Student perspectives on artificial intelligence in Industry 5.0

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Abstract. Objective*: Adopting Industry 5.0 is critical for developing a competitive advantage and achieving economic growth in today's rapidly changing business environment, which is characterized by constant technical breakthroughs. The aim of this study is to explore student perspectives on the role of artificial intelligence (AI) in industry 5.0.* ***Method****: This study used a questionnaire-based survey method to collect data on students' perceptions of artificial intelligence (AI) in the context of Industry 5.0. The questionnaire included multiple-choice and Likert scale questions aimed to extract respondents' perspectives and attitudes on various areas of AI and its impact on industry. The questionnaire was given electronically to students with a variety of academic backgrounds and levels of technological ability. The study sample includes 340 students from the European University of Tirana. The hypotheses are tested using a 95% confidence interval. To analyze the data, JASP - 0. 18. 3 was used.* ***Results****: Most students predicted that AI would have the greatest impact on the IT industry during the next five years. Students were divided on the influence of innovative technology trends on the work market over the next 5-10 years, with some expecting increased job opportunities and others predicting job automation or elimination. The most significant skills highlighted for IT professionals for the next five years include programming languages, data analysis and management, cloud computing, communication and teamwork, creativity and innovation, and AI/machine learning. The need of retraining and upskilling the workforce to adapt to Industry 5.0 was recognized, emphasizing the necessity for educational and training programs that prepare people for AI-driven industries.* ***Originality****: This study's unique approach is its emphasis on student viewpoints, specifically within the context of Industry 5.0. While studies on AI perceptions among the public or industry experts may exist, the purpose of this study is to fill the gap in the literature by investigating how students, as future professionals and leaders, perceive AI in the emerging landscape of Industry 5.0.*

Keywords*: student perspectives, artificial intelligence, industry 5.0, careers, future jobs, human-machine collaboration*
JEL classification*: L86, O33, I21, J24*

1. Introduction

Industry 5.0 is the next phase of industrial development, defined by the combination of AI, automation, and human-machine collaboration. From purely technological dependence to possibilities offered by collaboration between people and robots, there is a huge shift in the paradigm of industry 5.0, unlike earlier industrial revolutions that focused on machine efficiency and production. Industry 5.0 emphasizes collaboration to improve customer happiness through personalized products and services.

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Unlike previous industrial revolutions, which focused primarily on automation and efficiency (e.g., Industry 4.0's emphasis on IoT, big data, and cyber-physical systems), Industry 5.0 aims to enhance human-centric innovation by integrating human skills and creativity with advanced technologies (Lee, Kao, & Yang, 2014). This paradigm shift introduces a new vision for improving customer satisfaction through personalized products and services, thus creating a more adaptive and sustainable industrial environment (Longo, Padovano, & Umbrello, 2020).

The European Union has been a leader in promoting Industry 5.0, especially through initiatives such as Horizon Europe and the Digital Europe Program, aiming to foster the digital transformation of companies, enhance workforce skills, and encourage innovation (Directorate-General for Research and Innovation, 2023; Directorate-General for Research and Innovation, 2021). A key aspect of this transformation is the use of collaborative robots (cobots) and AI, which work alongside humans to optimize productivity and foster creativity. However, despite these advancements, more research is needed to fully understand the implications of Industry 5.0, especially concerning human-machine collaboration and its effects on innovation and job creation (Ghobakhloo et al., 2024).

Given the rapid development of AI technologies, it is crucial to assess how future professionals, especially students, perceive AI's role in this transformation. Understanding these perceptions is essential for shaping educational programs and workforce development efforts that align with the needs of AI-driven industries. Recent findings suggest that in some contexts, such as India, AI is not only accepted but also viewed as aspirational and authoritative. Kapania et al. (2022) found that users often accept AI decisions unquestioningly, with 79.2% of respondents indicating full acceptance of AI outcomes. This "AI authority" reflects deeper user attitudes such as faith, self-blame, and forgiveness, revealing a heightened tolerance for AI errors and potential societal harm (Kapania, Siy, Clapper, SP, & Sambasivan, 2022). This study explores student perspectives on AI's role in Industry 5.0, focusing on its perceived impact on career prospects and the skills required to succeed in the future job market. The findings aim to inform educational strategies and policy decisions to prepare the workforce for the emerging Industry 5.0 landscape.

2. Literature review

The rapid evolution of technology, particularly Artificial Intelligence (AI), has brought profound changes across numerous industries. According to Rashid and Kausik (2024), AI is revolutionizing sectors such as agriculture, healthcare, education, and manufacturing by enabling automation, enhancing decision-making, and optimizing resource management. Their comprehensive review highlights various AI applications, including machine learning, robotics, natural language processing, and big data (Rashid & Kausik, 2024). These technologies present significant potential for transforming industries, but they also pose challenges, such as ethical dilemmas and economic disruptions. As AI continues to expand, it is critical to develop robust policies that balance innovation with societal needs, ensuring that the benefits of AI are equitably distributed while mitigating risks like technological unemployment and data privacy concerns. AI plays a pivotal role in the tri-dimensional architecture of Industry 5.0, particularly in the technical dimension. The collaboration between humans and intelligent systems enables more flexible, resilient manufacturing processes, with a focus on societal benefits like sustainability. Despite its potential, Leng et al. point out that research on Industry 5.0 remains in its infancy, highlighting the need for future studies to address gaps by focusing on key enablers and barriers, particularly the challenges of integrating human-centric goals with advanced technologies like AI and robotics (Leng, et al., 2022).

The rise of Industry 5.0 reflects a paradigm shift towards human-centric industrial operations. Gamberini and Pluchino (2024) argue that Industry 5.0 focuses on harmonizing technological advancements with social sustainability and sustainable development, thereby redefining work dynamics and career pathways. In contrast to previous industrial revolutions, Industry 5.0 emphasizes the upskilling and reskilling of the workforce, ensuring that workers remain central to industrial progress (Gamberini & Pluchino, 2024). The integration of AI, along with other advanced technologies, calls for equitable training

programs that prioritize worker well-being while maintaining the environmental and social responsibilities of businesses.

The evolution of work in this context has been further analyzed by Kolade and Owoseni (2022) in their study on Employment 5.0. Their systematic review identifies three key theoretical frameworks for understanding the impact of digital transformation: socio-technical systems theory, skill-biased technological change, and the political economy of digital transformation. These perspectives highlight the increasing division of labor between humans and machines, particularly in cognitive and affective domains. They emphasize the need for integrated policies that address both the opportunities and challenges of Industry 4.0 and Industry 5.0, focusing on workforce adaptation through re-skilling, job polarization, and addressing inequalities exacerbated by technological disruptions (Kolade & Owoseni, 2022).

While AI and Industry 5.0 promise exciting opportunities for innovation and growth, they also present significant challenges. The literature calls for value-driven policies that not only foster technological advancement but also ensure social inclusivity and environmental sustainability. Rashid and Kausik (2024) emphasize that future AI research must address ethical concerns and societal impacts, while Gamberini and Pluchino (2024) argue that Industry 5.0 offers a roadmap for a future where human values are central to industrial evolution. Kolade and Owoseni (2022) expand on this by highlighting the importance of political organization and activism in shaping the future of work, suggesting that citizen-workers play a critical role in defining the policies and frameworks that will govern future technological transformations.

The digital transformation of businesses has become essential in today's economic landscape. According to recent Eurostat data (2024), a significant portion of companies within the European Union are embracing digital systems such as Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Business Intelligence (BI). These technologies are pivotal in streamlining business operations, with 49.9% of companies having integrated at least one of these systems into their daily processes. ERP systems are used by 43.3% of businesses, CRM by 22.2%, and BI by 15.3% (Eurostat, 2024). However, technology adoption rates vary based on company size, with larger corporations demonstrating higher levels of integration (Eurostat, 2024).

In parallel, the use of cloud computing has grown substantially, with 45.2% of enterprises in the EU adopting cloud-based services for tasks such as email, data storage, software applications, and even advanced systems like ERP and CRM (Eurostat, 2024). Companies also leverage cloud platforms for development, testing, and deploying business software, allowing for greater scalability and flexibility.

Data analytics is another area gaining traction, with 28.2% of companies performing data analysis internally (Eurostat, 2024). Despite this progress, the integration of artificial intelligence (AI) remains relatively low, with only about 8% of enterprises using AI technologies as of 2023 (Eurostat, 2024). Various AI functionalities are applied, from evaluating written content and machine learning to more advanced uses such as process automation, speech recognition, and object identification.

Despite the low adoption rate, AI's transformative potential in industries is widely recognized. Larger corporations are more likely to invest in AI, primarily due to the high costs and technical challenges associated with implementing these technologies. Technologies such as artificial intelligence (AI), robotics, the Internet of Things (IoT), and big data are being integrated to create more efficient, personalized, and sustainable manufacturing processes (Directorate-General for Research and Innovation, 2021).Companies expect that AI-human interaction can provide numerous benefits in a variety of industries (Elish & Boyd, 2017; Chowdhury, et al., 2023; Al-Surmi, Bashiri, & Koliousis, 2021). Research suggests that AI-human collaboration can enhance productivity, decision-making, and creativity (Elish & Boyd, 2017; Chowdhury, et al., 2023). Companies expect AI, machine learning, big data, and cyber security to drive job development (World Economic Forum, 2023). Despite increasing knowledge of AI, there is currently a gap in its integration into Industry 5.0 (Longo, Padovano, & Umbrello, 2020). At the same time, according to some research, AI is viewed as a threat to the labor market, potentially reducing work opportunities and causing privacy concerns (Giroux, Kim, Lee, & Park, 2022). These concerns influence how students perceive AI's role in Industry 5.0, with some viewing AI as a threat to job security while others see it as a driver of new

career opportunities (World Economic Forum, 2023). Furthermore, students' perceptions of AI are critical, as they represent the future workforce. Idroes et al. (2023) conducted a survey among students from various academic disciplines and educational levels, finding that students generally perceive AI as beneficial to the learning process. However, they also expressed concerns about its limitations, emphasizing the importance of addressing the potential drawbacks while maximizing the educational benefits of AI (Idroes, et al., 2023). Studies indicate that individuals with higher levels of digital skills are less concerned about AI replacing jobs and more optimistic about its potential for innovation (Longo, Padovano, & Umbrello, 2020). This suggests that educational programs should focus on equipping students with the necessary skills to thrive in an AI-driven industrial landscape.

Research questions:

1. How do students perceive AI's impact on career possibilities and the skills required in Industry 5.0?
2. What are the students' concerns related to AI implementation in Industry 5.0?

Hypotheses:

1. H1: Students who believe AI provides a positive impact on job opportunities are more likely to engage in AI-related learning. (α=0.05).
2. H2: Students with higher levels of digital skills are more confident about AI applications in Industry 5.0. (α = 0.05).

3. Methodology and data

This study has used the quantitative method/. A questionnaire was used for data collection. The questionnaire used for this study is divided into several key sections. The first section collects demographic data, such as gender, level of study, and area of study. The second section focuses on students' perceptions of AI in the context of Industry 5.0, using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The third section addresses students' concerns about AI, including ethical considerations such as job displacement and privacy concerns. The final section explores their willingness to engage with AI-related skills and learning. The sample for this study consists of 340 students from the European University of Tirana, encompassing both bachelor's and master's cycles. The sample was selected through an online questionnaire conducted from October 2023 to March 2024. The sample was selected to ensure diversity in terms of gender, study level, and academic discipline. The gender and study-level distributions are presented in Figures 1 and 2, respectively, to show the sample segmentation. Although the sample is relatively large and representative of the student population at this university, the findings are context-specific and may not be easily generalized to all higher education institutions. However, the insights gathered offer valuable perspectives on student perceptions of AI and Industry 5.0, providing a strong foundation for future research. The study offers a snapshot of student attitudes at a pivotal moment in technological advancement, which can serve as a baseline for broader, more diverse studies in the future. Expanding the research scope to include additional institutions and longitudinal approaches would strengthen the applicability of these findings while preserving the robustness of the current conclusions. JASP 0.18.3.0 was used for data analysis. The 95% confidence interval was used for hypothesis testing.

Reliability coefficient Cronbach's α=0.900 (>0.7) (Table 1), so the data are valid for use in the study.

Table 1. Frequentist Scale Reliability Statistics

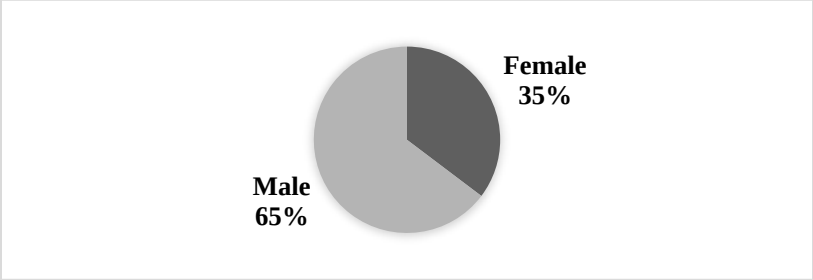
Estimate	Cronbach's α
Point estimate	0.900

Source: Author's creation.

4. Research results and comments

The majority of the sample consists of male students (65%), with females making up 35% (Figure 1). This imbalance reflects the gender gap often seen in technology-oriented fields of study, particularly within the context of higher education institutions in Albania. Understanding this division is crucial, as gender may influence perceptions of AI's impact on workforce dynamics and career prospects.

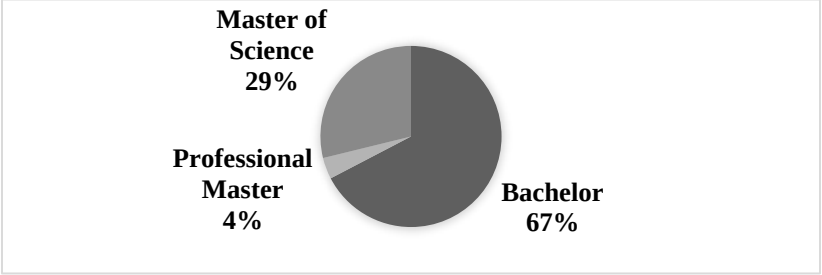
Figure 1. Student Distribution by Gender



Source: Author's own representation.

Approximately 67% of the respondents are bachelor's students, while the remaining 33% are master's students (figure 2). This distribution ensures a balanced view across different levels of academic experience, potentially influencing the perceptions of AI. Master's students, who have more exposure to advanced topics, may provide more informed opinions regarding AI and Industry 5.0.

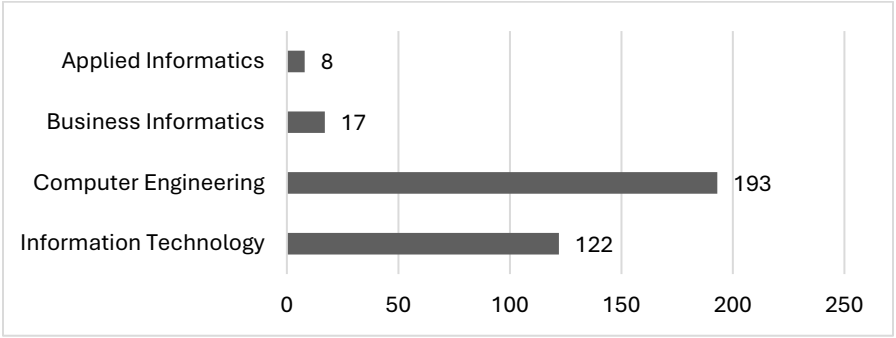
Figure 2. Student Distribution by Study Level



Source: Author's own representation.

Figure 3 indicates that all participants come from technology-related disciplines, highlighting the natural alignment between their fields of study and the subject of artificial intelligence.

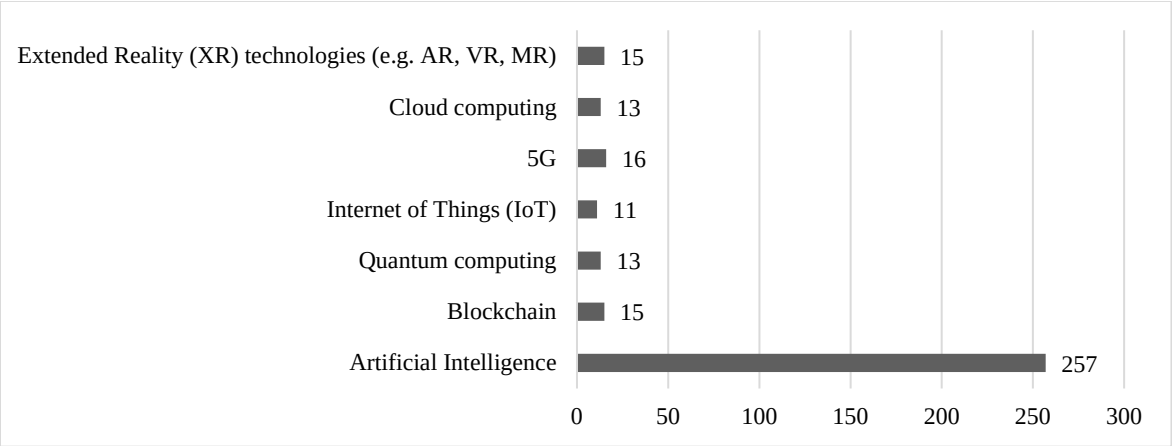
Figure 3. Student Distribution by Area of Study



Source: Author's own representation.

Which technology will have the biggest impact on the IT industry in the next 5 years? The data analysis shows that most students (257) perceive that artificial intelligence (AI) will have the most important impact on the IT industry in the next five years. This also shows the confidence that students have in the transformative potential of AI. AI is expected to affect various sectors through advances in automation, data analysis, natural language processing, and other aspects. The applications are in different fields, such as improving customer service with chatbots. 5G is ranked second among students. The rollout of 5G technology significantly increases cellular network speed and capacity, facilitating advances in IoT, autonomous vehicles, and augmented reality applications. Blockchain and augmented reality technologies (AR, VR, and MR) are ranked third. Such technologies are increasingly used in entertainment, training, and education. They offer immersive experiences and have the potential to change the way we interact with digital environments. Blockchain technology is predicted to affect finance, supply chain management, and healthcare by providing secure, transparent, and decentralized transaction mechanisms. Meanwhile, in fourth place are cloud computing and quantum computing. Cloud computing continues to transform IT infrastructure by providing resources and services on demand. It supports businesses in managing data, applications, and workloads efficiently. Potential quantum computing applications include cryptography, optimization problems, and advanced simulations. While the Internet of Things (IoT) ranks last, The IoT is expected to continue to grow, connecting more devices and enabling homes, cities, and industrial processes while improving real-time data collection and analysis, affecting efficiency and decision-making. Each of the technologies has the potential to drive innovation and efficiency in different sectors (Figure 4).

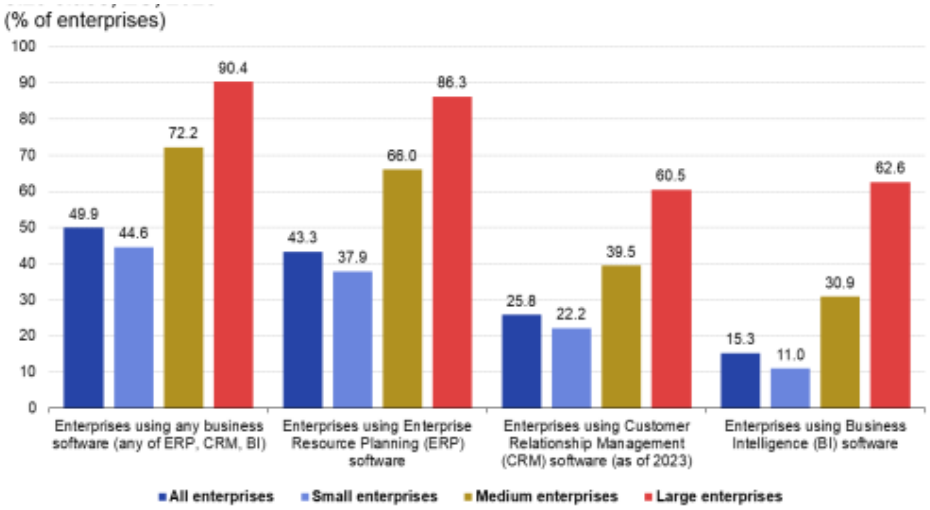
Figure 4. Technologies with the highest impact on the IT industry in the next 5 years



Source: Author's own representation.

The digital transformation of businesses is increasingly critical in today's economic landscape. Eurostat data (2024) indicates that 49.9% of EU companies have integrated digital systems such as ERP, CRM, and BI, with larger corporations leading in adoption rates. This finding resonates with student perspectives, as many identified AI as the technology poised to make the most significant impact on the IT industry in the next five years. The emphasis on AI by students reflects a recognition of its role in enhancing operational efficiency, much like the digital systems being adopted by companies. Furthermore, students' awareness of the importance of these technologies indicates a readiness to engage with the digital landscape that future employers will navigate, particularly in larger organizations where technology integration is more pronounced. This alignment suggests that educational programs should prioritize equipping students with skills in both AI and traditional business software systems to prepare them for a rapidly evolving job market.

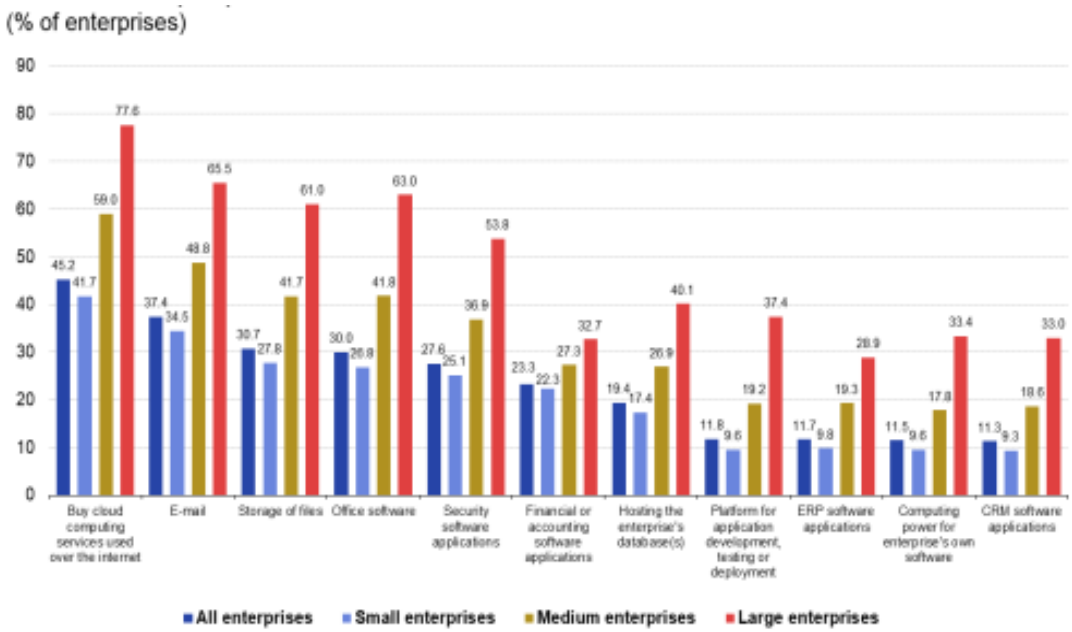
Figure 5. E-business applications



Source: Eurostat, 2024.

Although ranked lower by students, cloud computing and quantum computing continue to transform business operations by optimizing infrastructure and offering scalable solutions. As shown in Figure 6, cloud services are already widely adopted, with 45.2% of enterprises utilizing them for applications such as storage, email, and software hosting. While still in its early stages, quantum computing holds the potential to revolutionize complex computing tasks like cryptography and optimization.

Figure 6. Cloud computing services

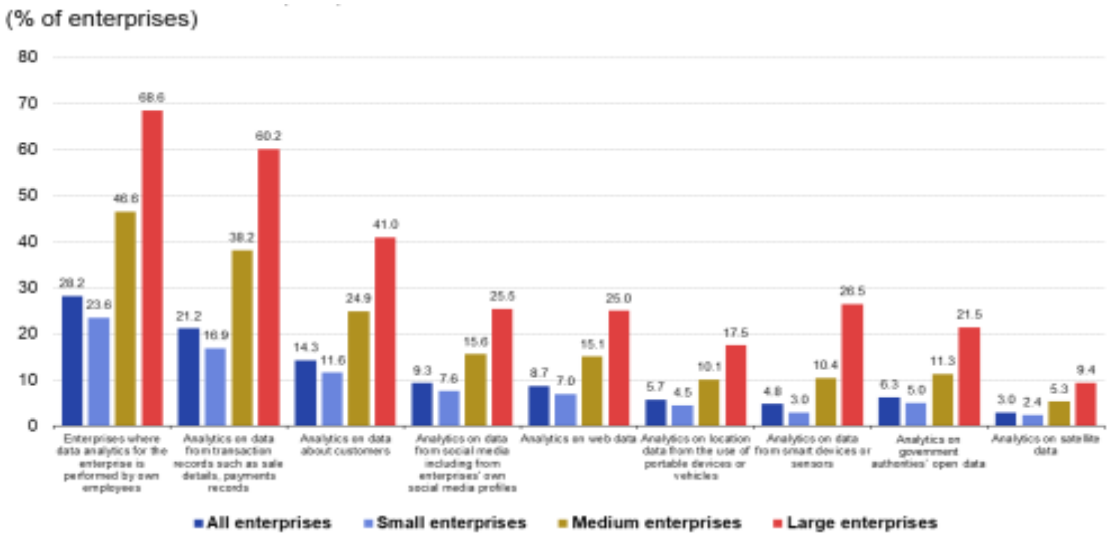


Source: Eurostat, 2024.

Figure 7 shows that data analytics is increasingly being adopted by larger corporations, where its role in decision-making processes is becoming central (Eurostat, 2024). As data becomes a key driver of innovation across various IT sectors, its influence is expected to complement other technologies like AI, IoT, and cloud computing rather than serve as a standalone driver. This aligns with student perceptions, as

most students ranked AI as the technology with the biggest impact over the next five years, reflecting the growing interdependence of AI and data analytics in shaping the future of the IT industry. While data analytics itself ranked lower among students, its integration with AI and cloud computing is likely to enhance its transformative power in the years ahead.

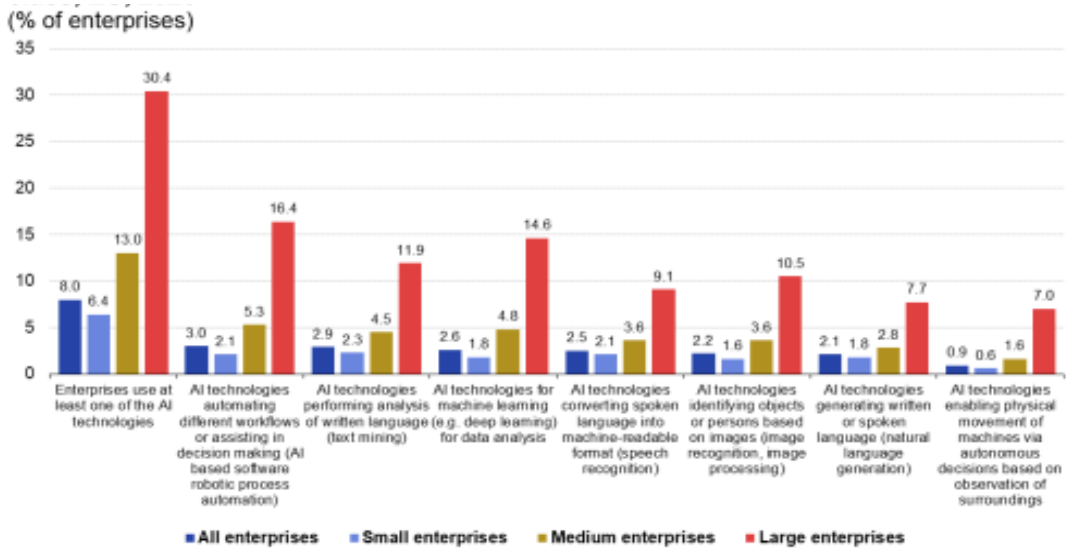
Figure 7. Data analytics



Source: Eurostat, 2024.

The analysis shows that AI is perceived by most students as having the biggest potential impact on the IT industry. This is reflected in the data showing various AI applications across companies, though adoption rates remain relatively low for specific AI technologies (Figure 8).

Figure 8. AI technologies



Source: Eurostat, 2024.

The potential for AI lies in areas such as:

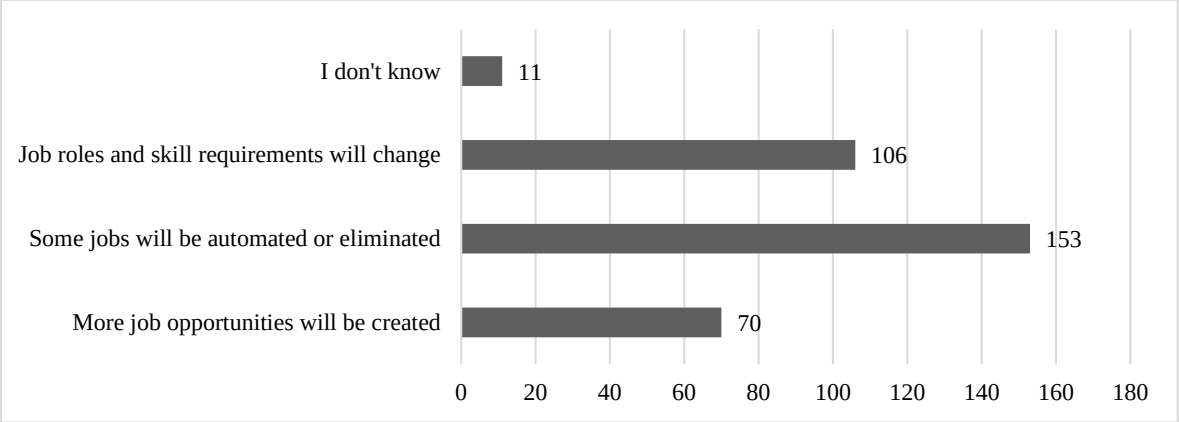
- Automation: AI technology to assist in decision-making is being adopted by 3% of enterprises.

- Natural Language Processing (NLP): 2.5% of companies use AI to convert speech into machine-readable formats.
- Machine Learning: 2.6% of enterprises are using machine learning technologies for deeper insights.
- AI-driven content evaluation: About 2.9% of businesses use AI to assess and evaluate written content.

Despite low usage percentages in 2023, the broad transformative potential of AI across industries like customer service, data analysis, automation, and advanced decision-making makes it the top choice for future impact (Eurostat, 2024).

Will new technological innovations affect the job market in the next 5–10 years? Most students (153) believe that some jobs will be automated or eliminated due to technological advancements. This aligns with the growing influence of AI, robotics, and automation, which can perform repetitive or data-intensive tasks more efficiently than humans. Meanwhile, 106 students think that job positions and skill requirements will evolve. With the emergence of innovative technologies, there will be a shift towards jobs that require digital knowledge, advanced technical skills, and the ability to work alongside advanced systems. With the advancement of innovative technologies, some of the students (70) perceive that more employment opportunities will be created. This can include work in the development, management, and maintenance of modern technologies, as well as completely new categories of work that do not exist today. A small percentage of students (11) are uncertain about the impact of technological trends on the labor market. This may be due to the unpredictable nature of technological advances and their varying impact on different industries. The study's findings underline the need to adjust to advances in technology while developing new skills to remain competitive in the labor market. The visual presentation is given in Figure 9.

Figure 9. The impact of technologies on the labor market

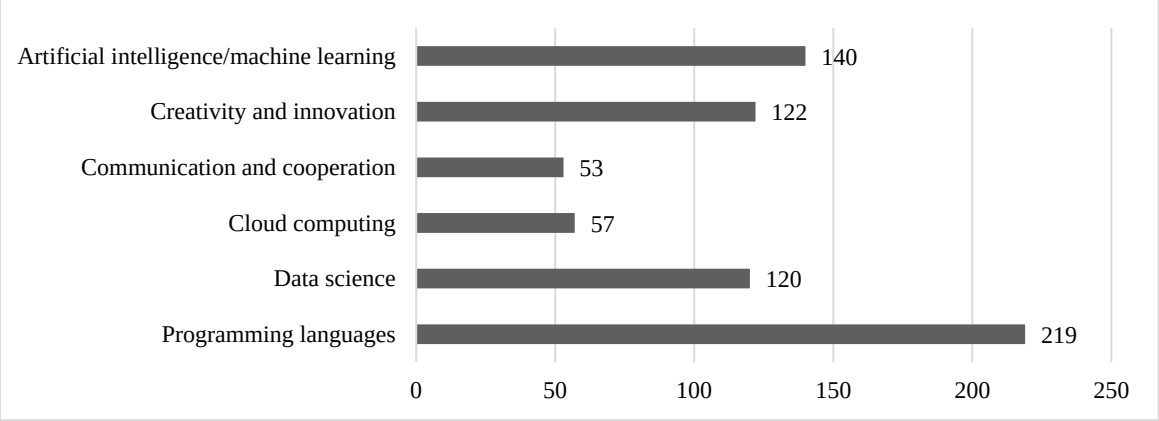


Source: Author’s own representation.

Which skills are most important for IT professionals to have in the next five years? The results of the data show that programming is rated as one of the most important skills for IT professionals in the next five years (Figure 10). Programming languages (219) are considered the top skill for IT professionals. This is because programming is essential to the development of software, applications, and management systems. Skills in programming languages such as Python, Java, and JavaScript are essential for various positions in IT. Meanwhile, artificial intelligence/machine learning (140) is ranked second. AI and machine learning are highly valued, reflecting the growing importance of these technologies in automation, improved decision-making, and the creation of intelligent systems. Professionals with ability in AI and ML are in demand in the job market. In third place are creativity and innovation (122), which are essential for new creative ideas and innovation. Data analysis and management (120) are essential skills due to the

increasing volume of data generated by businesses. The ability to analyze and manage data effectively allows companies to gain insights, improve operations, and make data-driven decisions. Meanwhile, the two least valued skills are cloud computing (57) and communication and collaboration (53). Cloud computing capabilities are important as more businesses move their operations to the cloud for efficiency, cost, and flexibility. Cloud platforms such as AWS, Azure, and Google Cloud are especially important for companies. Communication and collaboration skills are critical to working effectively in teams, managing projects, and consulting with stakeholders. The demands of the labor market are oriented towards well-trained professionals who can interact and work effectively within teams.

Figure 10. Most important skills for IT professionals in the next 5 years



Source: Author's own representation.

How do students perceive AI's impact on career possibilities and the skills required in Industry 5.0? Based on the data values in Table 2, it appears that students in general have a positive perception of the role of AI in the digital transformation of companies (average value = 3.496). There is a positive perception that AI can effectively address complex challenges in Industry 5.0, although the confidence interval shows variability in student perceptions (mean value 3.313). Students have a lower assessment about the impact of AI on increasing skills such as creativity and productivity, as the mean is lower (mean value 2.87). This can indicate worries or insecurities. The perceived role of AI in improving the quality of decision-making is moderately positive (mean value 3.086), although variability suggests different perceptions among students. There is a strong perception among students that AI will significantly influence the future of technology and society in Industry 5.0 (mean value 3.419). Students have a great interest in developing AI skills for their future careers.

Table 2. AI on job opportunities and skills

				95% Confidence Interval Mean					
		Valid	Mean	Upper	Lower	Std. Deviation	Coefficient of variation	Minimum	Maximum
Perceptions and Potential of AI	AI has the potential to transform industries.	40	.496	.623	.368	.195	.342		
	AI helps solve complex problems or challenges.	40	.313	.431	.194	.108	.334		

	AI affects the improvement of skills such as creativity, productivity, and learning.	40	.87	.995	.745	.172	.408		
	AI improves the quality of decision-making.	40	.086	.201	.97	.08	.35		
	AI affects the future of technology and society.	40	.419	.531	.307	.05	.307		
Investing in AI Skills	Developing AI skills for career or personal interests.	40	.333	.451	.215	.106	.332		

Source: Author's creation.

What are the students' concerns related to AI implementation in Industry 5.0? Students' express concerns about the possible negative impacts of AI, especially on the replacement of various positions at work. The mean is a moderate 3.094, but the confidence interval suggests variability among students about this concern. Ethical concerns such as job substitution, privacy, and transparency issues are noted. Students are not completely convinced about the benefits of integrating human resources with AI in Industry 5.0. It is worth noting that Industry 5.0 combines the interaction between humans and AI. As increased jobs rely on advanced technologies, students must develop digital skills such as coding, data analysis, and machine learning to meet the demands of companies. This result is in line with the conclusions reached by other studies. The findings of this study align with prior research, such as Longo, Padovano, & Umbrello (2020), which emphasized the transformative potential of AI in Industry 5.0. Similar to our results, Chowdhury et al. (2023) found that professionals believe AI will significantly influence future industries, particularly in automation and personalized service development. However, consistent with Giroux et al. (2022), our study also highlights concerns about job displacement and privacy, indicating mixed perceptions about AI's broader societal impacts. In detail, the data for each element is given in Table 3.

Table 3. AI implementation in Industry 5.0

				95% Confidence Interval Mean					
		Valid	Mean	Upper	Lower	Std. Deviation	Coefficient of variation	Minimum	Maximum
Trust and Ethics in AI	Adverse impact of AI, such as job replacement, privacy violations, or prejudice	340	3.094	3.216	2.972	1.142	0.369	1	5
	Transparency in AI systems	340	3.056	3.156	2.956	0.939	0.307	1	5
Industry 5.0 Knowledge and Perceptions	Integration of human resources and artificial intelligence in Industry 5.0	340	2.894	2.996	2.791	0.961	0.332	1	5
	The ethical implications of Industry 5.0, such as AI job replacement, data privacy, and transparency	340	2.92	3.033	2.807	1.059	0.363	1	5

Source: Author's creation.

H1: Students who believe AI provides a positive impact on job opportunities are more likely to engage in AI-related learning. (α=0.05).

The Pearson correlation coefficient at 0.49 indicates that there is a moderate to strong positive linear relationship between students' belief in the positive impact of AI on job opportunities and their motivation

to engage in AI-related learning (Table 4). The Bayes value (BF10 = $6{,}302\times10^{18}$) strongly supports the hypothesis by proving that there is a positive relationship between the independent variable and the dependent variable. The analysis shows that students who perceive that AI positively affects employment opportunities are more motivated to learn about AI. This is consistent with the literature indicating that positive perceptions of AI can enhance student engagement and motivation in learning about technology. For example, research by Longo, Padovano, and Umbrello (2020) found that individuals who view AI as a driver of job creation are more likely to develop skills related to AI technologies.

Moreover, Chowdhury et al. (2023) emphasize the importance of fostering a positive outlook towards AI in educational contexts, as it not only motivates individuals but also equips them with essential skills for the evolving job market. Similarly, the World Economic Forum (2023) highlights that an individual's understanding of AI's potential to create new job roles positively influences their educational pursuits in this domain. Educational institutions should, therefore, consider strategies to enhance students' understanding of AI's benefits to prepare them effectively for the future workforce. Figure 11 shows the visual representation of the Bayes Factor Robustness Check that shows the acceptance of the hypothesis. Hypothesis H1 is accepted with a confidence level of 95%.

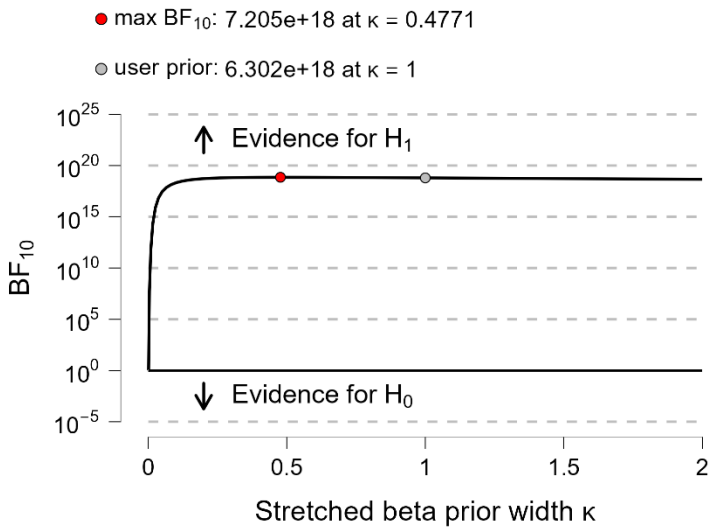
Table 4. Bayesian Pearson Correlations

Variable		AI on job opportunities	AI-related learning
AI on job opportunities	n	—	
	Pearson's r	—	
	BF_{10}	—	
AI-related learning	n	339	—
	Pearson's r	0.49***	—
	BF_{10}	$6.302\times10^{+18}$	—

* $BF_{10} > 10$, ** $BF_{10} > 30$, *** $BF_{10} > 100$

Source: Author's creation.

Figure 11. B Bayes Factor Robustness Check



Source: Author's creation.

H2: Students with higher levels of digital skills are more confident about AI applications in Industry 5.0. ($\alpha = 0.05$).

From the data analysis in Table 5, it appears that the Pearson correlation coefficient of 0.328 shows that there is a moderately positive linear relationship between the level of digital skills of students and their confidence about the implementation of AI in Industry 5.0. This means that students who have developed their digital skills at an advanced level have more confidence about the implementation of AI in Industry 5.0. The Bayes factor (BF10 = $1{,}238\times10^{7}$) supports the H2 hypothesis, confirming the positive relationship that exists. The verification of the hypothesis visually using the Bayes Factor Robustness Check is given in Figure 12.

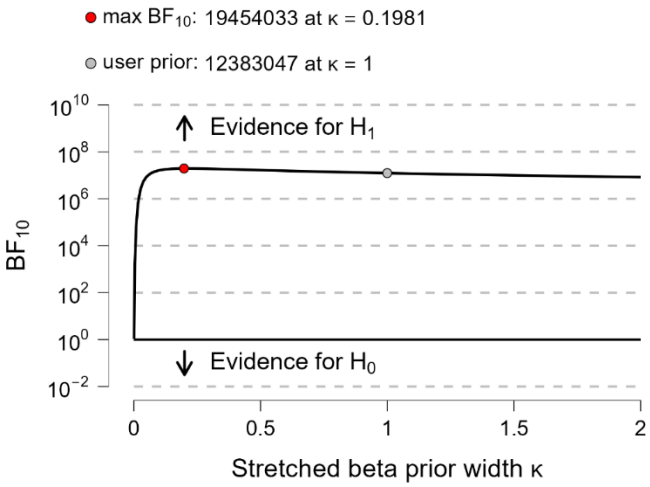
Table 5. Bayesian Pearson Correlations

Variable		Ability in digital skills	AI implementation in Industry 5.0
Ability in digital skills	n	—	
	Pearson's r	—	
	BF_{10}	—	
AI implementation in Industry 5.0	n	339	—
	Pearson's r	0.328***	—
	BF_{10}	$1.238\times10^{+7}$	—

* $BF_{10} > 10$, ** $BF_{10} > 30$, *** $BF_{10} > 100$

Source: Author's creation.

Figure 12. B Bayes Factor Robustness Check



Source: Author's creation.

5. Conclusion

Students have positive perceptions about the role of AI in the digital transformation of companies. As highlighted in the literature, the rapid evolution of AI has profound implications for various sectors, necessitating a re-evaluation of workforce dynamics (Gamberini & Pluchino, 2024; Rashid & Kausik, 2024). However, there are significant concerns about job replacement by AI, data privacy, and transparency. These perceptions and concerns highlight the need for comprehensive education and discussion on the role of AI in Industry 5.0. A significant percentage of students predict that AI will have the biggest impact on the IT industry over the next five years. Students are divided on the impact of innovative technology trends on the job market over the next 5–10 years, with some predicting new job opportunities will be created while others foresee the automation or elimination of jobs. In line with Kolade and Owoseni's (2022) analysis of Employment 5.0, the findings suggest that there is a pressing need for educational institutions

to prioritize upskilling and reskilling initiatives that prepare students for the changing demands of the labor market.

The most important skills for IT professionals for the next five years include programming languages, data analysis and management, cloud computing, communication and teamwork, creativity and innovation, and machine learning and AI. This aligns with the assertion that individuals equipped with higher levels of digital competency are less apprehensive about AI's impact on employment (Longo, Padovano, & Umbrello, 2020).

The need to reskill and upgrade the workforce to adapt to Industry 5.0 highlights the need for programs and training that prepare people for AI-driven industries. Advanced studies in the practical application of AI technologies in various sectors are recommended. Educational institutions should therefore consider strategies to enhance students' understanding of AI's benefits in order to prepare them effectively for the future workforce. Ensuring that students are equipped with both the skills and the mindset to navigate this new landscape will be crucial in harnessing the full potential of AI while promoting sustainable industrial development.

This study offers valuable insights into student perceptions of AI and Industry 5.0; however, several limitations should be acknowledged. While the sample is from a single university, the findings provide a focused understanding of the student population studied. Future studies with a broader, more diverse sample could enhance the generalizability of the results. Additionally, the cross-sectional nature of the research captures perceptions at a specific point in time, which may not reflect long-term trends. Future research could adopt longitudinal approaches to assess evolving perceptions without altering the relevance of the current findings.

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