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The dark side of generative artificial intelligence: A critical analysis of controversies and risks of ChatGPT

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ABSTRACT

Objective: The objective of the article is to provide a comprehensive identification and understanding of the challenges and opportunities associated with the use of generative artificial intelligence (GAI) in business. This study sought to develop a conceptual framework that gathers the negative aspects of GAI development in management and economics, with a focus on ChatGPT.

Research Design & Methods: The study employed a narrative and critical literature review and developed a conceptual framework based on prior literature. We used a line of deductive reasoning in formulating our theoretical framework to make the study's overall structure rational and productive. Therefore, this article should be viewed as a conceptual article that highlights the controversies and threats of GAI in management and economics, with ChatGPT as a case study.

Findings: Based on the conducted deep and extensive query of academic literature on the subject as well as professional press and Internet portals, we identified various controversies, threats, defects, and disadvantages of GAI, in particular ChatGPT. Next, we grouped the identified threats into clusters to summarize the seven main threats we see. In our opinion they are as follows: (i) no regulation of the AI market and urgent need for regulation, (ii) poor quality, lack of quality control, disinformation, deepfake content, algorithmic bias, (iii) automation-spurred job losses, (iv) personal data violation, social surveillance, and privacy violation, (v) social manipulation, weakening ethics and goodwill, (vi) widening socio-economic inequalities, and (vii) AI technostress.

Implications & Recommendations: It is important to regulate the AI/GAI market. Advocating for the regulation of the AI market is crucial to ensure a level playing field, promote fair competition, protect intellectual property rights and privacy, and prevent potential geopolitical risks. The changing job market requires workers to continuously acquire new (digital) skills through education and retraining. As the training of AI systems becomes a prominent job category, it is important to adapt and take advantage of new opportunities. To mitigate the risks related to personal data violation, social surveillance, and privacy violation, GAI developers must prioritize ethical considerations and work to develop systems that prioritize user privacy and security. To avoid social manipulation and weaken ethics and goodwill, it is important to implement responsible AI practices and ethical guidelines: transparency in data usage, bias mitigation techniques, and monitoring of generated content for harmful or misleading information.

Contribution & Value Added: This article may aid in bringing attention to the significance of resolving the ethical and legal considerations that arise from the use of GAI and ChatGPT by drawing attention to the controversies and hazards associated with these technologies.

Article type:	review article
Keywords:	artificial intelligence (AI); generative artificial intelligence (GAI); ChatGPT; technology adoption; digital transformation; OpenAI; chatbots; technostress
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INTRODUCTION

Artificial intelligence (AI) has rapidly advanced in recent years and its applications are becoming increasingly widespread (Tlili *et al.*, 2023, Adetayo, 2023). Early AI research concentrated on creating rule-based systems, which carried out tasks according to a set of established rules. The development of machine learning (ML) algorithms allowed AI systems to learn from data and enhance their performance over time starting in the 1980s. Significant progress has been made in generative artificial intelligence (GAI) development in recent years as a result of the emergence of deep learning (DL) techniques like neural networks. Natural language processing, picture and audio recognition, and autonomous systems are only a few of the current uses for GAI. Artificial intelligence has come a long way in the last few years, with much of the progress focused on developing more lifelike generative models (Bengio *et al*., 2013). Several fields, including business, management and economics, have recently shown considerable interest in the concept of GAI (Lăzăroiu *et al.*, 2022; Reshetnikova & Mikhaylov, 2023).

One of the areas in which AI has been gaining significant attention is the chatbot industry with ChatGPT being a prominent example (Costello, 2023; Ekanazake & Saputhanthri; 2020). ChatGPT is a generative model built on the transformer architecture that enables the production of natural-sounding text, and it is a tool that has acquired considerable popularity (Radford *et al*., 2019). ChatGPT is a language model developed by OpenAI that uses deep learning and machine learning algorithms to generate text-based responses in a conversational manner by producing human-like text (Korzynski *et al.*, 2023; Slapeta, 2023). ChatGPT was created in 2018 by OpenAI. The first iteration of GPT, GPT-1, had 117 million parameters and was trained using unsupervised learning on a large corpus of text data. It performed exceptionally well in tasks like language modelling and text completion (Radford *et al*., 2019). Later versions, GPT-2 and GPT-3, increased the number of parameters to 1.5 billion and 175 billion, respectively, making them among the largest language models ever created (Radford *et al*., 2019). Due to the controversy surrounding GPT-2's potential to generate misleading or harmful content, OpenAI initially withheld the complete model from the public.

Numerous prominent business leaders, even business tycoons, including Bill Gates and Elon Musk, emphasize that GAI and ChatGPT would alter our work and daily lives (Bove, 2023; Olinga, 2022). Van Dis *et al*. (2023) indicate that ChatGPT would impact researchers' work. Thorp (2023) acknowledges some factual inaccuracies in ChatGPT but argues that it would transform our education. In the Italian region of Marche, the authorities temporarily banned ChatGPT due to data privacy concerns (Robertson, 2023). However, OpenAI addressed and clarified issues raised by data protection regulators.

While ChatGPT and GAI have the potential to revolutionize how we approach data analysis and report generation, they also raise significant doubts and questions about their potential effects on society, including ethics, privacy, and security (Floridi & Cowls, 2019; Florek-Paszkowska *et al*., 2021). The hazards and unfavourable effects of GAI, notably with regard to ethics, privacy, and employment displacement, are also a source of worry. In this study, we analysed ChatGPT to shed light on the debates and dangers surrounding the advancement of GAI in the context of management and economics. We looked at the potential advantages and disadvantages of GAI and ChatGPT, as well as how they may affect how people and society as a whole work in the future (Kaplan & Haenlein, 2021). In doing so, we hope to inspire more conversation and investigation on this crucial subject while providing a thorough review of the difficulties and potential that result from the application of GAI in these fields.

This study is essentially a continuation of our investigation on ChatGPT in light of the current flurry of media attention and academic debate. In our very first publication (Korzynski *et al.*, 2023), which almost had the same authors, we wrote about the positive aspects, advantages, and opportunities provided by ChatGPT. In contrast, the second part of this article addresses ChatGPT's negative features, including controversies, threats, drawbacks, disadvantages, and obstacles. Nonetheless, this is not our final statement on the subject, as we already planned further stages of our research, which will undoubtedly approach this topic from a different angle.

The objective of the article is to provide a comprehensive identification and understanding of the challenges and opportunities associated with the use of generative models in business. This study aimed

to develop a conceptual framework that gathers the negative aspects of GAI development in management and economics, with a focus on ChatGPT. We do hope this article will foster further discussion and research on the ethical, legal, and societal implications of GAI in management and economics.

On the sidelines of our scientific inquiries, we want to mention that when creating our text, we adopted the title 'Controversies and threats of GAI development and use: A case of ChatGPT,' after which we asked ChatGPT if it had an idea for a better, more catchy title. We received several suggestions:

- 'The Dark Side of AI: Controversies and Threats of Generative Artificial Intelligence Development and Use in Chatbots';
- 'Unleashing the Beast: Examining the Controversies and Threats Surrounding Chatbot Development with Generative AI';
- 'Chatbots in the Age of Generative AI: A Critical Analysis of Controversies and Threats';
- 'Beyond Human Capabilities: The Risks and Controversies of Chatbot Development with Generative AI'.

Finally, we decided to use the title 'The dark side of generative artificial intelligence: A critical analysis of controversies and risks of ChatGPT.'

The article begins with the presentation of the methodological assumptions regarding the literature review. The main part of the article applies the classic narrative review of the literature, which was built around seven identified risks. The article ends with conclusions including a discussion of research limitations and further possible directions of research.

MATERIAL AND METHODS

We employed a narrative and critical literature review in this study (Ratten, 2023). This article is founded on prior literature. Based on a literature review and desk research, this article will develop a conceptual framework, gathering altogether what was raised as the negative aspects of AI. This conceptual study's research questions and theoretical framework were derived from an overview of the relevant literature and desk research, as this topic is still relatively new to the fields of economics, management, and business studies. To achieve the most beneficial cognitive results from the study process, smooth and efficient conduct of scientific research requires a procedure following pre-determined procedures (Babbie, 2012, pp. 112-113). The research endeavour had exploratory, descriptive, analytic, and prescriptive objectives (Collis & Hussey, 2009, p. 5). A comprehensive literature review was conducted to conceptualize and operationalize the research endeavour. Therefore, the primary method of research was a literature review with constructive criticisms. Fisher's (2010, pp. 94-130) five-stage model for a critical literature review was utilized in this investigation, namely: (i) preliminary search for sources, (ii) mapping and describing the literature, (iii) evaluating the literature, (iv) radical critique, and (v) summarising and revising.

The study's objective was defined based on a preliminary literature evaluation, which prompted the preparation of the conceptual framework for this study using a line of deductive reasoning. Deductive reasoning is a component of this type of research methodology, which makes the study's overall structure rational and productive. In conclusion, this article should be viewed as a conceptual article in which a literature review and desk research result in the formulation of the theoretical framework gathering controversies and threats of GAI.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Based on the conducted deep and extensive query of academic literature on the subject, as well as professional press and Internet portals, we identified various controversies, threats, risks, defects, and disadvantages of GAI, in particular, ChatGPT. Then, in some cases, we grouped the identified threats into clusters to present the seven main threats we see. In our opinion they are as follows:

- No regulation of the AI market and urgent need for regulation (Amariles & Baquero, 2023; Hsu, 2022);
- Poor quality, lack of quality control, disinformation, deepfake content, and algorithmic bias (Norori *et al.*, 2021; Rana *et al.*, 2022; Moravec, Kim, & Dennis 2020);

- Automation-spurred job losses, job displacement (Gruetzemacher *et al*., 2020; Khogali & Mekid, 2023);
- Personal data violation, social surveillance, and privacy violation (Teubner *et al.*, 2023; Mazurek & Małagocka, 2019; Piotrowski, 2023);
- Social manipulation, weakening ethics and goodwill (Mazurek, 2023; Oduro *et al.*, 2022);
- Widening socio-economic inequalities (Efe *et al*., 2022; Lutz, 2019; Kitsara, 2022; Kopalle *et al.*, 2022; Zajko, 2022);
- AI-related technostress (Chen *et al*., 2022; Korzynski *et al*., 2021; Newman *et al*., 2022).

No Regulation of the AI Market and Urgent Need for Regulation

While ChatGPT and similar AI-powered chatbots offer numerous benefits, the lack of regulation in the AI market poses significant risks, drawbacks, and controversies that warrant careful consideration. Moreover, the development and deployment of AI technologies (such as ChatGPT) in the management and economics domains raise several controversies and threats, particularly in the absence of adequate regulation (Hsu, 2022). Unlike the pharmaceutical and financial industries, the AI market currently lacks comprehensive regulation, which has implications for various aspects, including ethical concerns, biases, accountability, economic disparities, and potential misuse (Oduro *et al.*, 2022). This section aims to analyse the controversies and threats associated with the no regulation of the AI market, with a specific focus on the case of ChatGPT, and discuss the implications for management and economics as well as call for the urgent need for regulating AI technologies.

An important point of contention regarding the lack of regulation in the AI market relates to the ethical issues linked to the creation and utilization of AI technologies such as ChatGPT (Hsu, 2022). The training of AI models involves extensive data, which may introduce biases into their responses (Norori *et al.*, 2021). For instance, ChatGPT learns from a diverse range of text data available on the internet, which may contain biases related to race, gender, religion, and other sensitive attributes (Varsha, 2023). As a result, ChatGPT's generated responses may reflect these biases, leading to unfair or discriminatory outcomes. Biases in AI-generated responses can have serious consequences, particularly in the management and economics domains (Dwivedi *et al.*, 2023; Palladino, 2022). For instance, when ChatGPT is utilized for customer service in a financial institution, biased responses could result in discriminatory treatment of customers based on their race or gender. Such biases can perpetuate existing inequalities and reinforce discriminatory practices, leading to ethical dilemmas and legal challenges. Moreover, in the absence of regulation, there may be limited mechanisms to detect and mitigate biases in AI models like ChatGPT, leading to potential negative impacts on individuals, organizations, and society at large (Eke, 2023).

Another significant concern related to the no regulation of the AI market is the issue of accountability and responsibility (Amariles & Baquero, 2023). Artificial intelligence models like ChatGPT operate autonomously, generating responses based on their learned patterns without human intervention (Eke, 2023). This makes it challenging to attribute accountability and responsibility for the actions or outputs of AI systems. In case of errors, biases, or harmful consequences arising from ChatGPT's responses, questions may arise about who should be held accountable – the developers, the users, or the AI model itself? The lack of clear accountability and responsibility mechanisms can have serious implications for management and economics (Short & Short, 2023, Königstorfer & Thalmann, 2022). For instance, if ChatGPT provides inaccurate financial advice to users, resulting in financial losses, it may be challenging to determine who is responsible for the losses. This can result in legal disputes and challenges in establishing liability, which can result in financial and reputational damages for organizations and individuals. Consequently, in the absence of regulation, ensuring accountability and responsibility in the development and use of AI technologies like ChatGPT becomes a significant challenge, with potential repercussions for the management and economics domains.

The absence of regulation related to the AI market can also exacerbate economic disparities. Artificial intelligence technologies, including ChatGPT, have the potential to automate tasks that are currently performed by humans, which may lead to job displacement (Gruetzemacher *et al.*, 2020). This can result in economic disparities, particularly in industries where chatbots are used for customer service, support, or other repetitive tasks. Without proper regulation, there may be limited mechanisms to ensure that

the economic benefits of AI technologies are distributed equitably (Kopalle *et al.*, 2022). Additionally, in the absence of regulation, certain companies or entities may dominate the AI market, leading to a concentration of power and influence. This can result in limited competition, reduced innovation, and restricted access to AI technologies for smaller players or underrepresented groups. Economic disparities arising from unregulated AI markets might also affect the adoption of AI technologies in management and economics. For instance, smaller businesses or organizations may not have the resources or expertise to develop or deploy AI models like ChatGPT, resulting in a competitive disadvantage compared to larger enterprises that can afford advanced AI technologies. This might lead to a growing economic gap between different organizations and industries, further exacerbating existing inequalities. Furthermore, the economic disparities arising from an unregulated AI market can also impact the pricing and affordability of AI technologies. Without proper regulation, companies/firms may set arbitrary prices for AI services, making them unaffordable for small businesses or individuals. This can establish a barrier to entry for those who cannot afford the high costs associated with AI technologies, limiting their access and opportunities to benefit from the potential advantages of AI in management and economics. Consequently, economic disparities arising from the lack of regulation in the AI market can have far-reaching consequences, affecting competitiveness, innovation, and inclusivity.

Lacking regulation of the AI market also raises concerns about the impacts of AI technologies on decision-making and human autonomy (Korzynski *et al.*, 2023). As AI models like ChatGPT gain more capabilities in generating human-like text responses, there is a risk that humans may rely excessively on AI-generated content, without critically evaluating or verifying the information (Eke, 2023). This can impact decision-making processes in management and economics, where accurate and reliable information is crucial for making informed choices (Fu *et al.*, 2023; Li & Liao, 2023; Verma *et al.*, 2022). The adoption of AI-generated content can also diminish human autonomy and creativity (Regona *et al.*, 2022). When AI technologies like ChatGPT are used extensively for tasks that require human creativity, such as content creation, writing, or strategy development, it can potentially diminish and lessen human contributions and reduce the need for human involvement in such tasks. This might have implications for the job market, where human creativity, critical thinking, and decision-making skills are highly valued in management and economics.

The absence of regulation related to the AI market can also have geopolitical risks and implications. As AI technologies like ChatGPT continue to advance, countries and organizations that have a dominant position in AI development can obtain significant economic, political, and strategic advantages. This might cause a power imbalance, with some countries or organizations having more access to AI technologies and reaping the benefits, while others lag behind. Moreover, the lack of regulation in the AI market can also raise concerns about international competition and the race to develop AI technologies. The absence of a level playing field and standardized regulations can lead to unfair competition practices, such as data theft, intellectual property infringement, or unethical practices, which can have geopolitical implications and impact the global economy. Finally, the unregulated AI market might lead to legal ambiguities related to ownership, privacy, and intellectual property rights (Teubner *et al.*, 2023). For instance, AI-generated content, such as articles, images, or designs, may raise questions about the original authorship, copyright, or ownership. The lack of regulation in the AI market can lead to legal disputes and challenges related to intellectual property rights, data ownership, and privacy concerns, which can have implications for the management and economics domains.

Poor Quality, Lack of Quality Control, Disinformation, Deepfake Content, Algorithmic Bias

The arrival of the AI language model known as ChatGPT sparked a keen interest and high hopes, which were soon followed by a growing awareness of the limitations and drawbacks this technology suffers from. The biggest concerns are lack of information quality control, disinformation, deepfake applications, and algorithmic bias caused by bad data.

The quality of the generated responses is one of the primary limitations of ChatGPT. Although the model is able to produce coherent and contextually appropriate responses, their content can often be irrelevant, nonsensical, or even offensive at times. This is because ChatGPT responds to inquiries based on correlations in large datasets and statistical patterns and does not understand

the questions asked. However, apart from the confusion caused in purely casual applications, with AI-integrated business analytics (AI-BA) making increasing use of AI-generated information, the poor quality of this information may translate into bad business decisions and operational inefficiency in the long run (Rana, Chatterjee, Dwivedi, & Akter, 2022).

The matter discussed above is related to the issue of disinformation. ChatGPT is trained on massive amounts of all sorts of data scraped from the internet, which – quite naturally – raises concerns regarding the reliability and accuracy of these data, not to mention the appropriateness of the responses provided. As a result, it is not uncommon to expect the spread of misinformation and false narratives (both intentional and unintentional), as well as the preservation of harmful stereotypes and biases (Moravec, Kim, & Dennis, 2020; Freelon *et al.*, 2022). With no supervision or accountability mechanisms in place, ChatGPT remains highly vulnerable to misuse and abuse.

This leads us to the problem of deepfake content. With the latest technological advances in AI and machine learning, fake content is harder and harder for human observers to detect and the possibilities to deceive are virtually endless (Kietzmann *et al.*, 2020; Jones-Jang, Mortensen, & Liu, 2021). Even though the model itself has not been designed with this specific purpose in mind, its ability to produce convincing, believable text makes it a powerful tool in the service of propaganda and other forms of disinformation. This, in turn, calls the credibility of and trust in public authorities and media into question (Androniceanu *et al.*, 2022).

Lastly, there is the algorithmic bias caused by bad data. Algorithms can systematically introduce inadvertent bias, reinforce historical discrimination, favour a political orientation or reinforce undesired practices (Janssen & Kuk, 2016). ChatGPT's output depends heavily on the quality and representativeness of the data it is trained on. This means that if these data include biases like racial or gender stereotypes, these biases will be reflected in the responses provided. An artificially learned inclination to represent certain interests and underrepresent others is certainly distant from the neutrality the model was supposed to guarantee (Janssen *et al.*, 2020).

To conclude, ChatGPT is a tool powerful enough to change the accessibility and availability of information for both better and worse. When it comes to its deficiencies, the most obvious and impactful ones include the lack of information quality control and the potential to misinform, generate deepfake content, and cause algorithmic bias. If this technology is to be used ethically and responsibly, we must address the above challenges. Only in this way can we take full advantage of the technology, help it advance our collective well-being, and minimize the risks involved with its rapid evolution.

There are several ways to mitigate the risks associated with the development of ChatGPT. When it comes to the poor quality of information that ChatGPT produces and the general lack of quality control mechanisms, diverse and high-quality pre-approved datasets could be used to train the model to refine its output. Another way to make the model generate more relevant and reliable data could be to put a human feedback loop in place, with users providing feedback to help the model learn from mistakes and improve over time. It may also be reasonable to establish clear guidelines and standards for the use of ChatGPT in customer service interactions: to leave a minimum margin for responses that do not meet the quality standards set by the organization; which should be verified through regular monitoring and evaluation. Having customer service agents proficient in the use of ChatGPT could also translate into the best possible customer service and support.

Combating disinformation could involve implementing fact-checking mechanisms to verify the accuracy of the responses generated by ChatGPT and monitoring social media platforms and other online channels for the spread of disinformation, followed by taking action aimed at its removal or countering. What is promising is that in order to tackle the rise and spread of fake news, automatic detection techniques have been researched based on AI and machine learning (Nasir, Khan, & Varlamis, 2021). Educating users on how to identify and avoid disinformation and encouraging them to report any instances of it plays a great part here as well.

The battle against deepfake content can be especially challenging, but the recent achievements of deep learning techniques in complex natural language processing tasks, make them a promising solution for fake news detection (Nasir, Khan, & Varlamis, 2021). Moreover, establishing clear and strict

policies and guidelines for the use of deepfake technology in *e.g*. political campaigns, news media, and entertainment might improve the digital landscape too.

As for the algorithm bias, it would be necessary to make algorithms adopt a more holistic perspective and operate in a more inclusive way, so to speak. The role of the human factor in this context is essential, because it is up to us to set the right parameters for algorithm performance and carry out regular spot checks, feed extensive datasets to algorithms, and review how algorithms work from different perspectives to have them work to our advantage – not against us, or some of us.

All in all, a combination of technological solutions, the 'human in the loop' approach, and user education is necessary to mitigate the risks brought about by ChatGPT and to make sure that it is used ethically and responsibly for the good of humanity.

Automation-Spurred Job Losses

The rise of AI and automation technologies has brought about significant changes in the labour market. Out of all the general topics related to human resource management (Kandoth & Kushe Shekhar, 2022), most articles concentrate on the effects of AI on jobs, specifically on technological unemployment and the future of work (Pan & Froese, 2023; Pereira *et al*., 2023). While AI technologies have the potential to create new jobs and increase productivity (Puzzo *et al*., 2020; Oliinyk *et al*., 2021; Lazaroiu *et al*., 2022), they also pose risks and challenges to workers and society as a whole (Morandini *et al*., 2023; Małkowska *et al.*, 2021).

The current literature on AI and automation does not effectively discuss the actual societal issues and worries, such as job loss and the displacement of workers (Khogali & Mekid, 2023). According to the AI job replacement theory, the influence of AI on employment is transforming job roles and can represent both an opportunity for innovation and a potential risk (Huang & Rust, 2018). West distinguishes several possible ramifications for the workforce: job loss, job dislocation, job redefinition, job mismatch, and job churn (West, 2020).

Those who report feeling more concerned worry about the loss of human jobs (19%); surveillance, hacking, and digital privacy (16%); and the lack of human connection (12%) (Maslej *et al*., 2023). Artificial intelligence and automation technologies are expected to replace many jobs that are currently done by humans. This could lead to significant job losses in certain industries and occupations (Acemoglu & Restrepo, 2019; Green & Lamby, 2023; Georgieff & Hyee, 2022; Khogali & Mekid, 2023). According to Berg *et al*. (2018), AI has the potential to bring about negative outcomes, one of which could be the elimination of more than 45% of all jobs. Chen and Xu (2018) predict that within the next 20 years, AI will replace 76.76% of China's currently employed workforce. Other researchers found that companies that implement AI technology tend to decrease their need for workers with low levels of skill or education (Li *et al*., 2021). From an organizational perspective, simply unemployment risk perception due to AI can lead to a negative perception of the opportunities presented by AI, weakened learning processes, and a lack of improvement in workplace well-being (Xu, Xue, & Zhao, 2023).

The implementation of AI has consequences for both knowledge (high-skilled) workers and manual workers (low-skilled), given that AI can potentially automate numerous tasks that are presently executed by humans (Leinen *et al*., 2020).

By 2030, it is projected that around 375 million individuals (equivalent to 14% of the global workforce) may have to switch professions due to technological advancements related to AI (Morandini *et al*., 2023). The OECD report suggests that low-skilled jobs in construction, extraction, farming, fishing, and forestry are highly susceptible to automation, as they require skills that can easily be replaced by machines. Jobs in production and transportation are also at risk but to a lesser extent (Lassébie & Quintini, 2022). On average, across OECD countries, jobs that are at the highest risk of automation account for around 28% of employment. This percentage is higher than the previous estimate published by the OECD, which suggested that about 14% of workers were at high risk of automation (Lassébie & Quintini, 2022). The occupations that face the greatest risk of being automated include construction and extraction, farming, fishing, forestry, production, and transportation. Conversely, jobs in legal, education, management, and community and social services sectors are at lower risk of automation (Lassébie & Quintini, 2022).

Many studies do not provide detailed information on how high-skilled occupations will be affected by automation. This is because these studies typically focus on skills and abilities that can be easily replicated by machines and do not take into account bottleneck items. Consequently, these studies cannot determine whether AI technologies will replace or complement human labour in high-skilled occupations (Lane & Saint-Martin, 2021). Fortunately, most occupations require a blend of bottleneck skills and abilities (*i.e.*, those that cannot be automated with current technologies) and automatable ones, so studies that solely concentrate on a limited number of bottlenecks or highly automatable skills and abilities are likely to present an inaccurate picture of job automatability (Lassébie & Quintini, 2022).

Many research findings validated that although certain tasks within a profession can be automated, the entirety of an occupation cannot be replaced by AI (Dengler & Matthes, 2018). The replacement of humans by AI will happen from mechanical to empathetic tasks, as AI has limited capabilities. Unlike computers that required codified environments and were limited to replacing humans in routine tasks, AI has the potential to automate non-routine activities (Lassébie & Quintini, 2022; Kedziora, 2022). Therefore, it will require time for AI to replace an entire job (Pan & Froese, 2023).

Some authors are more optimistic when it comes to the impact of AI on the job market. The impact of AI technology on employment is not characterized by overall job losses, but rather by changes in the overall composition of the workforce (Dipankar Das, 2023). According to Willcocks (2020), AI is expected to restructure jobs instead of completely replacing human labour due to technological and social limitations. Even though AI is capable of eliminating analytical tasks, it will require time for AI to take over job tasks that involve interpersonal and empathetic skills (Huang & Rust, 2018; Huang, Rust, & Maksimovic, 2019).

The development and implementation of AI technology may generate fresh job opportunities in various fields, particularly in areas that concentrate on AI research and development (Morandini *et al*., 2023) which can drive up efficiency and economic expansion. There are scenarios where automation can give rise to new job categories that necessitate expertise in fields like data analysis, machine learning, software engineering, and cyber security. Skills needed to create AI technologies include expertise in areas like neural networks, deep learning, and machine learning. According to the OECD report, the number of people employed in the AI workforce in OECD countries is currently low, accounting for less than 0.3% of total employment. However, the report notes that this workforce is expanding quickly (Green & Lamby, 2023).

To mitigate the adverse effects of automation on workers, policymakers and employers should prioritize investing in training and education initiatives that equip workers with the skills required to excel in an ever-evolving economy. To prevent long-term unemployment and guarantee a skilled workforce, education and training will be vital (Khogali & Mekid, 2023). Moreover, it is crucial to implement policies that facilitate worker transition and retraining, including job placement services and income support programs, to ensure that individuals displaced by automation can secure new job prospects and sustain a reasonable standard of living. Additionally, it may involve investing in education and training programs that prepare workers for new types of jobs and skills and supporting worker transition and retraining programs.

The integration of AI systems in organizations has highlighted the significance of recognizing and developing transversal skills among their employees. Transversal skills, also referred to as transferable or soft skills, are those skills that can be utilized across different tasks and industries (Hart *et al*., 2021). Such skills include critical thinking, problem-solving, communication, and collaboration, which are crucial for working productively with AI systems. Besides being crucial for working effectively with AI systems, transversal skills can also be enhanced and acquired with the help of AI. Automation of certain tasks and processes by AI can release staff resources and time to concentrate on more intricate and demanding tasks that require transversal skills (Morandini *et al*., 2023).

According to Huang and Rust (2018), the replacement of jobs by AI fundamentally occurs at the task level, rather than the job level, which can be a useful guideline for managers when making strategic decisions regarding the replacement of workers with AI. This insight can also provide suggestions for business educators on how to train students to adapt to the changing job landscape. Since AI has replaced routine tasks, humans must shift their focus to tasks that require cognitive and emotional

skills, which are unlikely to be performed by AI. Huang and Rust (2018) and Huang *et al*. (2019) emphasize the importance of tasks that necessitate 'thinking' and 'feeling' skills.

According to the dynamic skills theory (Fischer *et al*., 2003), the worth of an individual's skills can fluctuate as technology and the economy progress. Initially, it is crucial to identify the cross-functional skills that employees require to minimize the existing skill gaps in the workplace (Morandini *et al*., 2023).

Companies can aid their employees in recognizing the skills necessary for AI implementation, enhancing their current competencies, and acquiring new ones. Morandini *et al*. suggest that organizations need to establish procedures to assist their workers by offering customized training and development opportunities, ensuring that their attitudes and perceptions towards AI are receptive and adaptable to the evolving job market and its associated complexities (Morandini *et al*., 2023). In order to effectively adapt to this transformation, companies and institutions will need to adopt new working and organizational models, which will entail implementing measures and strategies to enhance or develop the skills of their workforce (Morandini *et al*., 2023), including skills required for managerial positions (Gladden *et al*., 2022). The World Economic Forum (WEF) estimates that within the next five years, the percentage of key skills will change by 40%, and approximately 50% of the workforce will require additional training and education. The essential skills expected to grow in importance by 2025 include technical competencies necessary for the proficient use of AI systems, as well as soft skills, also known as cross-functional skills, such as critical thinking, problem-solving, and self-management (The World Economic Forum, 2019).

Workers should deconstruct their current skills and acquire new ones to remain employable and competitive. This may require a constant effort to educate, retrain, learn, or re-learn new skills to adapt to the changing job market conditions and take advantage of new opportunities (Morandini *et al*., 2023).

Certainly, the training of AI systems will become one of the most prominent job categories in the near future, and this change is happening rapidly (Oliveira & Braga, 2020).

Personal Data Violation, Social Surveillance, and Privacy Violation

The development of GAI raises concerns regarding personal data violation, social surveillance, and privacy violation.

The term 'personal data' refers to any information that pertains to a specific individual who can be directly or indirectly identified, such as by their name, ID number, location data, network identifier, or unique characteristics related to their physical, physiological, genetic, mental, economic, cultural, or social identity (European Parliament and Council, 2016). Personal data violation means 'a breach of security leading to the accidental or unlawful destruction, loss, alteration, unauthorized disclosure of, or access to, personal data transmitted, stored or otherwise processed' (GDPR, 2023). One of the main controversies surrounding GAI and personal data violation is the potential for technology to create synthetic images or videos of people without their consent. This could lead to a range of negative consequences, including identity theft and blackmail. Generative AI could be used to create fake news or to create propaganda content that could influence public opinion.

Social surveillance refers to the gathering, retention, manipulation, and evaluation of data concerning individuals or groups by a party seeking to achieve its objectives through the use of violence or other means, which are aided by the information gathered from those under observation (Fuchs & Trottier, 2015). One of the main controversies surrounding the use of GAI for social surveillance is the potential for the technology to infringe on individuals' privacy rights. With the ability to analyse data from social media platforms and other online sources, GAI could be used to build highly detailed profiles of individuals, including their personal interests, beliefs, and relationships. This could be used to target individuals with highly personalized advertising, manipulate public opinion, or even discriminate against certain groups of people. Generative AI can be used for cyberbullying or other forms of online harassment. By using AI to generate highly personalized attacks, individuals or groups could use social surveillance to identify vulnerable targets and launch highly targeted campaigns of harassment or abuse.

Due to the growing economic interest in personal data in recent years, privacy has become increasingly important in the daily lives of both individuals and businesses. The definition of privacy varies depending on the source and cultural context. According to Politou *et al*. (2018), privacy can be characterized as the right to be left alone, the ability to selectively disclose oneself to others, control over

personal information, and the right to freedom from others' judgments. Culver *et al*. (1994) and Moor (1997) both examine privacy in terms of protecting an individual from intrusion, interference, and information access by others. One of the main concerns related to privacy violations is the potential for GAI to create synthetic data that can be used to identify individuals or groups of people. Generative AI can be used for targeted advertising or other forms of marketing that violate individuals' privacy. With access to large amounts of personal data, GAI could create highly personalized marketing content that could be used to manipulate people's purchasing decisions. This could lead to individuals feeling as if their privacy has been violated, as they may not be aware of how their personal data is being used.

To mitigate the risks related to personal data violation, social surveillance, and privacy violation it is important for developers of GAI to prioritize ethical considerations and work to develop systems that prioritize user privacy and security. This includes implementing strong data protection measures, ensuring transparency in the collection and use of personal data, and regularly assessing and updating security protocols. Additionally, it is important for individuals to be aware of protecting their personal information online and to stay informed about new developments and possibilities in AI technology (Mazurek & Małagocka, 2019). To achieve the vision of responsible AI design, serious governance structures must be established at all levels, including individual developers, communities, institutions, industries, sectors, and international organizations. This may involve training, codes of practice, standards, regulations, and/or legislation (Garibay *et al*., 2023).

Social Manipulation, Weakening Ethics, and Goodwill

Another downside of the GAI, briefly addressed in other sections of this article, relates to its potential to lead to different forms and modes of social manipulations, namely a person may use AI to manipulate another person, a person may manipulate AI, AI may manipulate a person, etc. (Eliot, 2023; Piotrowski, 2022). Given the ability of the GAI, such as ChatGPT, to produce credible and human-like texts, its usage may facilitate the development of misleading or false information (Chan, 2023), which then may be used to influence and manipulate people's emotions, perceptions, or behaviour, often without people even realising it (Stahl, 2021). For instance, with the use of ChatGPT corporations may generate plausible stories on their engagement in CSR activities in order to boost their corporate reputation (Illia *et al*., 2023), or generate descriptions of their products to elicit positive consumer attitudes towards their products and drive them into purchasing behaviour (Paul *et al*., 2023), etc. Manipulations of people's emotional, cognitive and/or behavioural responses for commercial gains may take place in many other areas too, such as employment, finance, health care, education, etc. Malicious use of such manipulations raises serious ethical concerns and, in many cases, may be even unlawful. Respectively, authorities have started taking measures against it. For instance, the US Federal Trade Commission has recently warned companies against the use of such practices (Atleson, 2023). To mitigate the violation of user autonomy and preclude social manipulations, organisations need to explore and employ different methods that would ensure transparency in AI deployment, as AI algorithms tend to be opaque to the public (Vaassen, 2022).

However, transparency may not always guarantee a reliable deployment of GAI. ChatGPT is often used by people to seek advice on diverse matters, and given its ability to generate human-like credible content, users tend to find advice provided by ChatGPT convincing. Therefore, they tend to rely on it (Krügel *et al*., 2022), thus allowing their decision-making to be influenced by ChatGPT, even when they are aware that the advice has been generated by AI. Findings of a recent experiment have shown that users underestimate the influence of ChatGPT on their judgment, including judgements on moral issues (Krügel *et al*., 2023). In turn, this raises moral judgement concerns, as information provided by ChatGPT is not always correct (Borji, 2023), and may be even made up when ChatGPT does not have an answer to a question. Furthermore, its advice in case of moral judgements has been found inconsistent (Krügel *et al*., 2023). This in turn questions the safety of relying on ChatGPT and accountability for the harm inflicted by its content. Research showed that when people perceive that moral violations have been committed by AI, they tend to blame all involved parties, namely AI, its developers, and organisations as users of such AI (Sullivan & Fosso Wamba, 2022). Thus, organisations and developers need to take responsibility for designing AI tools that are safe to use and are

under human control. The tendency of people and organisations to anthropomorphise GAI and rely on and its advice may also undermine the reputation of human experts, which as discussed earlier in this article, may threaten some jobs and occupations.

Corporate usage of ChatGPT and alike AI tools in developing their professional content may also be at risk of violating yet another principle of ethics, *i.e*., lead to plagiarism. In the academic world, providing other people's work as one's own has been long acknowledged as an act of plagiarism. Since the release of ChatGPT, plagiarism has been a heated discussion in the field of education and research (Mazurek, 2023) as AI tools have been used by both students (to pass an exam, write an essay, etc.) and researchers, for instance to generate texts for their publications, without acknowledging the use of AI or attributing authorship to it. Given its potential to economise on human and financial resources, corporate deployment of ChatGPR and alike tools is likely to continue growing. Thus, it is of high importance for businesses to assume responsibility for reporting their reliance on AI. Furthermore, as discussed in the above sections of the article, firms need to take responsibility for ensuring the quality of data they use and its governance, as well as provide efficient training to their employees (Rana *et al*., 2022).

Artificial intelligence usage is also associated with the risk of intellectual property infringements. On the one hand, heated discussions are undergoing in regard to the unlicensed use and imitation of human-developed and copyright-protected content. Organisations that market AI tools often do not own the material they use to train AI, which questions the legitimacy of its use (Peres *et al*., 2023; Smits & Borghuis, 2022). In fact, a number of lawsuits have already been filed against such unauthorised use of content, and in case the court finds such usage not falling under the fair use doctrine, organisations may be heavily penalised for using such content for AI training (Appel *et al*., 2023). It is thus highly important for AI developers and organisations that use GAI tools to take necessary measures to protect themselves and act in compliance with legal requirements. On the other hand, there is still no consensus on the applicability of intellectual property rights to the content and products generated by GAI (Peres *et al*., 2023; Smits & Borghuis, 2022). To what extent content produced by AI may be considered original? May it be copyrighted? May a person get credit for a product generated with the use of GAI?

Widening Socio-Economic Inequalities

Generative AI, such as ChatGPT, has other unintended socio-economic consequences in addition to those mentioned above, including socio-economic inequalities. While ChatGPT itself may not directly create socio-economic inequalities, its development and deployment can perpetuate and even exacerbate existing socio-economic disparities (Efe *et al*., 2022; Lutz, 2019; Kitsara, 2022; Zajko, 2022).

Important socio-economic disparities are related to digital inequalities (Efe, 2022; Pahl, 2023). Such inequalities can appear at three levels (Lutz, 2019). The first level relates to inequalities in access to ChatGPT, whereas the second level means inequalities in digital skills and technology use. The third and final level of digital inequalities concerns the benefits or harms resulting from the use of ChatGPT. ChatGPT does not require large investments by users, it is (as of 16 February 2023) free to use and only access to the Internet must be ensured. Therefore, it is widely accessible across a large set of countries and for many people. However, it turns out that ChatGPT usage is not widespread. According to Google Trends as of 26 January 2023, there is a positive correlation between human capital and ChatGPT search trends (Pahl, 2023). As human capital indicators are strongly correlated with the gross domestic product (GDP) per capita, it can be inferred that people in lower-income countries search for and use ChatGPT less. Furthermore, a positive correlation was also found between the number of STEM (science, technology, engineering, and mathematics) articles per capita and ChatGPT search trends (Pahl, 2023). This suggests that populations with lower scientific and innovation capacities also search for and use ChatGPT less. Taking all of this into consideration, we may infer that people in lower-income countries make less use of ChatGPT, even if it is free and widely accessible. The underlying causes of this inequality are many and varied. For example, there are some infrastructure barriers people may not have the appropriate skills or knowledge of how to use ChatGPT effectively. Additionally, people may not be aware of the potential benefits that can result from AI usage, both professionally and personally. People can also face infrastructure barriers, especially with the launch of a premium version of ChatGPT, which requires an access fee (Dwivedi *et al*., 2023).

These digital inequalities resulting from ChatGPT can be referred to as the 'AI divides,' which involve a competitive advantage gap, skillset gap, development level gap, and economic growth gap between countries, companies, universities, and individuals (Kitsara, 2022). Bughin and van Zeebroeck (2018) indicate that 'AI divides' fuel economic inequality and undermine competition. They also identify three emerging divide areas. The first divide is at the company level. It can be assumed that innovative and leading-edge companies could fully adopt ChatGPT and use it to strengthen their competitive advantage in the market, whereas companies that are unwilling or unable to implement ChatGPT at the same rate will lose market share and lag behind in the market. The second divide is related to the demand for high digital skills and labour demand toward socially or cognitively driven tasks. This could contribute to an increase in wage differentials and workers in the repetitive and low-digital-skills categories may experience wage stagnation or even reduction. The third divide concerns countries. Advanced economies are well-positioned to adopt AI, such as ChatGPT, due to their greater progress in implementing previous digital technologies, thus providing them with a clear advantage. By contrast, numerous developing economies face hindrances such as inadequate digital infrastructure, limited innovation and investment capacity, and low-skilled population, which prevent them from catching up with advanced nations in terms of AI adoption, including ChatGPT. Generally, the result of AI and ChatGPT better replacing human labour is that workers, populations, companies, countries, and regions lose their economic and political bargaining power and become increasingly dependent on those who control technology (Brynjolfsson, 2022). Based on the patenting and research activities, Kitsara (2022) revealed that the United States of America and China are leaders in AI innovation with Europe ranked third, whereas Asia, Latin America, and Africa are lagging behind.

In addition to 'AI divides,' bias and discrimination are potential threats to the use of AI (Efe, 2022; Farrokhnia *et al*., 2023; Khogali & Mekid, 2023). The problem of bias and discrimination in data and algorithms is a prominent concern in research on AI and chatbots (Dwivedi *et al*., 2023). One potential cause of bias in ChatGPT is the training data or the values held by the creators and users. This is a common issue with machine learning programs that are trained on data that represents only certain demographic groups or contains social biases (Khogali & Mekid, 2023). Generally, any biases or inaccuracies present in the training data can affect the model's output (Dwivedi *et al.,* 2023). The second cause of bias and discrimination is related to algorithmic decision mechanisms employed by creators of AI. The field of AI is highly homogeneous and dominated by white males, who are responsible for creating training models and selecting the data to train these models (Farrokhnia *et al*., 2023; Getahun, 2023). Efe (2022) confirmed that the limitations in gender and ethnicity diversity within the process of ChatGPT development are reflected in the algorithmic classification, training models, and estimation stages, resulting in a similar form of bias and limitations. Biased ChatGPT can have an extensive impact on specific societal groups and some demographic groups due to gender, race, age, income, and geography may be excluded from using ChatGPT and benefiting from it. The examples of bias are identified by Getahun (2023), *e.g*., when using AI by law enforcement turned out that Black people were twice as likely as White people to be misclassified as recidivists by AI, Amazon recruitment AI tool discriminated against female applicants, and the large language model Galactica – similar to ChatGPT – delivered false and racist information. Regrettably, unfiltered and extensive datasets obtained from the internet often contain biased information that subsequently influences the ChatGPT models. Moreover, since such data is drawn from the past, it tends to exhibit a regressive bias that does not capture the advancements made by social and economic movements (Getahun, 2023).

To avoid the emergence of 'AI divides' and tackle global disparities, it is essential to address the financial and physical capital deficits as well as the skills gap (Pahl, 2023). Firstly, it is critical to provide international financial and technical cooperation to assist the Global South countries in overcoming the cost and digital infrastructure barriers. Secondly, there is a need to focus on skills development and awareness-raising to bridge the skills gap. Generally, it is imperative to establish the appropriate circumstances to ensure that, like the objectives of the UN Sustainable Development Goals, nobody is left behind in the AI revolution (Kitsara, 2022). Based on the report of the UN Committee for Development Policy (UNCDP, 2018), it may be recommended to use macroeconomic and fiscal instruments to

promote AI development and usage, implement mechanisms that empower and encourage participation in AI development and usage, adopt social, legal, and economic policies to drive AI development and usage and prioritize support for the development and usage of AI in the least developed countries

To mitigate the potential risk of bias and discrimination in GAI, it is important to explore methods for increasing transparency and reducing bias in GAI, specifically ChatGPT. It is recommended to train ChatGPT on a large corpus of text and use a high-quality dataset that is relevant to the input prompt to ensure accurate and unbiased results (Dwivedi *et al*., 2023). There is a need for ongoing research to develop methods for detecting deep fake and stereotype data, which generate biases in the model's training data. Dwivedi *et al*. (2023) also stressed that it is equally crucial to examine how GAI and ChatGPT will impact the acquisition and transfer of knowledge for individuals, teams, organizations, populations, and countries. Simultaneously, we need to incorporate AI literacy into learning curricula and increase people's awareness to enhance their ability to properly evaluate, assess, and make use of these new technologies (Farrokhnia *et al*., 2023). Generally, Manyika *et al*. (2019) propose six steps to lead the way on bias and fairness related to AI development and usage. Firstly, organization leaders need to stay up-to-date on fast-moving AI research. Secondly, they should establish responsible processes that can mitigate bias when AI is deployed. Thirdly, they should engage in fact-based conversations around potential human biases. Fourthly, they should consider how humans and machines can work together to mitigate bias. Fifthly, they should invest more, provide more data, and take a multi-disciplinary approach to biased research. Finally, they should invest more in diversifying the AI field itself.

AI-Related Technostress

Technostress, as defined by Weil and Rosen (1997), refers to the negative psychological and physiological impact of technology on individuals. This may include increased anxiety, stress, and burnout due to the adoption or use of new technologies (Brod, 1984). With the increasing prevalence of AI-powered applications like ChatGPT, it is important to examine how GAI may be related to technostress. According to Ragu-Nathan *et al*. (2008), technostress concerns five dimensions: techno-overload (increased workload caused by ICTs), techno-invasion (intrusive influence on one's personal life), techno-complexity (difficulty learning to use ICTs), techno-insecurity (risk to jobs from ICTs), and techno-uncertainty (related to the constantly evolving nature of ICT developments).

Generative AI such as ChatGPT might lead to techno-overload if it accelerates work processes, causing users to work faster or handle more work than they can manage (Sayed *et al.*, 2022). Additionally, users might feel forced to adapt their work habits to incorporate the AI or face increased workloads due to increased standards for working norms and skills (Newman, Mintrom, & O'Neill, 2022). Moreover, GAI could contribute to techno-invasion if users feel obligated to use it outside of work hours to stay updated or maintain their professional competitiveness (Chen *et al.*, 2022). This may lead to reduced time spent with family or the feeling that personal life is being invaded by technology (Wu *et al.*, 2022). Furthermore, techno-complexity can be also boosted by GAI, if users find it challenging to understand and use the new technology (Hang *et al.*, 2022; Dijmărescu *et al*., 2022). This could lead to users not knowing enough about the technology to handle their job satisfactorily or finding it too complex to use new technologies (Wang & Zhao, 2023). Additionally, the use of technologies such as ChatGPT might contribute to techno-insecurity if employees feel threatened by co-workers with newer technology skills (Korzynski *et al.*, 2021). This could also result in reduced knowledge sharing among co-workers for fear of being replaced (Zhang *et al.*, 2022). Finally, continuous updates and improvements in AI tools might lead to techno-uncertainty due to constant changes in computer software, hardware, and networks within the organization (Li & Wang, 2021). As a result, users may struggle to adapt to the ever-evolving technology landscape (Ramos, Ferrittu, & Goulart, 2023).

To minimize technostress risks in relation to GAI, organizations may emphasize the importance of adequate training, manage expectations, create a healthy work-life balance, and foster a supportive organizational culture. A key aspect of minimizing technostress is providing users with sufficient training and support to enhance their understanding and proficiency in using AI technologies. Management should develop comprehensive training programs that cover essential features and functionalities, allowing users to navigate technology confidently (Kelley, 2022). Moreover, providing ongoing support

in the form of help desks, peer mentoring, and tutorials can address user concerns and alleviate the techno-complexity and uncertainty aspect of technostress (Brumfield, 2008).

To avoid techno-overload and techno-insecurity, it is crucial for management to communicate the capabilities and limitations of ChatGPT clearly (Tarafdar *et al.*, 2007). By setting realistic expectations and emphasizing that ChatGPT is a tool designed to enhance rather than replace human capabilities, employees will be more likely to adopt a collaborative attitude towards the technology. This approach can help to mitigate the fear of job loss and the pressure to constantly update skills (Arslan *et al.*, 2022). Addressing the techno-invasion aspect of technostress requires management to establish policies that promote a healthy work-life balance (Nabawanuka & Ekmekcioglu, 2022). For instance, organizations could set guidelines for using ChatGPT outside regular working hours, encouraging employees to disconnect during vacations and personal time. By fostering a culture that respects personal boundaries, employees will be less likely to feel that their lives are invaded by technology (Korzynski, Kozminski, & Baczynska, 2023).

CONCLUSIONS

There have been many debates about the dangers associated with the development and application of GAI, especially ChatGPT. Potential biases, privacy and security hazards, ethical questions, and the creation of damaging or deceptive content all fall under this category. Generative AI is still being created and used in many different contexts, despite these worries, which raises serious considerations regarding the social and ethical consequences of these technologies.

It is important to regulate the AI/GAI market. Advocating for the regulation of the AI market is crucial to ensure a level playing field, promote fair competition, protect intellectual property rights and privacy, and prevent potential geopolitical risks. To mitigate risks connected with a lack of information quality control, disinformation, deepfake content, and algorithmic bias, the use of diverse and high-quality pre-approved datasets and the implementation of human feedback loops is recommended. Other recommendations include establishing clear guidelines and standards for the use of ChatGPT, implementing fact-checking mechanisms, monitoring social media platforms, and educating users on how to identify and avoid disinformation. Moreover, establishing clear and strict policies and guidelines for the use of deepfake technology in various industries could improve the digital landscape. The changing job market requires workers to continuously acquire new (digital) skills through education and retraining. As the training of AI systems becomes a prominent job category, it is important to adapt and take advantage of new opportunities. To mitigate the risks related to personal data violation, social surveillance, and privacy violation, GAI developers must prioritize ethical considerations and work to develop systems that prioritize user privacy and security. To avoid social manipulation and weaken ethics and goodwill, it is important to implement responsible AI practices and ethical guidelines: transparency in data usage, bias mitigation techniques, and monitoring of generated content for harmful or misleading information. There is a need to address financial and physical capital deficits and skills gaps to tackle global disparities and avoid the emergence of 'AI divides.' Providing international financial and technical cooperation and focusing on skills development and awareness-raising are crucial actions to assist Global South countries in overcoming the cost and digital infrastructure barriers. It is imperative to establish appropriate circumstances to ensure that no one is left behind in the AI revolution and to use macroeconomic and fiscal instruments to promote AI development and usage.

More research is required to fully comprehend these concerns and design adequate safeguards to limit the potential repercussions of GAI. This involves creating ethical and legal frameworks that take into account the potential benefits and drawbacks of these technologies.

Researchers, politicians, and business leaders must collaborate to guarantee GAI is developed and implemented responsibly and ethically in light of the rapid pace of technological advancement in this domain. This way, we can make sure these technologies reach their maximum potential while limiting any bad effects they might have on society.

Despite the risks and threats associated with GAI, particularly with ChatGPT, we recognize its tremendous potential for use in various sectors and industries of the economy. It is undeniable that GAI will be increasingly utilized in the future. Thus, we recognize the need for responsible develop-

ment and use of GAI, while also acknowledging its potential benefits. That said, we believe that with proper regulation and ethical considerations, GAI – including ChatGPT – can greatly enhance human capabilities and improve various aspects of our lives. Therefore, we are supporters of the continued development and use of GAI technology.

This article, like any other in scientific literature, has its limitations. Being a kind of investigation report, the article refers to the very beginning of the study, so it can only be considered exploratory. When it comes to economy and business (economics, finance, marketing, management, informatics, law and related fields), we have not reviewed every article that touches on the risks and dangers of GAI and Chat GPT. As a result, the next round of research needs to have a much broader subject approach. This article's overview provides a high-level response to the article's exploratory inquiry. This means that the next phase of research should consider a broader perspective of the findings that have already been published and employ a more methodological approach like a bibliometric analysis and proper software.

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