Review Paper

Artificial Intelligence and Anxiety: The Human Price of Adapting to a Smarter Workplace

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Abstract

Artificial Intelligence is changing the way people work, which means that people need to keep learning new things and improving their skills. But this change often happens without lowering the amount of work that employees already have to do, which puts a lot of stress on them mentally. As employees try to balance their learning needs with their daily tasks, they face problems like increased stress, anxiety, and feelings of not being good enough. Limited time for adaptation and the pressure to stay competitive make symptoms of burnout, fatigue, and lack of motivation worse. This paper examines the human toll of these competing demands. It stresses the need to deal with workload management and support systems in order to make long-lasting ways for workers to adapt to AI-driven environments. The findings of this study show that using AI makes things more efficient, but it also makes technostress, skill insecurity, and job polarization worse. Digital skill gaps and cognitive overload make anxiety and burnout worse, especially in workplaces that change quickly. The study underscores the essential importance of organizational communication, ongoing skill enhancement, and supportive policies, stressing that sustainable AI integration must reconcile technological progress with employee welfare and social equity.

1. Introduction

The ongoing evolution of industrial revolutions has continually reshaped the workforce and transformed the nature of work itself. Industry 4.0 (4IR) is now making big changes that change how people, technology, and the workplace interact with each other. The fast pace of technological change, the growing competition around the world, and big changes in what customers want and expect have all had a big impact on businesses, making them more complicated and dynamic [1]. It will probably change the skills that workers need. The need for tech skills is likely to grow a lot as more companies use robotics, automation, and artificial intelligence (AI) [2]. These new technologies have made business operations more efficient and opened up new ways to be creative and efficient. But the growing use of AI and automation has caused prices to rise. Employees are worried about their job security and well-being because technology is changing so quickly and they don't know what will happen to their jobs in the future [3].

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AI and other advanced technologies have made digital transformation happen at all levels of society, businesses, and individuals. This has created a need for flexible digital skills [4]. Digital skills, which are the flexible skills needed to use digital tools or software, are very important for the future of work. To solve the growing "digital skills crisis," which is the gap between the skills needed and the skills that workers currently have, governments, businesses, and schools must work together. The National Skills Coalition's 2023 report found that 92% of the jobs it looked at needed some level of digital skills. But about one-third of the people who work don't have the basic digital skills they need to do these jobs [5]. This gap in digital skills shows how important it is to make targeted investments to make sure the workforce is ready and the economy is fair.

People have been worried about technological unemployment for a long time, and for good reason: new technologies have a big effect on the workforce in many different ways [6]. Historically, technological advancements have catalyzed considerable wealth generation and productivity enhancements, while simultaneously causing significant disruptions [6-7]. When new technologies come out, the way people work changes. This often means that old jobs go away and new ones are created at the same time. The World Economic Forum's Future of Jobs Report (2024) says that 44% of workers' core skills will change in the next five years [8–9]. More than 40% of companies include analytical thinking, creative thinking, AI, and big data skills in their training programs because they are important for business [8-9].

According to the 2024 Global Human Capital Trends survey by Deloitte, 25% of respondents were worried about the need for new skills and job roles as a result of changes in technology and business models [11]. Workers also named other major threats to human sustainability, such as rising work stress that hurts mental health (53%), the risk of technology taking over jobs (28%), threats to physical safety or health (24%), the "always-on" economy (22%), digital monitoring without permission (22%), and a lack of connection in remote or hybrid work settings (20%) [11]. This shows that businesses need to take the lead on workforce development as AI changes job requirements and skill sets. But the quick use of AI in the workplace has also made people very worried about their health and safety. The Deloitte study also found that workers in workplaces with a lot of automation are much more likely to feel anxious, depressed, and burned out than workers in workplaces with less automation. In fields where AI is now a big part of everyday work, constantly having to learn new AI-driven tools and not knowing if you will have a job makes people feel even more unqualified, alone, and tired.

As AI technologies become more integrated into business operations, employees must adapt to these changes, resulting in considerable stress, anxiety, and fatigue, commonly termed technostress [13]. Some studies indicate that technostress might improve productivity and innovation; however, it is crucial to acknowledge the associated challenges, including anxiety, fatigue, and sleep disturbances [14-15]. These negative emotional reactions can make employees less willing to use new technologies, which could lead to resistance or not using AI systems. So, companies need to make sure that their plans for using AI don't just focus on the technology, but also on the mental and emotional health of their workers. A structured roadmap ought to synchronize individuals, processes, and technology while cultivating supportive environments that prioritize mental health [16].

This study conducts a thorough examination of the existing literature to explore the emotional and psychological effects related to the adaptation to AI-driven workplaces. In investigating the human cost of adopting a more intelligent workplace, it rigorously analyzes how the incorporation of AI technologies requires employees to learn new tools and processes while also handling their current responsibilities. This dual demand frequently leads to heightened stress, anxiety, and emotional fatigue, considerably compromising overall employee well-being [17]. The literature underscores the difficulties associated with the necessity for skill enhancement and adaptation to changing job roles. The evolving skill requirements across sectors, including healthcare, manufacturing, and financial services, are undergoing substantial transformations in skill demand, influenced by AI and automation, which engender feelings of inadequacy and isolation among employees [2]. This study aims to create a basis for future scholarly research by systematically identifying the emotional and psychological effects documented in the current body of research. The results are meant to help future research look more closely at the areas of impact that were found, which will help us better understand the human cost of AI integration in the workplace. These investigations will enhance the academic dialogue regarding workforce adaptation in AI-driven contexts and yield significant insights for tackling these essential challenges in forthcoming empirical research.

2. Literature Review

2.1. Transformation of Artificial Intelligence

AI has fundamentally changed how we work today, making it easier for us to work together, learn, and make choices [18][19]. AI is a big part of the changing "digital lifestyles" at work, and it has a big effect on how important decisions are made, which has a direct effect on how well the whole organization works [19]. Organizations that want to do well in today's competitive market must embrace AI.

2.1.1. Workplace Disruptions

The rise of Artificial Intelligence (AI) has changed the way people work in a big way by letting companies automate tasks [11]. In the age of Industry 4.0 (4IR), where AI integration is key to improving operational efficiency and employee engagement, organizations use AI to make workflows more efficient. They also need to plan their workforce strategically, which means giving employees new skills and training them to meet changing job demands [6]. Additionally, integrating AI presents significant challenges for organizations, especially in budgeting for training and development to equip employees with essential skills for success, as well as reassessing social safety nets and labor policies to accommodate this changing employment landscape [3].

AI has a lot of economic potential, but its widespread use has created a paradox. It creates jobs for highly skilled workers, which lets them take on more difficult and valuable tasks. Conversely, it heightens anxiety and job insecurity, especially among mid- and low-skilled workers whose positions are more susceptible to automation [12]. Adding one robot to a factory takes away an average of 6.6 jobs, and global estimates say that robotics alone will cost 20 million jobs by 2030 [20]. In the same way, as AI gets better, more than 30% of jobs around the world could be automated by the 2030s. This would put about 800 million jobs at risk, especially those that involve doing the same thing over and over again, like collecting data and running machines [21]. Goldman Sachs also says that automation could affect 300 million jobs around the world, showing how big the gap is between economic growth and job security [20].

These disruptions show how AI could change the economy in big ways, but they also show how dangerous it could be. A PwC study says that AI will add $15.7 trillion to the global economy by 2030 by making people more productive and increasing demand from customers [30]. But these benefits aren't shared equally. AI has a very different effect on different parts of the world. Advanced economies like the US and Denmark are better able to take advantage of AI's potential because they have strong digital infrastructure and skilled workers. Low-income and developing countries, on the other hand, have trouble adopting new technologies, which could make things even more unfair. The International Monetary Fund (IMF) says that AI could take over 60% of jobs in advanced economies, 40% of jobs in emerging markets, and 26% of jobs in low-income countries [22]. This difference shows the paradox of using AI: it creates jobs that need advanced skills, but it also makes people more anxious and insecure, especially those with mid- or low-level skills whose jobs are more likely to be automated [16].

2.1.2. Employment Theories

2.1.2.1. Technological Unemployment Theory

Improvements in technology, especially AI, have caused people to lose their jobs, especially in jobs that are easy to automate. The chances of a lot of people losing their jobs go up a lot as AI gets better and better at doing more and more things [23]. By 2030, automation is expected to rise by 15%, which means that more than 30% of jobs around the world will be automated. This change puts about 800 million jobs around the world at risk [21]. According to [21], the rate of automation will be different in different parts of the world. Africa will have 24.60%, Asia and Oceania will have 35.80%, Europe will have 27.20%, Latin America and the Caribbean will have 26.60%, and North America will have 25.50%. Even so, the threat of technological unemployment shows how important it is for workers to adapt quickly, which makes upskilling and reskilling programs even more important for preparing

for a future driven by AI [21, 23].

2.1.2.2. Skill-based Technological Change Theory

The Skill-Biased Technological Change (SBTC) theory posits that technological progress, especially in AI, benefits skilled workers by boosting their productivity and elevating the demand for their expertise, while displacing low-skilled labor, consequently exacerbating wage inequality [23]. Since the 1980s, SBTC has caused the education wage premium to go up steadily. Skilled workers' wages have gone up by an average of 3.3% each year, even though there are more skilled workers available [24]. The theory shows that jobs that aren't routine and require social skills, creative thinking, and problem-solving are becoming more valuable, while jobs that require middle-level skills are going away because of automation. By 2026, jobs that require social and cognitive skills and are less likely to be automated are expected to be the most common in the job market. These jobs will pay more and offer better opportunities for people with advanced education and training [23–24].

Critics say that SBTC oversimplifies the link between technology and jobs, even though it does explain the growing wage gap and the move toward jobs that require more skills. The theory mainly looks at the skills of workers instead of the specific tasks they do. This ignores the fact that not all high-skilled jobs are safe from automation and not all low-skilled jobs are equally easy to replace [25]. Even though there are some problems with SBTC, the evidence for it is strong, and technology naturally favors skilled workers over time. This emphasizes the critical necessity for extensive upskilling and lifelong learning programs to assist workers in adapting to technological advancements and to mitigate the expanding disparities in labor markets [23-25].

2.1.2.3. Job Polarization Theory

Job Polarization Theory talks about how new AI and automation technologies change the job market. AI-powered technologies frequently supplant routine tasks, resulting in considerable employment losses [26]. At the same time, there is a growing need for jobs that involve manual work but not as many routine tasks. This creates a polarized workforce, where job opportunities are growing at the extremes and shrinking for positions [23, 26]. These changes make income inequality worse because AI makes it easier for people with money and advanced technologies to make money, while making it harder for others to find stable jobs [27]. Additionally, organizations are putting more emphasis on efficiency and cost control, which has led to things like heavier workloads, lower pay, and stricter performance standards [23, 26–27]. These behaviors often make work relationships worse, make workers less happy, and lower work ethics, making work more stressful than fulfilling.

Job polarization affects workers' health and sense of self in addition to its economic effects. The increasing alienation of labor reduces chances for creativity and personal satisfaction, leading many employees to feel undervalued and disconnected [27]. As AI continues to change the way we work, we will need to focus on ethical work practices, fair skill development, and policies to close the gap between job opportunities and outcomes [23, 27].

2.1.3. Deskilling

AI and automation have made a lot of people less skilled, which has made people worry about how it will affect their mental and emotional health. Deskilling happens when tasks that used to need special skills are automated or made easier, making workers feel less capable and unappreciated [6, 19]. This trend is not limited to one field; it affects all of them, including healthcare, manufacturing, and service, where new technologies are replacing human expertise with automated solutions [14, 28]. This change in job requirements not only makes operations less efficient, but it also has a big impact on employees' mental health and career growth. AI makes things more efficient and costs less to run, but it also changes jobs by taking away tasks that used to require creativity and critical thinking. This means that workers have fewer chances to do meaningful, skill-based work [29].

Deskilling is especially hard for people who are just starting out in their careers. Using AI tools to make everyday decisions makes it harder to learn how to solve problems, which slows down long-term career growth. These people may feel like they can't keep up with the fast-changing job market, which can make them frustrated and

feel stuck [14, 29]. To deal with these problems, organizations need to keep an eye on and help their employees' emotional health during the AI adoption process. This will make the transition go more smoothly and lessen any negative effects [19]. If you don't pay attention to these emotional cues, you could lose interest, become less productive, and have a lot of employees leave [29]. To fight the bad effects of deskilling, companies need to come up with plans that balance the use of AI with chances for skill building and career growth. This involves creating an environment of ongoing learning, ethical oversight, and open communication to make sure that employees feel valued and supported in their jobs [29]. By taking care of these problems ahead of time, companies can lessen the emotional toll of deskilling and build a more flexible and strong workforce [19].

2.1.4. Economic and Social Implications

The incorporation of Artificial Intelligence (AI) in the workplace signifies a critical juncture in the continuous transformation of work, akin to prior industrial revolutions that redefined industries, employment dynamics, and societal frameworks [34]. The Fourth Industrial Revolution has brought about major changes in technology, and by 2030, more than 1 billion people will need to learn new skills because 42% of the basic skills needed for current jobs have already changed a lot [35]. This quick change shows how important it is to learn new skills and improve old ones in order to keep your job and stay employable in the face of AI-driven changes. At the same time, the mental health of workers has become a key part of a company's success, directly affecting productivity, employee retention, and the health of the whole organization [1, 36]. But these changes also bring about unknowns, stressors, and emotional challenges that put employment relationships to the test and change the way work works [15].

2.2. Psychological Impact of Artificial Intelligence

The integration of Artificial Intelligence (AI) in the workplace marks a pivotal moment in the ongoing evolution of work, similar to previous industrial revolutions that reshaped industries, employment relationships, and societal structures [34]. With the technological shifts of the Fourth Industrial Revolution, more than 1 billion people are expected to require retraining by 2030, as 42% of basic skills for existing jobs have already undergone significant changes [35]. This rapid transformation underscores the urgency of reskilling and upskilling to adapt to AI-driven changes, retain positions, and maintain employability. At the same time, the psychological well-being of employees has become a cornerstone of organizational success, directly influencing productivity, retention, and overall organizational health [1, 36]. However, these shifts also introduce uncertainties, stressors, and emotional challenges, testing the resilience of employment relationships and redefining the dynamics of work [15].

2.2.1. Technostress and Its Manifestations

Technostress, a term coined by Brod in 1984, refers to the stress caused by an inability to adapt to new technologies. As businesses use more advanced information and communication technologies (ICT) to stay ahead of the competition, employees often feel stressed out because they think they aren't good at ICT [37]. It is important to understand technostress because it affects the health of both individuals and organizations in the modern workplace [16]. Techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty are all parts of technostress. These stressors result in detrimental outcomes including role overload, role conflict, diminished job satisfaction, and employee disengagement, which may impede the effective implementation of AI technologies [37, 38].

- Techno-complexity comes from how hard it is to learn how to use AI and ML systems and how much work it takes to do so. Managers and employees often find it hard to adopt AI because they don't have the technical skills or the data quality problems that come with it [37, 38].
- Techno-uncertainty comes from how quickly AI technologies change. Employees and managers are unsure because of constant updates, system instability, and unclear long-term results. Business teams often feel uneasy because they don't know how technology will change in the future [16] [37][38].
- Techno-insecurity comes from the worry that AI and automation could take over jobs that people do.

Even in companies that value augmentation over automation, workers often worry about their job security in the long term, which adds to the stress at work [37].

- Techno-invasion, or role ambiguity, is another important sign of technostress. AI systems are automating simple tasks, which means that workers must take on more difficult jobs, often without enough training or understanding. People are confused and angry because they don't understand their new duties [37-38].
- Techno-overload is a major source of stress for employees, who worry that AI technologies will take over their jobs. Even in companies that encourage augmentation instead of automation, the fear of being laid off is still a big source of stress [12, 37].

2.2.2. Anxiety, Burnout, and Job Insecurity

The use of Artificial Intelligence (AI) in the workplace has led to major changes, but it has also caused a lot of stress for workers, including anxiety, burnout, and job insecurity. Fear of becoming obsolete and the constant pressure to learn new skills are two of the main reasons why people are anxious about AI adoption. It is marked by anxiety and the expectation of adverse consequences, such as job loss or challenges in adapting to new technologies [39]. According to a survey by Oracle, 51% of employees said they were worried about losing their jobs and their skills becoming outdated because of AI. This made them feel bad, like they were in danger of losing their jobs, anxious, and panicked [17]. AI-powered workplace surveillance systems also make performance anxiety worse because employees feel like they are always being watched and pushed to meet high standards.

Burnout often occurs with extended exposure to AI-related stressors. Burnout, which is characterized by emotional exhaustion, cynicism, and diminished personal efficacy, results in employees feeling drained and dissatisfied with their achievements [40]. This condition gets worse in environments where AI is heavily used, especially in jobs that require a lot of emotional and mental involvement [41]. Adapting to new technologies can make employees emotionally exhausted, which makes it harder for them to cope. Frustration with unreliable AI systems and unclear job roles can also make things worse [40]. Another big problem with using AI is that it makes people feel like they don't have a secure job. Workers in fields that use a lot of automation often see AI as a threat to their job security, especially in low-skill or routine jobs [12]. The uncertainty about how long their jobs will last stresses them out, makes them less happy with their jobs, and makes them more likely to leave [41]. Heightened awareness of STARA (Smart Technology, Artificial Intelligence, Robotics, and Automation) intensifies job-related stress as employees worry about the sustainability of their roles amidst rapid technological advancements [41].

2.2.3. Cognitive Load Theory

Cognitive Load Theory (CLT) is an important way to understand how workers deal with new technologies and the mental challenges that come with learning in a workplace that uses AI. As businesses add Artificial Intelligence (AI) and more advanced Information and Communication Technology (ICT) systems, workers have to deal with the dual pressures of quickly improving their skills while also doing their current jobs [70]. This dual challenge makes the brain work harder, which could overload a person's working memory and make it harder to learn. Managing cognitive load effectively is crucial for optimizing both learning and adaptation, as working memory has inherent limitations that affect an individual's ability to process and retain new information efficiently [42]. To learn well in these kinds of places, you need to find a balance between intrinsic cognitive load, which comes from the difficulty of the task, and extraneous cognitive load, which comes from bad task design [43]. When cognitive demands exceed an individual's capacity, it frequently leads to anxiety, stress, and reduced task performance, impeding organizational efficiency and employee well-being.

The interaction between cognitive load and anxiety exacerbates the psychological difficulties encountered by employees in AI-driven settings. Studies show that cognitive overload can have effects similar to anxiety, making it harder to make decisions and raising stress levels [44]. Anxiety interferes with cognitive processing and adversely affects working memory, essential for executing tasks under significant cognitive demands [45]. Poorly designed learning environments make these problems worse by putting extra mental stress on employees, which

makes it harder for them to really get into the material [46]. Moreover, too much freedom to explore difficult learning material can lead to cognitive overload, which makes it harder to engage with the material in a meaningful way [46]. In high-stakes situations like this, workers have to think about both the pros and cons of AI and human-driven decisions when they decide which one is better [26].

2.3. Conservation of Resources (COR) Theory

The Conservation of Resources (COR) Theory is an important way to look at the mental problems that employees have in workplaces that use AI. COR Theory posits that individuals endeavor to acquire, preserve, and safeguard valuable resources, encompassing material, energy, conditional, and personal resources. When Artificial Intelligence (AI) and other related technologies are used in the workplace, they can often put these resources at risk, which can cause stress and emotional exhaustion [36]. For example, workers may see AI as a threat to their job security, career advancement, and the usefulness of their skills, which are all important personal and conditional resources. This view, along with the uncertainty about how AI will affect things, leads to a cycle of resource loss that makes jobs more stressful, lowers cognitive performance, and lowers psychological resilience [17].

STARA awareness, which is how employees see the risks that smart technology, artificial intelligence, robotics, and algorithms pose, is an example of how AI integration can affect people psychologically. Workers who are more aware of STARA often feel more stressed at work because they are worried about losing their jobs, their skills becoming obsolete, and their organization's declining status. The "substitution effect" of AI, in which technology takes over or reduces human jobs, uses up resources like money (material resources), self-esteem (personal resources), and job opportunities (conditional resources). These losses not only make people more emotionally drained, but they also lower their work-affective well-being, which is marked by feelings like anxiety, guilt, and low self-worth [17].

COR Theory also talks about how losing resources happens in a cycle when job stress is always there. Employees who are stressed out have to put in more time and mental energy to handle their workloads and meet new demands. However, this investment often leads to further depletion, which creates a cycle of resource loss that makes emotional exhaustion and mental health risks worse [36]. The theory emphasizes that resource depletion constitutes a substantial stressor; when employees view AI as a threat rather than an opportunity, their capacity to replenish resources is diminished, exacerbating the psychological impact of AI integration.

2.4. Upskilling and Reskilling with Artificial Intelligence

With the rise of AI and automation, it has become necessary to focus on upskilling and reskilling workers to keep up with the needs of a changing workforce. Both steps are very important for getting people ready for changes brought about by AI. Dell says that 85% of the jobs that will be important in the future don't exist yet. This makes me wonder how to get ready for problems that aren't fully known yet. Even though the future is still unknown, businesses can take steps to protect their operations and employees in advance, making sure they are ready for anything that might happen [35].

2.4.1. Upskilling to Enhance Existing Capabilities

Upskilling means giving employees new skills so they can keep up with changes in technology and job requirements. As AI and automation change industries, skilled workers need to learn new skills like programming, data analysis, and digital literacy to stay relevant. But a large number of workers don't have these important skills, which means that people who can't adapt have fewer chances [7]. The Future of Jobs Report (2024) from the World Economic Forum says that half of all workers around the world will need to learn new skills by 2025 because of how automation and new technologies are changing the job market [47].

Employees often have to deal with both opportunities and problems when they take part in upskilling programs. These programs help workers stay competitive, feel more secure in their jobs, and make it easier for them to move

up in their careers. For example, STEM programs that focus on technical and business skills get people ready to do well in AI-driven environments [47]. However, employees often feel stressed and resistant when they have to learn new skills, especially if they don't believe they can do it or don't have the right tools. To be effective, training programs must be able to handle these problems, make sure that everyone can take part, and encourage employees to do so. Upskilling programs are also very important for closing the gap between what the current workforce can do and what is needed in the future. They help employees work well with AI systems and use advanced technologies [48].

2.4.2. Reskilling to Prepare for New Roles

Reskilling is about giving workers new skills so they can move into jobs that meet the needs of the industry, especially as AI and automation change the way traditional jobs are done. The World Economic Forum says that 65% of kids who start primary school today will work in jobs that don't exist yet. This shows how important it is to get workers ready for an uncertain future [47]. This need is especially strong in industries that require a lot of workers, where routine tasks are being automated increasingly, forcing workers to move into more technical or creative roles [47].

Reskilling programs help fill this gap by encouraging people and AI to work together, making sure that workers are ready to handle the changing needs of AI-integrated workplaces. Companies need to focus on reskilling their workers so they can work with AI. This means finding a balance between the benefits of automation and the problems that come with losing jobs. This process includes making work environments that encourage people and AI to work together, encouraging people to keep learning, and showing how both people and AI can work together to get things done. Strong reskilling programs not only lower the chance of losing a job, but they also give employees the skills they need to do their jobs well in new organizational settings [7].

2.5. Organizational Responses and Strategies

The use of Artificial Intelligence (AI) in the workplace has made it necessary for businesses, governments, and schools to come up with strategic ways to teach people new skills and improve the ones they already have. The goal of these efforts is to give workers the skills they need to succeed in a job market that is becoming more and more driven by AI. But the process also has big emotional and logistical problems, which shows how important it is to have specific responses and plans.

2.5.1. Corporate Initiatives

Companies are putting more money into programs that teach their employees new skills or improve their existing ones so they can handle the demands of AI technologies. To close skill gaps and encourage people to work with AI, programs that focus on technical skills like programming, data analysis, and digital literacy are being put into place [11]. To help employees deal with the emotional challenges that come with these changes, these programs often come with mentoring and coaching. Well-known examples show how industry leaders are working together to change the workforce. The AI-Enabled ICT Workforce Consortium, which includes Accenture, Google, IBM, Microsoft, and SAP, is an example of how companies can work together. This group of companies wants to train more than 95 million workers around the world in the next ten years. This is because AI is changing 92% of ICT jobs very quickly. The consortium's Job Transformation Canvas lists important skills like AI literacy, prompt engineering, and agile methodologies. This helps both workers and employers adjust to changes brought about by AI [49]. Companies like:

- Cisco wants to teach 25 million people about cybersecurity and digital skills by 2032.
- IBM wants to teach 30 million people new skills by 2030, with 2 million of those people working in AI roles by the end of 2026.
- Intel has promised to give 30 million people AI skills by 2030.
- Microsoft has already trained more than 12.6 million people in digital skills, which is more than its

goal of training 10 million people.
- SAP plans to teach new skills to 2 million workers around the world by 2025.

These programs show how big and important it is to meet the changing needs of a workforce powered by AI. Nonetheless, considerable obstacles persist, especially in promoting inclusivity and bridging communication gaps concerning AI's impact on job roles. To build trust and flexibility in employees, it is important to have open, ongoing conversations about career paths and AI's changing role in businesses [50].

2.5.2. Government and Policy Support

Governments have been at the forefront of promoting upskilling and reskilling initiatives to get their workers ready for the demands of a job market driven by AI. The European Reskilling Strategy and the World Economic Forum's (2024) Reskilling Revolution are two examples of initiatives that aim to match the skills of the workforce with the changing needs of the job market. These initiatives encourage cooperation between the public and private sectors to create complete training pathways [4, 8, 23]. But there are still big problems with making sure that everyone can get to and use the services. People who are part of marginalized groups, especially in rural areas or poor communities, often can't participate because they don't have enough resources or knowledge. The programs don't work as well as they could because people don't know about them. To close these gaps and make sure that upskilling programs reach everyone in society, we need to reach out to more people, customize programs to meet different needs, and use strong communication strategies [50].

Efforts across regions showcase diverse approaches:
- In Africa, programs like the African Union Digital Transformation Strategy and AI4D Africa Program work to improve AI skills, promote fair job growth, and encourage entrepreneurship [51].
- In Australia, the Digital Skills Organization (DSO) focuses on making training programs just for AI, and the AI Action Plan helps businesses use AI and retrain their workers [52].
- India: Skill India and FutureSkills PRIME are two of the most comprehensive programs that make AI training available to people with lower incomes. Other programs, like IndiaAI Compute Capacity and the National AI Portal, are more advanced [53][54][55].
- New Zealand: The Digital Technologies Industry Transformation Plan and Skills Highway Program make people more ready for digital work and give them basic AI skills [56].
- Singapore: Programs like TeSA and AI Singapore (AISG) help people get ready for AI jobs by giving them targeted training and hands-on project experience [57].
- The AI Sector Deal and the National Retraining Scheme in the UK put a lot of emphasis on retraining workers who have been affected by automation so that they can move smoothly into AI-driven roles [58].
- In the United States, programs like the National AI Initiative Act and the AI4K12 Initiative combine AI research with basic education to get people ready to work in a variety of fields [59].

These regional initiatives show how different governments are dealing with changes in the workforce caused by AI. But there are still common problems like making things easy to get to, including everyone, and communicating well. To get the most out of these programs around the world, it's still very important to deal with these problems in a clear way and with fair outreach.

2.5.3. Educational Institutions

Schools and colleges are very important for teaching future generations the skills they need to work with AI. Schools and universities want to make sure that their graduates are ready for a job market that is changing quickly by updating their curricula to include AI, STEM education, and entrepreneurship [46, 60]. But there is often a gap between what you learn in school and what you need to do at work. Graduates may feel unprepared for real-world problems, which can make them frustrated and less confident [60].

To meet these challenges, many colleges and universities spend a lot of money on programs that help students learn new skills that are in demand in the job market. For instance, universities are starting micro-credential

programs and modular courses that teach AI, data analytics, and digital skills. This lets students adjust to new technologies more easily [61]. These programs try to close the gap between what you learn in school and how you use it in real life, making sure that graduates have skills that are useful in the job market.

New technologies like AI tutors help make education fairer by filling in gaps in teaching and giving students personalized learning experiences. For example, more and more schools are using educational AI platforms to help their teachers with traditional teaching methods. These tools help teachers better support students, improve their critical thinking skills, and offer personalized learning paths, which leads to more engagement and better academic results [8-9]. Also, the rise of generative AI has made universities prepare students for a world that will be changed by this new technology. Institutions are concentrating on providing students with AI literacy, critical thinking, and ethical decision-making skills to effectively navigate AI-driven environments [10]. These efforts are meant to help graduates become more resilient and adaptable so they can do well in workplaces that use AI.
The rapid pace of technological progress makes it even harder to make sure that the curriculum meets the needs of the industry [46]. By adding real-world applications to academic programs, stronger partnerships between schools and businesses can help close this gap. Students will have the practical skills they need to do well in a job market that changes quickly thanks to partnerships with tech companies, internships, and hands-on learning opportunities.

2.5.4. Emotional Impacts and Communication Gaps

Adapting to changes brought on by AI has a big emotional cost. Employees often worry about losing their jobs and feel pressure to learn new skills. This uncertainty is often made worse when companies, governments, and schools don't give enough support or clear communication. This can lead to less motivation, disengagement, and possibly higher turnover rates [12]. Organizations are very important because they make it clear what AI means for jobs and make it clear how people can move up in their careers. Regular open dialogue, employee mentorship, and access to upskilling resources are some of the ways to reduce resistance to change, build confidence, and make the transition to AI integration go more smoothly [62].
Governments can help these efforts by making policies that encourage psychological resilience through full support systems like career counseling, mental health services, and campaigns to raise public awareness. Programs that help people learn new skills and retrain can help ease the stress of losing a job, making the transition easier for workers who are affected by AI-driven changes. Schools can help by teaching students how to manage their emotions and stress, as well as giving them the technical skills they need for jobs that involve AI. They get future workers ready to handle the stress that comes with technological change by combining AI literacy with programs for personal growth.

2.5.5. Self-Determination Theory (SDT)

Self-Determination Theory (SDT) offers a strategic framework to enhance motivation, resilience, and engagement among employees during the implementation of Artificial Intelligence (AI) technologies in the workplace. By meeting people's basic psychological needs for autonomy, competence, and relatedness, organizations can create a supportive environment that makes it easier for people to adapt to changes in technology. Autonomy is the need for people to be able to make their own decisions, competence is the need to be good at the skills that are important, and relatedness is the need to feel like they belong to a group [28]. Meeting these needs increases motivation, well-being, and job satisfaction, while not meeting them decreases satisfaction and engagement [63].
Organizations can use SDT-aligned strategies to help their employees adjust to changes brought on by AI. For example, participatory decision-making processes let employees take part in talks about how to use AI, which gives them a sense of independence and ownership [28][64]. Offering personalized training programs that focus on the technical and practical uses of AI helps employees become more skilled, which makes them feel confident and capable in their jobs. Research shows that workplaces that support autonomy by giving employees meaningful choices and constructive feedback make them happier, more engaged, and less likely to leave [65]. At the same time, encouraging a culture of collaboration and continuous learning strengthens relationships, encourages

knowledge-sharing and teamwork, and makes the workplace more cooperative even when technology changes quickly.

Relatedness is very important when organizations are going through changes that involve AI integration. Workers who feel like they belong with their coworkers and are supported by their teams are more resilient and motivated [65]. This feeling of belonging helps people deal with stress and encourages them to take the initiative when faced with new challenges, making it easier for them to adapt to new technological needs. Furthermore, companies that strike a balance between giving employees freedom and setting clear goals help them align their personal work with the company's goals, which is good for their mental health [64]. Organizations that use SDT principles in their plans not only meet their employees' basic needs, but they also create an environment that is good for long-term growth and new ideas.

In the end, SDT emphasizes how important it is to give employees the tools and a supportive environment they need to grow and develop. This alignment fosters resilience, psychological well-being, and intrinsic motivation, guaranteeing that the workforce remains productive and adaptable in an AI-driven environment. These strategies help the organization as a whole reach its goals of being flexible, keeping employees happy, and being able to last for a long time [28, 63].

3. Findings and Discussions

The incorporation of Artificial Intelligence (AI) into contemporary workplaces has profoundly transformed organizational dynamics and individual experiences [66]. AI has made things more efficient and creative than ever before, but it has also caused deep psychological and social problems. Employees often say they are more stressed and anxious because they are afraid of losing their jobs and feel like they have to learn new skills all the time. Technostress, which is the emotional toll of technology, shows up as fatigue, anxiety, burnout, and less motivation, especially in places where technology is used a lot [67]. This situation shows how AI integration can be both good and bad, as new technologies can make jobs safer and more dangerous at the same time.

The growing digital skills gap is one of the biggest problems that has been found. Research shows that 92% of jobs today require digital skills, but almost a third of the workforce does not have basic digital skills [5]. This skills gap makes it harder for people to get jobs and makes inequalities worse, since developed countries are better able to take advantage of AI's benefits than developing countries. Also, AI-driven changes in the workplace have caused job polarization and deskilling. High-skill jobs are doing well, but middle-skill jobs are becoming less common. This makes many workers feel unappreciated and unsure about their future.

In addition to the economic effects, the psychological effects of AI integration have become a major worry. Workers in industries that use a lot of automation say they are more stressed and burned out because they have to learn how to use new tools while still doing their regular work [67]. Cognitive overload, which happens when AI has a steep learning curve, makes stress worse and makes it harder to do tasks. These problems are especially bad in industries where AI is being adopted quickly and job roles and expectations are always changing.

The results also show how important organizational strategies are for dealing with these problems. Clear communication and strong upskilling programs are key to easing workers' worries and encouraging flexibility. Companies that put emotional resilience first and make it clear how to move up in their careers are better able to handle the challenges that come with AI-driven changes. Government and educational programs that aim to close skill gaps and make training more accessible are also very important for creating a supportive environment for workers to adapt.

4. Future Research Scope

- ▪ Look into practical ways to balance the two needs of upskilling and current duties in AI-driven

workplaces. This research may investigate strategies including task redistribution, AI-assisted automation for routine activities, or time management policies to mitigate employee stress and burnout.

- Examine the differential impact of AI-driven changes on employees, considering factors such as age, experience, gender, and job roles. For instance, research might investigate whether younger employees acclimate more swiftly to AI integration owing to their technological familiarity, or whether experienced professionals face increased job insecurity.

- Investigate the frequency and advancement of stress and burnout in sectors experiencing swift AI integration. The research could concentrate on pinpointing particular triggers, such as steep learning curves or job ambiguity, and effective interventions to mitigate these challenges.

- Investigate the potential of targeted reskilling initiatives to mitigate employees' perceptions of inadequacy and anxiety. Research could examine the relationship between engagement in reskilling programs and enhancements in perceptions of job security and employee confidence.

- Examine the reasons employees oppose AI technologies, despite their awareness of potential advantages. This research could examine misconceptions regarding AI, apprehensions about job displacement, and sentiments of inadequacy, providing insights into the cultivation of a culture of acceptance and trust.

- Assess the efficacy of current emotional support systems, including counseling, peer mentoring, or mental health programs, in assisting employees to manage the psychological challenges related to AI integration. The study might find the best ways for organizations to support their employees.

- Examine the ways in which AI changes traditional job roles and creates new hybrid roles that need people and AI to work together. Research could determine if these modifications enhance employees' sense of value or intensify feelings of inadequacy and alienation.

- • Look into how easy it is for employees to get better at their jobs and how well it works, especially for those who haven't used technology much before. Research could investigate whether existing training methodologies adequately tackle the challenges encountered by these groups.

- Examine the differences in AI adaptation challenges between developed and developing nations. For instance, research could examine how regional variables such as infrastructure, educational attainment, and economic resources influence the psychological and professional costs of AI adoption.

- ☐ Conduct longitudinal studies to track the evolution of employees' well-being as workplaces increasingly depend on AI. Research could determine if initial anxieties diminish with increased familiarity or continue due to persistent alterations in job roles and expectations.

5. Conclusion

This study underscores the human cost associated with the swift incorporation of Artificial Intelligence (AI) into the workplace. Artificial Intelligence (AI) has opened up a lot of possibilities for improving operations and coming up with new ideas, but it has also put a lot of stress and pressure on workers. Managing current workloads while constantly learning new skills is very stressful, anxiety-inducing, and tiring. These problems show the human cost of making workplaces smarter and more tech-driven, which is something that is often not thought about. The results show that when integrating AI, the well-being of employees must be taken into account, as adaptation is not easy and can be emotionally draining. Organizations, governments, and schools all have a role to play in solving these problems by making it easier to manage workloads, making sure everyone has equal access to training, and encouraging emotional resilience. The shift to AI-driven workplaces must make sure that workers have not only the technical skills they need but also the support systems they need to deal with these changes without hurting their mental health or job satisfaction. This study emphasizes the necessity of establishing workplaces that harmonize technological progress with human values. By talking about the human cost of adapting to AI, stakeholders can make workplaces where employees can thrive even when technology changes. These kinds of workplaces will not only make the most of AI, but they will also promote inclusivity, well-being, and sustainable

growth, making sure that the benefits of new ideas are shared fairly and ethically.

Abbreviations

AI – Artificial Intelligence
4IR – Fourth Industrial Revolution
STEM – Science, Technology, Engineering, and Mathematics
ICT – Information and Communication Technology
SBTC – Skill-Biased Technological Change
CLT – Cognitive Load Theory
COR – Conservation of Resources
SDT – Self-Determination Theory
STARA – Smart Technology, Artificial Intelligence, Robotics, and Automation
WEF – World Economic Forum
IMF – International Monetary Fund
OECD – Organization for Economic Co-operation and Development
DSO – Digital Skills Organization

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Author Contributions

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2. Methodology
3. Formal Analysis
4. Investigation
5. Writing - Original Draft
6. Writing - Review & Editing
7. Supervision
8. Project Administration

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