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The Adverse Effects of Artificial Intelligence on Employment Process: A Critical Analysis

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Research Article

ABSTRACT

The advent of artificial intelligence (AI) and its integration into the workplace and employment process is driven by the growing need for efficiency in human resource management practices. Before AI's incorporation, the employment process of recruitment, selection and placement was predominantly human centric, labour intensive and time consuming. This traditional approach however allowed for a nuanced of applicants, factoring subtle cues and personal interaction which are overlooked by AI automated systems. Despite the efficiency and transformation that AI technologies bring to the workplace, its integration into the employment process has not been without significant implications. Application of AI in employment is raising concerns among scholars and AI experts about displacement of workers in wider set of jobs and tasks across most of the skills and wage spectrum. The predominant focus of current researches and studies on impact of AI in employment are on investigating its economic and efficiency outcomes while its adverse effects on employee morale, workplace dynamics and other social- psychological impacts were largely under-researched. A critical analysis of this gap within the context of adverse effect of AI integration to the employment process is the primary focus of the paper. Being an enquiry after the fact, the ex-post-facto research design was adopted while the Socio-Technical System Theory was used to anchor the theoretical analytical framework of the paper. The paper found that the level of AI integration into the workplace and employment process in the US and Europe has reached 25 percent with significant adverse effects such as major job displacements with a projection by the McKinsey Global Institute 2018 study that by 2030 when AI integration into the workplace attains 80 percent more than 50 percent of global industrial activities would be driven by AI systems resulting in the loss of over 800 million global jobs in the manual and mid-skilled categories to automation. The paper also found evidences of AI algorithm bias against the employment of certain categories of employees as well as breaches of employee's personal privacy by AI machines. Some policy recommendations were suggested as a way forward.

Keywords: Artificial intelligence (AI), employment, displacement, process, workplace

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INTRODUCTION

Artificial Intelligence (AI) is the simulation of human intelligence processes by computer systems. It is an emerging automation technology which is the current advance trend in digital technology. It has evolved from early computational theories to sophisticated machine learning and neural network systems. The digital technology preceding AI according to Ozkiziltan and Hassel (2021) were routine-based and were designed to replace routine mental and physical tasks being performed by mid-skilled workers. The new generation AI technologies on the other hand are predominantly skill-biased and they are designed to automate human skills such as matching, prediction, perception and cognition (Ozkiziltan & Hassel, 2021). AI now plays a pivotal role in various industries particularly in human resource management (HRM) function within the context of employment process (Russell & Norvig, 2021). Compared to previous digital workplace technologies application of AI is raising concerns about displacement of labour in a wider set of jobs and tasks across most of the skill and wage spectrum, in such a way as to make workers obsolete (Samoili et al., 2020). According to Ozkiziltan and Hassel (2021) the integration of AI in the workplace in the developed economies is increasing by 25 percent annually. Within the context of HRM, the AI system application facilitates tasks such as recruitment, performance evaluation and employee management, thereby transforming traditional human resource practices (Brynjolfsson & McAfee, 2020). However, Bessen (2021) noted that this development also presents challenges such as potential job displacements and ethical concerns. The technological shift has thus created losers in the labour market such as women, younger, older workers and workers of certain ethnic and minority backgrounds holding jobs that can easily be automated.

Current research and studies of AI integration into human resource management (HRM) have shown that the focus and research efforts were predominantly on AI's economic and efficiency outcomes while its adverse effects on employee morale, workplace dynamics and other employment processes have been largely under-researched (Brougham & Haar, 2021). Addressing this research gap is the aim of this paper with the primary objective of extending existing scholarship and knowledge.

The rapid integration of artificial intelligence (AI) in employment processes has revolutionized traditional human resource practices, introducing efficiencies and new capabilities. However, this technological advancement also poses significant challenges and adverse effects that require critical examination. One major issue is the potential displacement of workers due to AI-driven automation, leading to job insecurity and economic inequality (Susskind, 2020). Additionally, there are concerns about bias and discrimination in AI recruitment algorithms, which may perpetuate existing inequalities (Raghavan et al., 2020). Despite these significant issues, current researches often overlook the nuanced impacts of AI on employee morale and workplace dynamics, focusing predominantly on economic and efficiency outcomes (Brougham & Haar, 2021).

This paper aims to fill these gaps by critically analysing the adverse effects of AI on employment, particularly regarding job displacement, algorithmic bias, and their broader socio-economic implications. It will also explore the psychological and social effects on employees, such as stress, job satisfaction, and workplace relationships, which have been under-researched. By addressing these overlooked areas, this paper seeks to provide a comprehensive understanding of AI's impact on employment and offer insights for developing fair and effective AI integration strategies in the workplace.

This research paper is an enquiry after the fact. In this context, the ex-post-facto research design was adopted as the appropriate research approach relying primarily on qualitative data generated from peer-reviewed current researches and studies, published specialist literature on AI, data from library databases and from internet sources such as Google scholar research website. Data collected was subjected to critical content analysis to provide answers to the following research questions (which also define the scope of the paper):

- a. What is AI as a concept?
- b. What are the social impacts of integration of AI technologies into the employment process?
- c. What are the adverse effects of AI integration into the employment process?

CONCEPTUAL CLARIFICATION

In-Depth Analysis of AI as a Concept

Since it was first used in the mid-1950s, AI as a terminology and concept has remained a contested issue. John McCarthy who coined the term in 1955 created the uncertainty when he was quoted to have stated that “As soon as it works, no one calls it AI anymore” (Samoili et al, 2020). In the AI literature there are over 55 definitions of what constitute AI. In the European Commission’s Joint Research Centre Report on AI, the concept was defined as:

“A generic term that refers to any machine or algorithm that is capable of observing its environments, learning and on the knowledge and experienced gained, taking intelligent action or proposing decisions” (Craglia et al., 2018; p65)

The OECD’s AI Expert Group conceptualized an AI system as:

“A machine-based system that can for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments” (OECD, 2019; p 785)

IBM on the other hand defined AI as:

“The capability of a computer program to perform tasks or reasoning processes that we usually associate to intelligence in human being (Rossi, 2016; p 17)

Samoili et al, (2020) attempted to provide a general operational definition of AI by conducting a review of 55 existing definitions published in academic documents and literature between 1955 and 2019. From these studies, the authors though unable to provide a standard or official operational definition of AI, were able to identify four features attributable to AI on which there was general consensus and recommended the European Commission’s High Level Expert Group definition on AI as comprehensive which conceptualized AI as:

“Software or hardware systems designed by humans that if giving a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge or processing the information, derived from this data deciding the best action(s) to take to achieve the given goal” (Al. HLEG, 2019; p 59)

According to Zysman and Nitzberg (2020), there is a general consensus that

AI applications are classified into two systems namely; “narrow” also referred to as “narrow AI” and applied AI also known as “weak AI”. This classification is due to the fact that though AI applications can compete or surpass human intelligence, they are incapable of transferring their skill out of their programmed domain.

From the literature, two historic events heralded the emergence of AI technologies namely; the “Turing test” and Dartmouth Summer Research Project on AI. The Turing test was devised by Alan Turing and English mathematician in 1950. Turing initiated a method of inquiry to determine whether a computer uses human like thinking in completing tasks in such a way that if a human interacts with both a machine and a human and cannot determine which one is the machine. Collins (2019) noted that the Turing methodology is still used to evaluate AI systems today. The Dartmouth Summer Research Project on AI was a workshop put together in 1956 by scientists that laid the foundation of AI (Haenlein & Kaplan, 2019). It was from the proceedings of this workshop that the term AI was used and the possibilities of

“How to make machines use language, form abstractions and concepts, solve kinds of problems reserved for humans and improved themselves” was discussed (Mitchell, 2019; p 15)

The aftermath of the Dartmouth workshop led to a series of breakthroughs starting with the invention in 1959 of the “General Problem Solver” an all embracing machine that was designed to solve various kinds of problems, followed by the “ELIZA”, the first natural language processing computer designed in the mid-1960s (Acemoglu & Restrepo, 2019). After these initial successful outcomes there followed a season of unfulfilled expectations in AI research in the mid-1970s referred to as “AI winter” due to

waning public interest and cuts in funding for field study led to AI research deceleration (Mitchell, 2019). The decades from 1990s to early 21st century saw a resurgence of interest in AI research referred to as “AI spring”.

According to Acemoglu and Restrepo (2020), the AI technologies breakthroughs during this new season started with the invention of IBM’s Deep Blue Computer machine in 1997 with enhanced human intelligence in prediction and pattern recognition, followed by Google online translation tool in 2006. In 2010, the self-driving car was designed while in 2016, Google’s Alpha GO, a computer program using reinforcement learning became a tangible reality heralding AI’s capability for human like intellect (Craglia et al., 2018). The leap forward in AI technologies from the onset of the 21st century was attributed to the exponential increase in computing power and widespread usage of the internet (Ernst et al, 2018). By the beginning of the 21st century, the advances made in digital technologies led to the emergence of “Generative AI” referred to as, “Gen AI” with specialized domain.

According to Zysman Nitzberg (2020), the specialized domains of AI are namely:

- i. Machine Learning (ML) which is the most widely used AI technique that allows computer system to learn from data, to solve problems and to improve performance on the task for which the machine was designed. ML rely on computational statistical inference and used large datasets to produce successful outcomes on a well-defined narrow problem areas (Eldred, 2019). ML finds applications in supervised learning, unsupervised learning, deep learning and reinforcement learning. ML algorithms are trained on data to make predictions or

- decision (Zande et al., 2020). Currently, ML systems according to Schaefer et al (2020) outperform humans in their speed and scale in pattern recognition, diagnosing rare diseases or strategy games. However, ML algorithms have two limitations. First is with its native environment as the computer system is unable to make sense with data that have no resemblance to its training data and secondly, ML lacks flexibility as the program encounters difficulties when extrapolated across a wider ecosystem (Neff et al., 2020).
- ii. Deep Learning (DL) also referred to as “deep artificial neural network” is a computer program designed to simulate the configuration and functionality of the human brain (AI HLEG, 2019). DL algorithms make use of large data sets and enhanced capacity as the data grows bigger, thereby having an advantage over supervised and unsupervised ML system. DL finds commercial applications in voice recognition, language translation and image labelling (Brynjolfsson & McAfee, 2017).
 - iii. Reinforcement Learning (RL) is a computer program designed to learn from experience, for a set goal to be achieved with permissible actions and restraints. RL is embedded in complex computer games, as well as other commercial applications such as self-driving vehicles, drones, stock market trading tools and defence technologies (Craglia et al., 2018).
 - iv. Natural Language Processing (NLP) is a field of artificial intelligence (AI) that deals with the ability of computer systems to understand and generate human language. NLP algorithms are used to analyse text, comprehend, converse with users and perform tasks like language translation, sentiment analysis, and question answering (Ebers, 2020).
 - v. Computer Vision (CV) empowers computers to 'see' and comprehend the visual world, analyzing images and videos like humans. CV algorithms analyze images and videos for tasks like object detection, face recognition, and self-driving cars (Raji et al., 2020). These specialized AI domains are presented in Figure I.

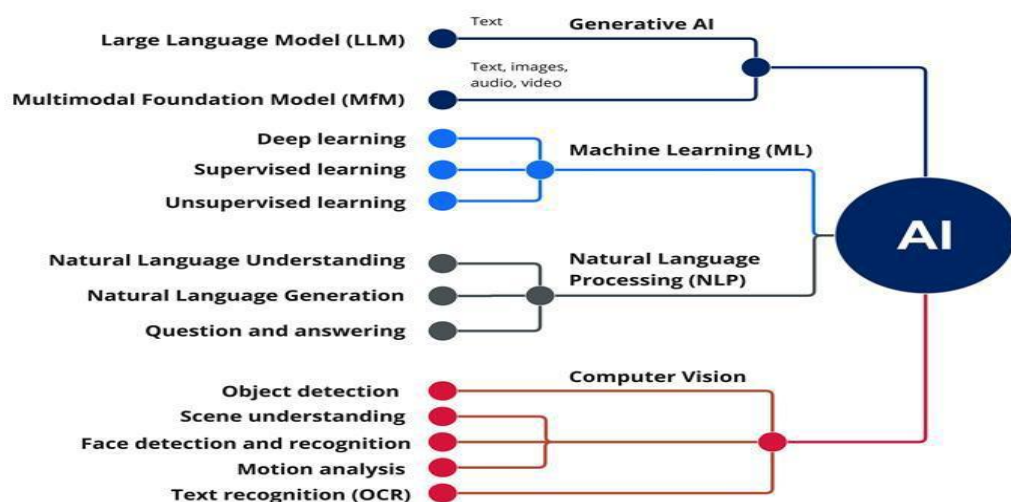


Figure I: Specialized domain of artificial intelligence (AI). **Source:** European Commission’s High Level Expert Group on AI (AI HLEG), 2019

According to Alekseeva et al. (2020) the creative potentials and capabilities of AI makes it a general purpose technology (GPT) like electricity and internal combustion engines that are characterised by their dynamism as well as have a variety of applications in a wide range of sectors. For instance, AI-powered algorithms specialised in prediction, perception and matching skills assist in monitoring and managing employees and AI-supported chatbots take orders and track them as well as register customer complaints (Zande et al., 2020). In addition, robots equipped with matching, perceptive and cognitive AI technologies map out best routes, sort, pick, weigh, shelve and transfer items without human input in warehouses (Logistic IQ, 2019). AI-based prediction systems are used in financial credit application in banks, bail decisions in courts, surgical operations and medical treatments in hospitals, cognitive AI is used to detect malware and to prevent money laundering by anti-financial and economic crime agencies like Economic and Financial Crimes Commission (EFCC) in Nigeria and the International Criminal Police Organization (INTERPOL). AI as a GPT has also been applied to the employment process with resultant transformation of traditional human resource management (HRM) practices (Russel & Norvig, 2021).

A Critical Analysis of AI in Employment Process

Information and data from recent researches and extant literature indicated that integration of AI into the employment process has created an ongoing controversy. Spearheading the scholarly disagreement has been the result of Frey and Osborne (FO) study conducted in 2013. The FO study using data on 702 occupations from 2010 US employment databases revealed that 47 percent of total US employment would disappear by 2033 as a result of AI integration into the

workplace. Other researchers such as Bowles replicated the same FO approach in 2014 but using ILO data which was based on the 2012 EU Labour Force Survey, reported that between 45 percent and 60 percent of jobs in Europe could disappear by 2034 to automation. Similarly, in 2015 Brzeski and Burk using 2010 data from the German Federal Employment Agency database reported that 59 percent of jobs in Germany are at high risk of being replaced by automation by 2033. The foregoing statistics has continued to generate debates and controversies among scholars whether AI has the power to make human labour redundant especially within the context of increasing application of AI into employment process which is increasing by almost 25 percent annually in the USA and Europe (Zysman & Nitzberg, 2020). Despite these scholarly disagreements, there is a widespread consensus that the integration of AI into human resource management (HRM) has significantly transformed the traditional functions of human resource management especially within the context of employment relations. It is in this regard that Brougham and Haar (2021) asserted that the integration of Artificial Intelligence (AI) into employment processes heralds a transformative era, offering both profound opportunities and formidable challenges. AI technologies, encompassing machine learning algorithms, natural language processing, and robotics, promise to revolutionize workplaces by enhancing efficiency and productivity. Tasks that were once time-consuming and labour-intensive can now be automated, freeing up human resources for more strategic and creative endeavours. AI systems can analyze vast amounts of data with unparalleled speed and accuracy, enabling organizations to make data-driven decisions swiftly and effectively (Raji et al., 2020).

However, Chui et al (2018) noted that alongside these advantages, AI

introduces significant risks, one of the foremost concerns according to the authors, is job displacement. As automation and AI-driven technologies replace routine and repetitive tasks traditionally performed by humans. In addition, AI systems are susceptible to biases embedded in their training data, potentially leading to discriminatory outcomes in decision-making processes (Huang & Rust, 2021). Privacy and security are also critical issues, with AI's ability to collect, analyze, and utilize personal data raising concerns about data protection and surveillance (Ebers, 2020).

To navigate this complex landscape, Chui et al (2018) posited that a balanced approach is essential. Organizations and policymakers must prioritize ethical AI development, ensuring that AI systems are designed and deployed in a manner that upholds fairness, transparency, and accountability. Raji et al. (2020) observed that updating legal frameworks to address the unique challenges posed by AI, such as data privacy and algorithmic transparency is imperative. In addition, investing in continuous employee reskilling and fostering a culture of adaptability will empower the workforce to thrive in collaboration with AI, thereby maximizing its benefits while minimizing its risks.

The fear of being replaced by AI is a major source of stress and anxiety among employees. Research shows a strong link between job insecurity and worsening mental health (Dukes et al., 2020). The persistent threat of job loss due to automation can cause chronic stress, which adversely affects employees' mental and physical health. This anxiety is especially acute in industries where automation is progressing quickly, such as manufacturing and logistics (Huang & Rust, 2021). The integration of AI into the workplace significantly transforms human-AI collaboration, affecting team cohesion and morale. Employees might feel marginalized by AI systems that make key

decisions, resulting in feelings of alienation and decreased job satisfaction (Brynjolfsson & McAfee, 2019). The dynamics of workplace interactions shift as AI systems assume more decision-making responsibilities, which can undermine the importance of human judgment and experience (Brougham & Haar, 2021).

Enhancing legal frameworks to address AI's implications on employment is crucial. Policymakers should promote responsible AI use and ensure worker protection by updating regulations to address the ethical and practical challenges posed by AI (Calo, 2017). This includes developing standards for data privacy, algorithmic transparency, and the ethical use of AI in decision-making processes (Cath et al., 2018). International collaboration on AI regulation can also help harmonize standards and prevent regulatory arbitrage (Schwartz, 2020).

THEORETICAL FRAMEWORK

The following theories are applicable in understanding and analyzing AI's impact on employment process. Technological determinism theory suggests that technology shapes society and culture, often driving significant social change and economic restructuring (Lawson, 2013). This theory implies that AI, as a powerful technological force, will inevitably transform job markets and employment practices, potentially leading to job displacement and new forms of work.

Also, socio-technical systems theory, on the other hand, emphasizes the interplay between people and technology within workplaces. It posits that both social and technical factors must be considered to understand the full impact of technological innovations (Baxter & Sommerville, 2011). This theory suggests that successful AI integration requires balancing technological capabilities with

human needs, fostering collaboration between AI systems and employees.

Another theory is the Disruption Theory which examines how innovations displace existing systems and practices, often leading to significant industrial shifts (Christensen et al., 2018). Applied to AI, this theory would analyze how AI disrupts traditional employment practices, potentially creating new job categories while rendering others obsolete.

However, the socio-technical systems theory is the most appropriate for analyzing AI's impact on employment. Unlike Technological Determinism theory which may overlook human agency, or Disruption Theory, which focuses on market dynamics, Socio-Technical Systems Theory provides a balanced framework that considers both human and technological dimensions. Therefore, this paper will adopt the Socio-Technical Systems Theory as its theoretical analytical framework to analyze AI's influence on employment, ensuring a holistic understanding of its effects and promoting strategies for harmonious AI integration.

Empirical Review

Hirsch-Kreinsen et al. (2018) noted that findings from researches and empirical studies have confirmed that there are growing concerns with regards to the social consequences of AI integration into employment process such as possible job losses in manual and cognitive workplaces, forced flexibilization and precarisation as well as increasing stress at work.

A study by the McKinsey Institute (2018) reported that as a result of AI integration into the workplace, by 2030 an estimated 15 percent of the global workforce could be displaced by automation. In confirmation of this forecast, a ZEW study (2016) found that automation through AI application into the employment process had already destroyed

1.6 million jobs in Europe between 1999 and 2010.

In addition, a study by the German Institute for Employment Research (IAB) reported that a robot has the power to replace five workers on the shop floor (Dauth et al., 2017). Another study conducted by Nedelkoska and Quintini (2018) using the OECD and PIAIC database for the years 2011/2012 and 2014/2015 reported that over 66 million workers in the 32 OECD member countries stand the risk of losing their jobs to AI automation as the study showed 14 percent of jobs in OECD countries are highly automatable.

Wolter et al. (2016) study used scenario calculation to model the effects of AI integration into the employment process and reported that the impact on total employment by 2035 would be significant with "major upheavals between occupation and sectors".

There are however other studies on AI integration into the employment process such as that of Fraunhofer (2019), Peissner et al. (2019) and Sage-Gavin et al. (2020) that showed that some employees are optimistic about the use of AI and robots.

The studies of Fraunhofer (2019) and Peissner et al. (2019) revealed that only 8 percent of respondents expressed fear that AI could replace human work in their profession while 57 percent of respondents reported a balanced relationship between their profession and AI.

The Sage-Gavin et al (2018) survey of Accenture Executives and its 14,000 global employees reported that 67 percent of the respondents were "willing to work with intelligent AI machine", while 62 percent in the same study stated that "AI will have a positive effect on their work". Based on these findings, the authors concluded that "employees will not become redundant in the automated workplace of the future" (Sage-Gavin et al., 2018; p. 65).

From the foregoing, it is clear that there is yet to be a consensus in the academic debate on the extent of human labour to be replaced by AI technologies in the workplace of the future. However, according to Agrawal et al. (2019) the available literature is currently incapable of providing a satisfactory understanding of the full extent to which AI technologies impact the labour market and employment process due to the gaps in AI research.

Gaps in AI Research on Employment Process

Despite the many researches investigating the impacts of AI on the employment process or the world of work, the extant literature leaves significant gaps (Craglia, et al., 2018). This shortcoming means there is a limited view on some important matters. One significant gap pertains to the ethical implications and bias mitigation in AI application. While AI has the potential to reduce bias during the recruitment process, it can also perpetuate existing biases if not properly designed and monitored. Raghavan, et al. (2020) highlighted the necessity for further research to develop robust frameworks that ensure ethical AI application in talent acquisition. These frameworks should address the design, implementation and continuous monitoring of AI systems to prevent and mitigate biases.

Another area that requires more exploration is candidate perception and trust in AI driven employment process. Understanding how candidates perceive these processes and the factors that influence their trust in AI tools can provide valuable insights for organization. Nikolaou (2021) suggests that more research is needed to examine the impact of AI on candidate experiences and trust levels, which are crucial for maintaining a positive employer brand and attracting top talent.

Longitudinal studies on the effectiveness of AI impact in employment

process are also limited. Huang and Rust (2021) emphasized the need for more research to access the long-term impact of AI tools on recruitment outcomes, employee performance and retention rates. Such studies can comprehensively understand the sustained benefits and potential drawbacks of integrating AI into the employment process. Another notable research gap is in the area of investigating the optimal balance between AI-driven decision-making and human judgement in recruitment, selection and placement. Broughan and Haar (2021) pointed out that understanding how AI can complement human intuition and expertise can enhance the overall effectiveness of the employment process. Research in this area can help organizations leverage the strengths of both AI and human resource managers to make more informed and strategic hiring decisions. While AI holds great promise for transforming the employment process, addressing these gaps through further research is essential for maximizing its benefits and ensuring its ethical and effective application.

A Critical Analysis of the Adverse Effects of AI on Employment

Quantitative data offers insights into the extent of job displacement and the economic impact of AI. For instance, a study by the McKinsey Global Institute estimates that automation could displace up to 800 million jobs by 2030 (Manyika, et al., 2017). On the other hand, qualitative studies provide a deeper understanding of employee experiences and perceptions of AI in the workplace. Interviews and case studies have shown that while some employees appreciate the efficiency and support provided by AI systems, others have concerns about job security, fairness, and the ethical use of their data (Brougham & Haar, 2021).

Ensuring fairness, accountability, and transparency in AI systems is essential for minimizing biases and achieving

equitable outcomes. Developers must follow ethical guidelines and best practices to prevent discrimination and foster inclusivity (Floridi et al., 2018). For instance, conducting regular audits of AI systems and involving diverse teams in the development process can help identify and mitigate biases (Raji et al., 2020). In addition, transparent AI systems that explain their decision-making processes can build trust and reduce the risk of unfair outcomes (Doshi-Velez & Kim, 2017). From the foregoing analysis the incorporation of artificial intelligence (AI) into the workplace presents substantial challenges, such as job displacement, bias, privacy issues, and psychological effects.

The automation of routine tasks through AI technologies has been a significant cause of job displacement, particularly in sectors such as manufacturing and retail. AI's efficiency in performing repetitive and data-driven tasks reduces the need for human labour, leading to widespread unemployment and economic displacement (Acemoglu & Restrepo, 2020). For example, robots and AI systems can now perform tasks that were once exclusive to human workers, such as assembly line work in manufacturing and customer service roles in retail. This shift has resulted in significant job losses, as companies strive to cut costs and increase efficiency through automation (Bessen, 2019).

AI algorithms can perpetuate and even amplify existing biases in recruitment and management processes. When AI systems are trained with embedded biased data, they can develop discriminatory practices that unfairly disadvantage certain groups, particularly women and minorities (Raghavan, et al., 2020). For instance, AI-driven hiring tools have been found to favour male candidates over equally qualified female candidates, due to biases present in the training data (West et al., 2021). This perpetuation of bias not only affects the fairness of recruitment processes but also has broader implications

for workplace diversity and equality (Binns, 2020).

The fear of being replaced by AI causes significant stress and anxiety among employees. Research indicates a strong correlation between job insecurity and declining mental health (Dukes et al., 2020). The constant threat of job loss due to automation can lead to chronic stress, which negatively impacts employees' mental and physical health. This anxiety is particularly pronounced in industries where automation is rapidly advancing, such as manufacturing and logistics (Huang & Rust, 2021).

The integration of AI in the workplace significantly alters human-AI collaboration, impacting team cohesion and morale. Employees may feel marginalized by AI systems that make critical decisions, leading to a sense of alienation and reduced job satisfaction (Brynjolfsson & McAfee, 2014; Wahua, 2022). The dynamics of workplace interactions change as AI systems take on more decision-making roles, potentially undermining the value of human judgment and experience (Brougham & Haar, 2021).

The extensive data collection capabilities of AI systems raise significant privacy issues for employees. AI monitoring tools can track employee performance and behaviour in real-time, creating ethical dilemmas regarding the extent of employer oversight and employee autonomy (Zuboff, 2019). For example, AI systems that monitor keystrokes or track movements can infringe on employees' privacy, leading to a sense of surveillance and loss of autonomy (Ajunwa et al., 2017). This invasive monitoring can have negative effects on employee morale and trust in the workplace (Schmidt & Rosenberg, 2020).

Existing laws on data protection and employment often lag behind the rapid advancements in AI technology. Regulations such as the General Data Protection Regulation (GDPR) address some privacy issues, but significant gaps

remain in comprehensively governing AI use in employment (Ebers, 2020; Wahua, Mkombo, Okolobi, Dioha, & Attipoe, 2023)). For example, current legal frameworks may not fully cover the ethical implications of AI-driven decision-making or the potential biases embedded in AI systems (Rai et al., 2019). This regulatory lag creates uncertainty for both employers and employees, complicating the integration of AI in the workplace.

CONCLUSION

The integration of AI into employment processes presents both opportunities and challenges. While AI can enhance efficiency and productivity, it also poses significant risks such as job displacement, bias, and privacy concerns. In line with the theoretical framework, by adopting a balanced approach that considers both human and technological dimensions, organizations and policymakers can develop strategies to harness AI's benefits while mitigating its adverse effects. Ensuring ethical AI development, updating legal frameworks, and investing in employee reskilling are critical steps towards achieving a harmonious and equitable integration of AI in the workplace.

Policy Recommendations Gaps in Regulation

There is a pressing need for updated policies to address the ethical and practical implications of AI in the workplace. International comparisons reveal varied approaches to AI regulation, highlighting the need for harmonized regulations that ensure fair and equitable AI use (Veale & Zuiderveen Borgesius, 2021). For instance, while the European Union has made strides in regulating AI through frameworks like the GDPR and the proposed AI Act, other regions lack comprehensive policies, leading to inconsistencies and potential exploitation of regulatory gaps (Jobin et al., 2019).

Promotion of Human-AI Collaboration

Companies should adopt inclusive practices and invest in employee development to mitigate AI's adverse effects. Offering reskilling programs and fostering a culture of continuous learning can help employees adapt to AI-driven changes (Bessen, 2019). For instance, organizations can collaborate with educational institutions to provide training programs that equip employees with the skills needed to work alongside AI systems (Huang & Rust, 2021). Additionally, promoting human-AI collaboration rather than replacement can enhance job satisfaction and maintain employee morale (Brynjolfsson & McAfee, 2020).

Skills Gap and the Need for Reskilling

As AI takes over routine tasks, the need for advanced technical skills rises. Employees must adapt by acquiring new skills through reskilling initiatives, which presents challenges for both workers and employers (Frey & Osborne, 2017). The fast pace of technological change demands continuous learning and adaptation, which can be challenging for employees without access to training resources or support (Manyika et al., 2017). This skills gap widens inequalities in the labor market, as those unable to keep up with technological advancements risk being left behind (Chui et al., 2018).

Updating Legal and Regulatory Framework

Existing data protection and employment laws often struggle to keep up with the rapid advancements in AI technology. While regulations like the General Data Protection Regulation (GDPR) address some privacy concerns, there are significant gaps in comprehensively governing AI use in employment (Ebers, 2020). For instance,

current legal frameworks may not fully address the ethical implications of AI-driven decision-making or the potential biases embedded in AI systems (Rai et al., 2019). This regulatory lag creates uncertainty for both employers and employees, complicating the integration of AI in the workplace.

Ethical AI Development

Ensuring fairness, accountability, and transparency in AI systems is essential for minimizing biases and achieving equitable outcomes. Developers must follow ethical guidelines and best practices to prevent discrimination and foster inclusivity (Floridi et al., 2018). For instance, conducting regular audits of AI systems and involving diverse teams in the development process can help identify and mitigate biases (Raji et al., 2020). Additionally, transparent AI systems that explain their decision-making processes can build trust and reduce the risk of unfair outcomes (Doshi-Velez & Kim, 2017).

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