI-generated content with other reliable sources:

> "I've noticed that sometimes the information AI gives isn't completely accurate. It's important to verify facts from other sources." [Focus group 2].

Due to the obvious limitations, many respondents highlighted the necessity of human oversight in AI applications to ensure the quality and relevance of the outcomes. Some participants talked about using AI as an initial step in their research or assignments but always involving a human review to correct any errors and add contextual understanding:

> "AI is useful for getting started, but I always double-check its work. A human touch is essential to make sure everything makes sense." [Focus group 1].

Furthermore, there is a clear recognition among participants that AI often struggles with understanding context and nuance, which can lead to oversimplified or inappropriate responses. Sometimes, AI failed to grasp the subtlety of participants'' queries, resulting in generic or irrelevant answers. Additionally, participants expressed awareness of the limitations related to the quality and bias of the data used to train AI models. Some participants discussed how biases in training data can lead to biased outputs, affecting the fairness and objectivity of AI decisions.

> "AI is only as good as the data it's trained on. If the data is biased, the results will be too, which can be problematic." [Focus group 4].

Participants acknowledged that while AI can assist with certain tasks, it lacks the ability to engage in creative and critical thinking like humans. They are aware that AI can help generate ideas but cannot replace the depth of human creativity and critical analysis required for more complex tasks. Participants view AI as a tool to complement rather than replace human abilities, understanding that AI's role is to augment human efforts and not to serve as a substitute. On the other hand, participants emphasized using AI to handle routine tasks, allowing them to focus on more complex and creative aspects of their work.

6.3. AI's impact on the labour market

A common concern among participants is the potential for AI to replace human jobs, particularly those involving repetitive and low-skilled tasks. For example, they discussed the likelihood of AI automating many jobs in sectors such as retail, manufacturing, and customer service, leading to significant job losses:

> "I'm worried that AI will take over many entry-level jobs, making it harder for people to find work. It's a big concern for our future." [Focus group 2].

Participants frequently mentioned the necessity of acquiring new skills and adapting to changing job requirements as AI technologies become more prevalent. They emphasized the importance of lifelong learning and continuous professional development to stay relevant in an AI-driven job market. Nevertheless, there is a concern that while AI might create new job opportunities, the quality and nature of these jobs may change, potentially leading to less job satisfaction and security. Some participants discussed how AI could lead to the creation of more temporary jobs, which often lack benefits and job security.

Participants are also aware of the broader economic implications of AI, including potential increases in income inequality. They talked about how AI could intensify existing economic disparities, with high-skilled workers benefiting the most while low-skilled workers are left behind.

The uncertainty surrounding the future job market is a significant source of anxiety, with participants unsure about which careers will remain viable and which skills will be most valuable. Some of them expressed confusion and

concern about choosing career paths that will be sustainable in an AI-driven economy:

> "It's hard to know what career to choose because the job market is changing so quickly with AI. It's really uncertain." [Focus group 2].

While the concerns about AI's impact on the labour market are significant, some students also recognize the potential opportunities that AI might create. Some participants acknowledged that AI could lead to the creation of new industries and job roles, particularly in tech and innovation sectors. Particularly, students discussed the potential for AI to drive innovation and create new types of jobs that didn't exist before, such as AI ethics consultants and AI maintenance specialists:

> "AI is also creating new opportunities in fields like tech and innovation. We just need to be prepared to take advantage of these new roles." [Focus group 1].

6.4. AI and ethical considerations

Privacy and data security are major concerns among participants, with many expressing apprehension about how their personal data is collected, used, and protected by AI systems. Participants discussed the risks associated with data breaches and unauthorized access to personal information, emphasizing the need for stringent data protection measures. Furthermore, they frequently mentioned concerns about algorithmic bias and the fairness of AI decisions, recognizing that biased data can lead to discriminatory outcomes:

> "AI can be biased if it's trained on biased data, and that can lead to unfair decisions. It's a big issue that needs to be addressed." [Focus group 3].

There is a significant concern about the ethical implications of autonomous AI systems making decisions without human oversight. For example, participants discussed scenarios where AI systems might make critical decisions in healthcare, transportation, finance, or criminal justice, emphasizing the need for human judgment and accountability.

The potential for AI to be misused or deployed for malicious purposes is a major concern among participants. For example, they talked about the risks of AI being used for surveillance, hacking, or spreading misinformation, highlighting the need for regulations to prevent misuse. Furthermore, participants stressed the importance of transparency and accountability in AI systems to build trust and ensure ethical practices. Among participants, there is a consensus that adequate regulation and policy are essential to address the ethical risks associated with AI. Furthermore, they stressed the need for government regulations and industry standards to ensure that AI technologies are developed and used ethically. Some students see the development of ethical AI as a potential competitive advantage for companies, suggesting that ethical practices can enhance brand reputation and consumer trust.

7. DISCUSSION

The findings provide detailed insights into Generation Z's perceptions and attitudes toward AI technology, particularly generative AI, and address the four research questions outlined in the study. Addressing the first research question (RQ1), the results indicate strong support for a generally positive perception of AI among Generation Z students. Participants frequently highlighted the benefits of generative AI, such as ChatGPT, in enhancing productivity and efficiency in academic tasks. They appreciated the speed and convenience offered by AI tools, which allow them to complete assignments more efficiently and with personalized support. This enthusiasm aligns with previous research (Suresh et al., 2023; Vitezić & Perić, 2021) suggesting that AI significantly enhances educational outcomes by providing immediate feedback and personalized learning experiences.

The findings also address the second research question (RQ2). Despite their general enthusiasm, participants were acutely aware of the limitations and potential inaccuracies of AI-generated information. They expressed the necessity for human oversight to ensure the accuracy and relevance of AI outputs, noting instances where AI tools provided incorrect or misleading

information. This awareness reflects a critical engagement with AI, recognizing its role as a complementary tool rather than a replacement for human judgment. This concern aligns with Chan & Hu (2023), who highlighted the risks of overreliance on AI in educational contexts.

Concerning the third research question (RQ3), participants expressed significant concerns about AI's potential to displace jobs, particularly those involving repetitive and low-skilled tasks. This apprehension is consistent with literature on AI and labour market dynamics, which indicates a dual effect of AI on job creation and destruction (Sen & Patel, 2023; Grubaugh & Levitt, 2023). Participants emphasized the importance of acquiring new skills and adapting to changing job requirements to remain relevant in an AI-driven job market. They acknowledged the potential for AI to create new job opportunities but were wary of the quality and security of these jobs, reflecting a pragmatic approach to navigating the evolving employment landscape. Nevertheless, these findings can also contribute to the emerging research on the labour market impacts and human resource management practices in Croatia (Bakotić & Burnać, 2024).

Finally, addressing the fourth research question (RQ4), respondents expressed ethical concerns regarding AI technology. Participants expressed worries about privacy, data security, algorithmic bias, and the potential misuse of AI. They emphasized the importance of strict data protection measures and the need for transparency and accountability in AI systems. These concerns align with broader discussions on the ethical implications of AI (Peltz & Street, 2020; Tiwari, 2023). Participants called for robust regulations and ethical guidelines to ensure the responsible development and deployment of AI technologies, resonating with arguments made by Farina et al. (2024) and Stix (2022) on the necessity of responsible AI governance.

8. CONCLUSION

This study contributes to the growing body of literature on AI by providing a detailed exploration of Generation Z students' perceptions and attitudes towards AI technology, with the specific fo-

cus on the Croatian market. The findings suggest that while Gen Z students are generally positive about the potential benefits of AI, they are also critically aware of its limitations and ethical implications. This dual perspective highlights the need for balanced approaches that maximize the benefits of AI while mitigating its risks.

Policymakers and educational institutions should focus on AI literacy programs integrating technical understanding, critical thinking, ethical awareness, and adaptability into the curriculum. By embedding AI-related topics across various subjects—from foundational AI principles in technology courses to discussions on ethics in humanities and social sciences—educators can help students view AI as a tool for growth and innovation rather than a threat to the labour market. Specifically, institutions could introduce hands-on AI workshops and interdisciplinary projects that encourage students to explore real-world applications, fostering skills that prepare them for the evolving job landscape. Such initiatives can help students navigate the complexities of AI technology and make informed decisions about its use. Furthermore, there is a clear need for robust regulatory frameworks to ensure the responsible development and deployment of AI technologies. These frameworks should address issues such as data privacy, algorithmic bias, and the accountability of AI systems to build public trust and ensure equitable outcomes.

The findings of this study have important implications for managers and organizations. Given Generation Z's positive attitude towards AI, businesses should consider higher degree of integration of AI tools into their operations to enhance productivity and meet the expectations of this tech-savvy demographic. Moreover, companies should invest in continuous learning and development programs to equip their workforce with the necessary skills to thrive in an AI-driven market. Ethical considerations should also be at the forefront of AI deployment strategies, with robust data protection measures and transparent practices to address privacy concerns and mitigate bias.

Nevertheless, there are several limitations that should be acknowledged. First, the sample size

was relatively small and limited to students from two universities in Croatia, which may not be representative of the broader Generation Z population. This geographic and cultural specificity could limit the generalizability of the findings to other contexts. Additionally, the qualitative research design, while useful for gaining in-depth insights, may be subject to biases related to participant self-selection and the subjective nature of focus group discussions. Future research could benefit from larger, more diverse samples and the inclusion of quantitative methods to validate and extend the findings of this study. Finally, the rapidly evolving nature of AI technology means that perceptions and attitudes may change over time, suggesting a need for ongoing research to capture these dynamics.

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Appendix – the focus group research agenda

1. *Introduction*
   - Basic information about the research (perception of AI among Gen Z)
   - Getting to know the respondents (name, age, what is their occupation)

2. *General questions about technology*
   - What does technology mean to you in general?
   - What do you mean by digital technology?
   - How does being surrounded by this digital technology reflect your digital literacy? Do you think you are digitally literate?
   - What do you think reflects digital literacy? Do you think there is any significant difference between different generations?

3. *An overview of AI technology and AI tools usage*
   - What do you think AI is? What are your first associations related to AI, or artificial intelligence?
   - Describe your experiences using AI technology. Can you say for yourself that you use AI? How do you perceive the role of AI in your daily life?
   - What specific AI tools do you use? (followed by questions related to the specific tools respondents mention) How often do you try/use different AI tools?
   - What are the differences between individual AI tools? (focusing on tools respondents reported) What limitations or challenges do you believe are associated with using AI?

4. *Impact of AI tools*
   - How successful are AI tools in what they offer? Have you encountered situations where AI generated inaccurate or misleading information? How did you handle it?
   - Do you see that these AI tools are in any way affecting your education or work at the moment?
   - Advantages and disadvantages of AI technology exercise: Participant should be divided into two groups; one should be

pro-AI, and the other should be against the AI technology (potential topics: transparency, manipulation, supremacy over people, privacy, ethics, impact on the labour market, economic inequality, development of AI as a weapon, AI and making life easier)

- Will AI become superior to the human species?

- In which industries can we expect the potential benefit of AI technology? How will this potential benefit affect jobs and employment? Do you believe AI will create new job opportunities, or do you see it primarily as a replacement technology?

- Are there any industries where AI will not be able to make an impact?

- What ethical concerns, if any, do you have about the widespread adoption of AI? Are there any sources that we trust more about AI? Do you think some can lead you in the wrong direction? How do you distinguish between some kind of misinformation?

- What do you expect would happen with AI in 20 years? (focus on positives and negatives, ethical concerns, labour market, regulation).

Istraživanje AI krajolika: percepcija ekonomskih utjecaja i etičkih dilema među generacijom Z

Sažetak

Cilj ove studije je istražiti percepciju i stavove studenata, pripadnika generacije Z, o tehnologiji umjetne inteligencije, usredotočujući se na njezin utjecaj na obrazovanje, gospodarstvo, tržište rada te etičke aspekte. Studija je bazirana na kvalitativnoj istraživačkoj metodologiji, pri čemu su provedene fokus grupe sa studentima koji su pripadnici generacije Z na dva sveučilišta u Hrvatskoj. Za identifikaciju i analizu obrazaca unutar prikupljenih podataka korištena je tematska analiza. Nalazi otkrivaju pretežno pozitivan stav prema umjetnoj inteligenciji, ističući njezinu učinkovitost i produktivnost, posebno u akademskom kontekstu. Međutim, ispitanici su također izrazili značajnu zabrinutost u vezi s točnošću, pouzdanošću i etičkim implikacijama umjetne inteligencije, naglašavajući potrebu za ljudskim nadzorom i mjerama zaštite podataka. Među ispitanicima je identificirana i visoka razina zabrinutosti vezane uz rizik da bi umjetna inteligencija mogla ugroziti određena zanimanja. Nadalje, svjesni su potreba za kontinuiranim učenjem kako bi se usvajala relevantna znanja potrebna na tržištu rada na koje će sve veći utjecaj imati umjetna inteligencija. Ove spoznaje naglašavaju važnost uravnoteženog pristupa pri usvajanju tehnologija baziranih na umjetnoj inteligenciji, uz vođenje računa o nadzoru tehnologije te etičkih aspekata. Ova studija ima i određena ograničenja. Primarno ograničenje studije je relativno mala i geografski specifična veličina uzorka, što može ograničiti generalizaciju rezultata. Buduća istraživanja trebala bi uključivati veće, raznolikije uzorke te kvantitativnu istraživačku metodologiju kako bi se potvrdili i proširile spoznaje do kojih je došla ova studija. Nadalje, ova studija doprinosi ukupnom teoretskom okviru kroz implementaciju stavova generacije Z o umjetnoj inteligenciji u kontekstu Hrvatske, naglašavajući potrebu za sveobuhvatnim programima naobrazbe o umjetnoj inteligenciji te stvaranjem regulatornih okvira kako bi se osigurao odgovoran razvoj i implementacija ove tehnologije.

Ključne riječi: Hrvatsko gospodarstvo, percepcija umjetne inteligencije, ekonomski utjecaj umjetne inteligencije, etičke implikacije, generacija Z, tržište rada