



LABOR MARKET TRANSFORMATIONS UNDER ARTIFICIAL INTELLIGENCE: AN ANALYTICAL STUDY OF OPPORTUNITIES AND CHALLENGES FACING TRADITIONAL JOBS IN DEVELOPED COUNTRIES (2022–2030)

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Article history:		Abstract:
Received: 26 th December 2025	This paper examines labor market transformations in developed countries (2022-2030) in light of artificial intelligence applications, focusing on the future of jobs and its impact on traditional employment opportunities. This study found that artificial intelligence has brought about fundamental changes at varying rates globally, leading to the automation of jobs and the emergence of new ones requiring specialized skills, while considering ethical, security, and legislative aspects, and warning against challenges such as bias in algorithms and privacy issues. It also reviews international and regional efforts in regulating artificial intelligence, emphasizing the need to balance promoting innovation and protecting fundamental rights and security.	
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THE INTRODUCTION:

The world is currently witnessing a rapid technological revolution that is reshaping life and the economy, with artificial intelligence (AI) being one of its most prominent drivers. AI is no longer a theoretical concept or science fiction; it has become a tangible reality permeating various vital sectors, from healthcare and education to industry and services, and even scientific research and space exploration. AI contributes to automating processes and analyzing massive amounts of data with exceptional accuracy and speed, thereby improving efficiency and productivity, reducing human error, and opening new horizons for innovation.

The year 2023 witnessed qualitative developments in the field of generative artificial intelligence, with the launch of advanced language models such as ChatGPT from OpenAI in November 2022, and Google's Bard program in March 2023, in addition to the development of Google's Gemini models, which were launched in stages starting from December 2023. These models are capable of producing diverse texts and content based on user requests, which sparked a wide discussion about their capabilities and potential impacts on various aspects of life, including the labor market.

With the fast growth of artificial intelligence, the future of work causes significant concerns and the key ones are: Will artificial intelligence substitute human beings to perform tasks and jobs? Will this cause mass loss of the traditional jobs? Or will it help in generating new employment opportunities which will demand new skills? One can assume that the abundance of smart technologies will make most of the routine and repetitive work automated, yet some believe that artificial intelligence will give rise to new workplaces, where developing artificial intelligence and analyzing data, as well as managing intelligent systems, are only a few examples.

And the reverberations which it caused behind, still lingering to the present day, what will happen tomorrow? There are several inquiries regarding the outcomes of artificial intelligence on the workforce market. Among the most critical of such questions is: Will artificial intelligence supersede humans in the future? And will these alterations be radical ones of the labor market? The employment of smart technologies is likely to automate most of the traditional jobs that relied on basic or repetitive human skills. Conversely, there is an opinion that artificial intelligence can open more employment opportunities as the market demands change in the digital era.

Importance of the study : Given the rapid developments discussed in this work, AI's growing presence in life could have imminent consequences in labour market. This helps in better understanding these impacts and developing effective strategies and policies for adapting to changes that are expected. The research will also help adapt training and development initiatives to the changing needs of the labor market in the face of AI and stimulate debate and discussion about the future of work.



The problem : Based on the above, the research problem is defined by the following main question :

1. How will artificial intelligence affect the labor market in developed countries during the period 2022-2030? Will it create new opportunities or pose a threat to traditional jobs?
2. This main problem leads to the following sub-questions :
 - What are the most significant effects of artificial intelligence on the structure and functions of the labor market?
 - What types of jobs are likely to be negatively or positively affected by the development of artificial intelligence?
 - Which economic sectors will witness major transformations as a result of the use of artificial intelligence?
 - How can workers, institutions, and governments adapt to and benefit from these transformations?

Study objectives : This study aims to achieve the following objectives :

- Examining and assessing the influence of AI on employment in developed nations in 2022-2030.
- Recognizing what opportunities in the labour market will result from the development of artificial intelligence.
- Studying and analyzing the economic sectors affected the most by the development of artificial intelligence.
- The purpose of this paper is to propose strategies and recommendations for workers, institutions and governments to adapt to changes in the labour market, including the globalisation and technological progress.

Study hypotheses : The study posits that artificial intelligence will fundamentally alter the labor market in developed countries over the specified period, leading to the emergence of new jobs and the disappearance of others, while simultaneously reshaping the skills required. It further suggests that sectors reliant on routine and repetitive tasks will be most affected by automation, while sectors demanding creative, analytical, and interactive skills will experience increased demand for human labor .

Methodology and scope of the study : This study employs a descriptive-analytical approach, utilizing quantitative and qualitative data drawn from previous reports and studies published by international organizations, governments, research institutions, and consulting firms. It focuses on the labor market in developed countries during the period 2022-2030, emphasizing the analysis of current trends and future projections .

Study contents : The study consists of three main sections :

Section One: The theoretical framework of artificial intelligence and its impact on the labor market .

Section Two: Analyzing the impact of artificial intelligence on jobs and economic sectors .

topic : The future of the labor market in light of artificial intelligence and the need for regulation.

First topic

The theoretical framework of the concept Technologies Artificial intelligence and its impact on the labor market.

All over the world, today the world is witnessing a massive change that is being led by technological advancement called artificial intelligence. As a result of the development of these technologies, various sectors are experiencing a radical change. This section deals with artificial intelligence and the rising impact of it on the Labor Market.

The first requirement: The theoretical framework of the concept of artificial intelligence technologies .

First: The concept of artificial intelligence technologies

The term "artificial intelligence" was first used in a 1956 research paper, where researchers theorized that a major breakthrough was possible if machines could solve problems currently solved by humans. Despite initial optimism, these predictions later proved overly optimistic, as the field of artificial intelligence faced significant challenges over time. Researchers resorted to using other terms such as "expert systems" and "neural networks." The term "artificial intelligence" has not yet regained its popularity. Its momentum only returned in 2012, with the emergence of the "Photo Grid Challenge," which revived interest in the field. (Fahd and Victor, 2017 , p. 37) We can understand the difference between automation and artificial intelligence . (AI) as follows:

1. Automation is a system based on predefined rules. The machine performs operations according to these predefined rules, taking specific inputs (such as "X") and converting them into specific outputs (such as "Y") .
2. Artificial intelligence relies on machine learning through experience. The system allows the machine to make decisions based on what it learns from data and patterns, determining what it can and cannot do. This is done without the need for detailed programming for each step by a human, but rather by using algorithms that enable the machine to adapt to different situations and improve its performance based on the available inputs. (Wajdi, 2020 , p. 35) .

Artificial intelligence has made tremendous progress in recent years, driven by advancements in machine learning, deep learning, and natural language processing. Thanks to these technologies, intelligent systems can now process massive amounts of data, recognize patterns, and make complex decisions based on advanced algorithms . Artificial intelligence systems can perform tasks previously reserved for humans, such as image recognition, language translation, and medical diagnosis, in addition to other fields including healthcare, finance, customer service, education, and manufacturing. (8) Russ, 2023 , 3 .



Artificial intelligence (AI) is a sophisticated technology to augment human capabilities by associating and not replacing people with machines. AI serves as a collaborator to carry out complex tasks and becoming a productivity and creativity booster. It frees people to think big and creatively by automating more tasks and analyzing big data. The use of technology in various fields like healthcare, finance and the arts can aid in informed decision-making and fuel innovation. AI's future success lies in its collaboration with humans with reasoning, while incorporating ethical principles and transparency to achieve innovation that is fruitful and sustainable. David 2023

Quantum artificial intelligence is an advanced field that integrates quantum computing techniques and machine learning algorithms, aiming to exploit the superior capabilities of quantum computers in data processing and solving complex problems. This integration enables the achievement of results that surpass the capabilities of the most powerful traditional computers, paving the way for new discoveries and applications in multiple fields such as data analysis, cryptography, and scientific simulation. (Eid, 2022 , p. 45) .

Artificial intelligence (AI) is a sub-field of computer science that seeks to create systems and programs, which can replicate activities that are normally performed by human intelligence, including learning, reasoning, analysis and decision making. The technologies used in AI include the following: (Dilmegani , 2024 , 33)

1. **Machine Learning** : Techniques that enable systems to learn and improve automatically through experience and data without being explicitly programmed .
2. Deep Learning : A branch of machine learning that uses deep neural networks to simulate the way the human brain processes data and makes decisions .
3. Natural Language Processing (NLP) : A technology that enables systems to understand and interpret human language and analyze texts and speech .
4. Computer Vision : Enables devices to recognize and analyze images and videos as humans do .
5. Smart robots : Applications of artificial intelligence in robots to make them capable of interacting with the surrounding environment and making autonomous decisions .

Using these technologies, artificial intelligence seeks to improve efficiency, promote innovation, and provide new solutions to complex problems in various fields .

Artificial Intelligence has numerous applications in various fields like: expert systems, voice and speech recognition, character recognition, natural language processing, speech synthesis, games, robotics, pattern and shape recognition, computer vision, decision support systems. Education and learning fields also benefit from AI applications. These technologies keep developing, and artificial intelligence has great benefits today, and be benefitting at a rapid speed in the coming days.

The second requirement: The impact of artificial intelligence on the labor market intelligence may change the nature of work in various fields, and among the jobs most susceptible to automation are the following: (Talmage , 2024 , 13) .

1. Customer Service Representative : Most customer service interactions are now based on automated systems rather than human employees . Because customer inquiries are often repetitive and do not require high emotional intelligence, artificial intelligence can provide automated and efficient answers to common questions .
2. Reception staff :Many companies now rely on robots and artificial intelligence in managing customer reception . For example , programs such as Aime Réception can interact with guests, understand their needs, and have conversations with them, reducing the need for human employees .
3. Accountants and accounting assistants : Companies use automation and artificial intelligence to improve efficiency in accounting processes . AI-powered accounting services provide efficient and secure, cloud-based systems capable of accurately collecting and analyzing data. These services are less expensive than hiring employees to perform the same tasks, making them an attractive option for companies.
4. Sales representatives :Companies no longer rely heavily on traditional sales representatives, as advertising and promotion have shifted to the internet and social media . Targeted marketing tools on these platforms allow for the creation of content tailored to different types of audiences, reducing the need for direct human intervention .
5. Research and analysis : The technological advances in data analysis and research is witnessing further development using the process of artificial intelligence which helps simplify many further discovering new data sets without human input. The processing capabilities of advanced computers support all activities related to artificial intelligence. Due to this, there is a drop in human dependence in these areas.
6. Working in warehouses :Automation in warehouses is increasing as online sales grow, with automated systems being used to move orders quickly and efficiently . Automation helps in positioning and directing staff, and with the advancement of artificial intelligence, retrieval and loading processes can be automated, enhancing shipping efficiency .
7. Insurance underwriting :Insurance underwriting relies on analyzing and applying data according to specific standards . Automation can perform these tasks with increasing accuracy, reducing the need for traditional underwriting staff as automation continues to develop in handling complex tasks .



8. Retail :Self-checkout terminals demonstrate how automation can improve efficiency in the retail sector , and despite concerns about increased theft, the use of these terminals helps companies reduce costs by minimizing the need for cashiers, reflecting the trend towards automation to save costs.

From the above, we can conclude the threats that artificial intelligence poses to the world of work : (Talmage , 2024 , 16)

- Automating routine and repetitive jobs: Artificial intelligence can replace jobs that require repetitive and stereotypical tasks, especially in the manufacturing and management sectors .
- Threat to creative jobs: Computer programs trained to produce artwork or write stories may replace artists and journalists .
- Reduced demand for human labor: Companies may turn to cheaper and more efficient automation systems, leading to a decrease in traditional employment .
- Challenges in socialization and human interaction: Reliance on machines may affect the social aspects of work, as some jobs require empathy and direct human interaction .
- Expected wave of layoffs: It is estimated that (44%) of employees will be laid off in 2024 due to the efficiency of artificial intelligence .

In order to adapt to the new transformations resulting from the rapid integration of artificial intelligence into many economic activities around the world, which necessitates policymakers taking action to guide this change appropriately and to facilitate this, the International Monetary Fund created the "AI Readiness Index" to measure countries' readiness in several areas, including digital infrastructure, human capital policies, the labor market, innovation, and ethical regulation .

This index focuses on assessing aspects such as years of education, freedom of movement in the labor market, and the extent of social safety net coverage . It also assesses countries' ability to adapt to digital work models within their legal framework and the existence of strong governance for policy enforcement .

SECOND TOPIC

Analyzing the impact of artificial intelligence on jobs and economic sectors.

The labor market is undergoing radical transformations in artificial intelligence technologies . This development is reshaping the labor market, creating new opportunities while changing or eliminating other jobs. It is important to understand this dynamic in order to adapt to it and thrive in this new era.

First requirement : New opportunities in the job market thanks to artificial intelligence

Since Czech writer Karel Šapek coined the term "robot" in 1920, technology has undergone tremendous development, leading to the emergence of robots and artificial intelligence in various fields. Despite concerns that these technologies might replace humans in some jobs, they have also contributed to creating new employment opportunities and increasing productivity) .World Bank (2019 .

James Albus , a leading robotics researcher, explained that there is no historical evidence to prove that the use of modern technology leads to job losses. On the contrary, industries that rely on advanced production technologies often experience growth and prosperity, which contributes to employing more workers, expanding their product markets, and increasing their diversity through the introduction of new production lines . J. Nilsson , 1984 , p. 62.

Despite the common belief that artificial intelligence (AI) will reduce human job opportunities, the labor market is expected to experience significant growth in human jobs. In fact, demand for some human jobs may increase, leading to labor shortages in some countries that might then welcome immigrants from other countries to fill the gap . While AI may eliminate some jobs in certain sectors, it will also open up new job opportunities in others. Global spending on AI is projected to exceed \$77 billion in 2022, according to a report by IDC (□September 19, 2018)

Global spending on artificial intelligence is also expected to reach nearly \$1 trillion by 2030, thanks to massive investments in the field, according to the World Bank's 2019 report on "The Changing Nature of Work." Despite concerns about job losses due to the increasing number of robots, reports indicate that technology offers opportunities to create new jobs and increase productivity, leading to improved public services . Technological innovation also stimulates rapid growth and changes old production patterns, as business models such as digital platforms evolve, providing economic opportunities for millions of people worldwide . September 19, 2018.)

These platforms are contributing to the decline of traditional jobs, such as repetitive office work, while creating new types of employment. In Europe alone, it is expected that around 23 million new jobs will be created. Furthermore, technology is changing the nature of work, promoting non-traditional and temporary jobs, thus making work more flexible(World Bank ,2019)

As the labor market evolves with the emergence of artificial intelligence, continuous skills development and education are essential . Workers must develop new skills to remain relevant in the technology-driven work environment . To equip individuals with the skills required in the AI-driven economy, government sectors, educational institutions, and companies must collaborate to provide training programs . Promoting a culture of adaptation and continuous learning



is vital to reducing job losses . The deployment of artificial intelligence depends on continuous learning and skills development, which enhances the integration of human workers and machines in sectors such as health, transportation, and banking (Benhamou's, 1 September, 2020, 22.)

Artificial intelligence has become a major driver of the labor market, contributing to the development of new fields and the creation of innovative job opportunities , for example:

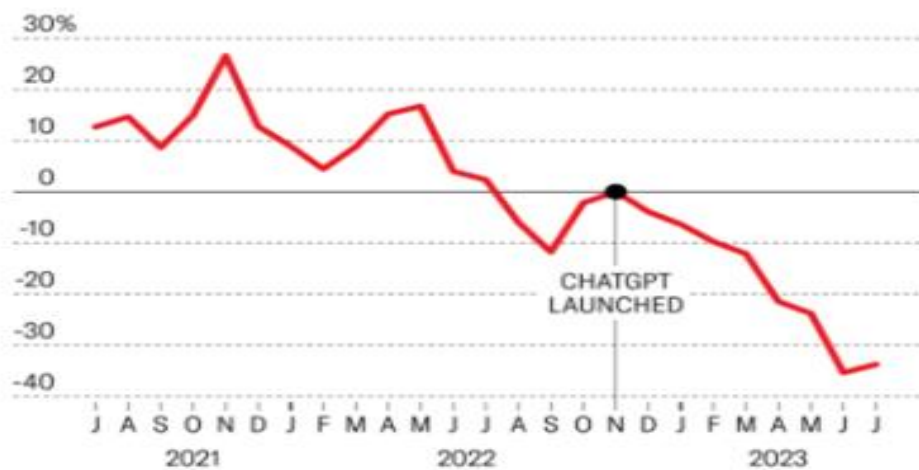
New areas: Artificial intelligence provides opportunities in areas such as the development and maintenance of intelligent systems, the design of advanced algorithms, and the use of robots to analyze big data . These areas require new skills and training opportunities for workers in the sector.

Training and Development : Artificial intelligence contributes to providing advanced training platforms that help employees acquire new skills. Thanks to these training courses, workers in the technical sector can adapt to continuous changes, which contributes to raising the level of innovation and problem-solving ability, giving them greater flexibility in the work environment.

A study from Harvard Business School's Center for Economic Research, examining the impact of generative artificial intelligence (GAI) , analyzed 1,388,711 job postings from a leading global online freelance platform between July 2021 and July 2023. These platforms provide a suitable environment for studying emerging trends due to the digital, flexible, and task-based nature of work . Using a machine learning algorithm, the study categorized the job postings into three types: jobs requiring manual effort (such as data and office management, video and audio services), jobs susceptible to automation (such as writing, software, application, and website development, and engineering), and jobs related to image generation (such as graphic design and 3D modeling) . The study then examined the impact of GAI tools on the demand for these different types of jobs, with the results shown in the following figure:

Figure (1)

The impact of ChatGPT on jobs prone to automation versus intensive manual jobs .



Source: Ozge Demirci, Jonas Hannane, and Xinrong Zhu



Source: Ozge Demirci, Ozge Demirci, Jonas Hannane, and Xinrong Zhu, How Gen AI Is Already Impacting the Labor Market, Harvard Business Review (HBR), November 11, 2024



The graph illustrates the change in the number of job postings for jobs prone to automation compared to manual intensive jobs. After the launch of ChatGPT in November 2022, a sharp decline in demand was observed for jobs prone to automation (such as writing and software development), which saw a greater decline compared to manual jobs . This highlights and emphasizes the impact of generative AI on reducing demand for jobs that can be automated , reflecting shifts in the labor market as a result of technological developments .

requirement : Artificial intelligence threats to traditional jobs

Artificial intelligence presents both a challenge and an opportunity for the labor market , so it is essential to take proactive measures through education, training, government policies, and human-machine collaboration to mitigate potential negative impacts and make the most of AI's capabilities.

The impact of artificial intelligence on the labor market includes its effect on employment, wages, job transitions, skills needs, and the work environment (Placide Poba, Malatsi , Sylvestre, & Arnela , 2021). The use of artificial intelligence can lead to the replacement of some job sectors, such as routine jobs and repetitive tasks in industries like manufacturing, customer service, and data entry in factories. Workers , assembly line workers, and warehouse workers are replaced by AI systems . This helps increase business efficiency and reduce costs, which benefits the company . As one article shows, artificial intelligence enhances labor productivity, expands the industrial chain, and contributes to economic growth, which ultimately affects employment and income.

While concerns about job losses are justified, the development and implementation of artificial intelligence (AI) technologies are also contributing to the creation of new types of jobs and the automation of traditional tasks , allowing workers to focus on creativity . AI technologies such as machine learning and natural language processing help in data analysis, informed decision-making, and increased productivity . Developing and acquiring new skills has become essential in preparation for jobs that require human-centered skills such as creativity , emotional intelligence, adaptability, and complex problem-solving.(Squicciarini , Nachtigall ,2021)

The continuous development of tools and applications is driving increased demand for software engineers and data analysts, opening up vast opportunities for specialists in these fields and reinforcing the importance of acquiring advanced technical skills (Glass , 2024, p. 54) . This development, in turn, is reflected in the impact of artificial intelligence. By significantly impacting the workforce through the automation of repetitive cognitive and physical tasks , AI , by taking over these routine structural duties, allows employees to focus on more complex responsibilities that require adaptability, problem-solving, creativity, and emotional intelligence. (Al-Kalbani 2024 ,56)Instead of replacing employees, artificial intelligence contributes to restructuring the work environment by automating routine tasks, thus saving time, effort and cost significantly, and enabling employees to focus on value-added activities such as creativity, critical thinking and problem-solving, thus achieving higher operational efficiency with less cost and effort . J. Nilsson , 1984 , p. 67 .

Artificial intelligence systems take over repetitive tasks, reducing routine jobs such as: Secretarial jobs, cashiers, data entry workers , postal workers and bank representatives ... It promotes collaborative work , and although the transition to hybrid roles between humans and artificial intelligence is difficult, appropriate retraining programs contribute to adapting to this change.

The World Economic Forum's "Future of Jobs 2025" report reveals that the world is poised to lose approximately 92 million jobs by 2030 due to major transformations driven by artificial intelligence and technology . Conversely, the global labor market is expected to create 170 million new jobs, representing a net increase of 78 million . The report also anticipates that the adoption of artificial intelligence and information processing will significantly transform 86 % of companies . Business models are changing in one-third of the surveyed organizations, with increased demand for cybersecurity and leadership skills. (12, Forum, 2025)

However, recent research indicates that the positive effects of technology leakage on employment, which do not adequately compensate for the job losses suffered by middle-skilled workers due to process automation , require strategic policy measures and improved education to adapt to the changes resulting from AI-driven restructuring , as illustrated in the following table

Table (1)

Projections based on the percentage of jobs that can be automated by 20300, according to development aid analysis

Percentage of jobs that can be automated By 2030	Country/Region
24.60%	Africa
35.80%	Asia and Oceania
27.20%	Europe
26.60%	Latin America and the Caribbean
25.50%	north america



Source: Sulaimon A, Melemuku , Artificial Intelligence and the Associated Threatsonthe ,Human Workforce, Bournemouth University Dorset, England, December 2023, p

The table shows that automation will affect labor markets worldwide, but at different rates . It is essential to understand these impacts and prepare for them by investing in education and training and developing appropriate policies , so that the highest rate of automation is achieved . Asia and Oceania have the highest projected rate of jobs that can be automated, at 35.80% . This indicates that this region may witness significant transformations in the labor market as a result of technological developments in some Asian countries and their reliance on labor-intensive industries, many of whose jobs can be automated . Meanwhile, Africa has the lowest rate of automation at 24.60% . However, this does not necessarily mean that Africa will be completely immune to the impact of automation. Rather, it may indicate that the pace of change will be relatively slower compared to other regions , due to the greater reliance of African economies on agricultural sectors and activities that require significant human intervention , and the limited spread of technology and digital infrastructure in some African countries .

The remaining regions saw relatively similar percentages of jobs that could be automated, ranging between 25.50% and 27.20%. This suggests that these regions will also experience significant effects of automation on labor markets, but at a slower pace than Asia and Oceania .

These transformations highlight the need to retrain and rehabilitate the global workforce to keep pace with rapid changes, with 39% of current skills expected to be transformed or replaced by 2030. This means that the workforce will change as routine tasks move from humans to smart algorithms. However, instead of a sudden and complete elimination of jobs, the changes will be more gradual and dynamic, and will include the formation of new partnerships

Third requirement: The impact of artificial intelligence on the management and human resources industry

According to a study titled "AI Recruitment Tools: The Pros and Cons" published on the Korn Ferry website , recruiters have been able to use artificial intelligence tools to accomplish their tasks by : (Ferry, 2024 , 14)

1. Saving time for recruitment officers by completing complex tasks: Manually reviewing resumes remains the most time-consuming part of the recruitment process, especially When 75% to 88% of the resumes received for a job are unqualified It is estimated that reviewing resumes and shortlisting candidates for interviews takes 23 hours of a recruiter's time for one employee , but with the use of artificial intelligence, this time can be reduced to a few minutes, as AI can quickly and accurately review resumes and recommend the best candidates based on specific criteria .
2. Improving the quality of recruitment by matching job requirements with experience :As human resources data has become easier to collect, access and analyze over the years, the quality of employment has become the most important key performance indicator for employment. The role of artificial intelligence in improving the quality of employment lies in its ability to use data to match candidates' experience and skills with job requirements, thereby hiring more productive and efficient employees.
3. Enhancing the experience of candidates and employees by providing interactive, personalized, and innovative solutions : Artificial intelligence can improve the experience of candidates and employees by providing interactive, personalized, and innovative solutions, such as chatbots, virtual interviews, and job coaching . These solutions can help increase engagement, satisfaction, and loyalty for both candidates and employees, provide useful and immediate information and feedback, and improve performance and career development . According to a study by Deloitte, using artificial intelligence to improve the employee experience can increase productivity by 15% and reduce absenteeism by 20 % .

Artificial intelligence can involve some challenges and risks in recruitment processes in various fields, such as : (Company, 2022, 15)

1. Artificial intelligence requires a lot of data : In general, artificial intelligence requires a lot of data to learn how to accurately simulate human intelligence. For example, artificial intelligence that uses machine learning needs a lot of data to learn how to accurately examine resumes like recruiters . This raises issues related to the quality, reliability, and privacy of the data. If the data is inaccurate, outdated, or incomprehensible , it may lead to unreliable and unfair results .
2. Lack of human judgment :While artificial intelligence can be great at quickly scanning applicants' resumes and selecting Ideally, AI is the best tool, but sometimes you need human judgment involved in the process, especially when selecting a specific applicant for a particular job . This does not mean that you should not use AI. Although AI is an excellent tool to get started, you should review and reconsider the decisions made by AI in selecting candidates before approving them .
3. It may be less accurate :For example, a candidate might use a phrase or keyword to describe a skill on their resume . If the AI doesn't have enough data to understand the meaning of that skill, it could potentially disqualify a qualified candidate . For these reasons, it's always important to review AI results from a human perspective first before



submitting the candidate list to the hiring manager. It is necessary to ensure that AI applications are fed accurate and understandable data for them to read

4. This may lead to bias or discrimination :Although artificial intelligence may appear neutral and objective, it may reflect bias or discrimination present in the data it is trained on . If the data is biased against a particular group of people based on age, gender, race, religion, disability, or any other factor, this may result in unfair decisions . This can lead to a loss of talent, reduced diversity, or expose the company to legal risks or a lack of credibility .

In general, it appears that artificial intelligence has brought about a change in the field of employment, but institutions must consider the challenges arising from it, and emphasize the application of technology in an ethical and fair manner . In the same context, we note several effects on human resources, including (Company, 2022, 18) .

Its impact on recruitment and management :

Automation in recruitment: Artificial intelligence contributes to automating many processes and improving performance, as it can complete tasks with speed and accuracy that exceed human capabilities in some cases .

Improving efficiency: Artificial intelligence enhances employee efficiency and the quality of products and services through analytical tools and robots capable of monitoring processes and detecting defects to improve performance .

Its impact on training and professional development :

Smart learning: Artificial intelligence helps employees continuously develop their skills to adapt to new technology, ensuring their continued presence in the labor market .

Continuous training enables artificial intelligence to adapt to different environments, allowing the system to be continuously trained to learn new skills and improve performance according to market needs .

THIRD TOPIC

The future of the job market in the age of artificial intelligence The need for regulation

Artificial intelligence is a major transformative force across all industries, threatening the traditional foundations of work and raising questions about its future . AI technologies have automated tasks that were once human-based, contributing to increased efficiency, but also raising concerns about job losses.

requirement : Concerns about the risks of artificial intelligence (economic , ethical, security)

At the first global summit on AI safety in Bletchley Park, UK, Elon Musk stated that artificial intelligence could radically change the future of work, to the point that people may not need to work in various sectors. AI is reshaping work dynamics, boosting productivity through automation and data analysis, but it also poses challenges related to the workforce's ability to adapt to these changes . (Chúláin, 2023, 21) .

Integrating artificial intelligence into traditional work environments is a two-sided issue. It holds promising opportunities for improving efficiency, productivity, and innovation, but it also presents significant challenges that require careful study and thorough handling . Among these risks and challenges, we mention the following : (MODIVA , 2023 , 23).

1. Job replacement (job displacement) :

One of the biggest challenges with the development of artificial intelligence technologies is the potential for machines to replace human labor. Many tasks that used to require human intervention, especially routine and repetitive tasks, can be automated. This may lead to the loss of some jobs, but it is important to note that artificial intelligence also creates new job opportunities, especially in fields that require specialized expertise in developing and implementing artificial intelligence systems .

2. New skills requirements :

The use of artificial intelligence requires new and specialized skills. As these technologies develop, the need for workers with a deep understanding of AI and related fields increases. This may lead to a skills gap, where unqualified individuals find it difficult to secure employment, necessitating retraining and skills development programs for alternative jobs .

3. Unfair distribution of benefits :

Not everyone may benefit equally from the use of artificial intelligence . Small businesses and low-skilled employees may find it difficult to adapt to these technologies, while large companies able to invest in artificial intelligence may have a significant competitive advantage .

4. Ethical concerns and privacy issues :

The use of artificial intelligence raises ethical concerns and privacy issues . AI systems often require access to massive amounts of data to function effectively, raising questions about the privacy of personal and corporate data and its ethical use, especially in light of strict data protection laws such as the General Data Protection Regulation (GDPR). Furthermore, AI systems may exhibit biases and make decisions with negative social consequences, necessitating a thorough examination of these ethical considerations .

5. Cost and investment :

Developing, implementing, and maintaining artificial intelligence technologies is costly , including the cost of acquiring the technology, hiring AI specialists, and the costs of ongoing maintenance and updates .



In short, integrating artificial intelligence into the workplace presents both an opportunity and a challenge. Through good planning, investment in training, and the establishment of appropriate ethical and legal rules, the advantages of this technology can be utilized while minimizing its potential negative effects .

requirement : Regulating artificial intelligence and its challenges

Within the legal framework for regulating artificial intelligence, we will attempt to discuss the laws and regulations necessary to regulate the use of artificial intelligence in the labor market, which we summarize below:

- It highlights how countries are dealing with the challenges and opportunities of artificial intelligence through different policies and initiatives aimed at supporting companies, promoting research and development, and striking a balance between innovation and ethics .

1. Policy Observatory :The observatory focuses on policy analysis and evaluation of regulations and governance tools in most countries , and a large number of initiatives have been directed towards companies, including small, medium, large and multinational companies.

of national governance for artificial intelligence: through building institutional capacities , establishing institutions to support the government's efforts in artificial intelligence and providing advice to policymakers.

Stimulating the adoption of artificial intelligence: Direct government support such as grants and funding for startups , and indirect support such as skills promotion policies and tax credits for investment in research and development.

Ethics of artificial intelligence and transparency: Developing ethical advisory bodies and establishing voluntary standard frameworks , protecting data and addressing digital privacy issues through new standards (EC/OECD . 2021).

2. The role of governments and international organizations in ensuring the safe and fair use of artificial intelligence :

Establishing international frameworks and standards : Developing standard frameworks and principles that governments and businesses can adopt to ensure the safe and fair use of artificial intelligence .

International initiatives and principles :

ILO Centenary Declaration (2019): Focuses on a humanistic approach that enhances the capabilities of individuals, ensures decent work, and promotes sustainable economic growth .

It was adopted during the 108th session of the International Labour Conference in June 2019. (World Bank, 2019)

OECD Principles (2019): It supports respect for the rule of law and human rights, and promotes the responsible and transparent development and use of artificial intelligence . Adopted in May 2019, it is the first international standard in this field. (OECD , 2019, 22)

UNESCO Recommendation (2021): Emphasizes the need for human oversight of artificial intelligence systems and collaboration with various stakeholders to achieve a just transition It aims to ensure that the development and use of artificial intelligence is in line with global ethical values and principles. (SDAIA.GOV.SA, 2023, 9)

The G7 Hiroshima Principles (2023): Encourage the development of safe and responsible artificial intelligence systems, with an emphasis on mitigating risks, transparency, and security. These principles were agreed upon during the G7 summit in Hiroshima in 2024 (SDAIA, 2024, 17) .

United Nations Recommendations (2024) : Providing recommendations on international AI governance to achieve a balance between innovation and security .

These efforts seek to ensure that artificial intelligence is used in ways that promote inclusive growth, human rights, and security while respecting democratic values.

3. Regional governance of artificial intelligence :

These regional efforts demonstrate a commitment to developing policies that balance promoting artificial intelligence with ensuring adherence to human rights and ethics.

Non-binding legal strategies : Regional organizations have proposed strategies based on a "human-centered governance approach," with a focus on the economic value of artificial intelligence .

United Nations resolutions : In March 2023, the United Nations General Assembly called on states to stop using artificial intelligence systems that conflict with human rights or pose undue risks .

Regional initiatives:

Association of Southeast Asian Nations (2024): Issued guidelines for the governance of artificial intelligence.

Santiago Declaration (2023): Addressing the ethics of artificial intelligence in Latin America and the Caribbean.

The African Union (2024): is working on developing a continental strategy for artificial intelligence.

European Union (2023): In December 2023, the European Union adopted the Artificial Intelligence Act (EU AI Act) , the first globally binding regulatory framework for artificial intelligence . This act aims to ensure the safe and fair use of AI technologies by classifying them according to the level of risk they pose , which is (European Parliament ,2023:(

Unacceptable risks: These include applications that pose a clear threat to fundamental rights and safety, such as social ranking systems or mass surveillance in public spaces. The use of such systems is strictly prohibited.



High risks: These include applications such as AI-powered recruitment tools or medical devices. These systems require a mandatory compliance assessment before being put on the market, to ensure they meet the specified standards.

Low risk: Applications that do not pose a significant threat, such as recommendation systems or spam filters, are allowed to run without major restrictions.

The impact of the law on businesses:

Assessment and compliance: Companies must assess and classify the AI applications they use according to their level of risk.

Compliance with high-risk regulations: If applications are classified as high-risk, companies must conduct a compliance assessment to ensure they meet legal requirements.

Transparency: Emphasis is placed on ensuring transparency in the use of artificial intelligence, especially in high-risk applications, to ensure trust and compliance.

Legal responsibility: Companies are responsible for ensuring that AI applications comply with established standards, with the possibility of imposing fines for violations.

This law is expected to come into force in August 2024, with a 24-month transition period for the application of all rules, including the regulation of high-risk systems.

This law is considered an important step towards regulating the use of artificial intelligence in the European Union, while emphasizing the importance of balancing the promotion of innovation with the protection of fundamental rights and safety.

CONCLUSIONS AND RECOMMENDATIONS

First: Conclusions:

1. Artificial intelligence is expected to bring about major transformations in the labor market by 2030, with varying impacts including the loss of millions of jobs, the creation of new opportunities, and increased productivity. These transformations require strategic preparedness from governments and companies to ensure successful adaptation to future changes.
2. Artificial intelligence represents a major transformative force in the labor market, and requires strategic preparedness and thoughtful planning to ensure a balance between innovation and protecting workers' rights.
3. To address these challenges, it is recommended to develop skills that are difficult for artificial intelligence to mimic, such as creativity, critical thinking, and human interaction. Governments should collaborate with the private sector to support vocational training and retraining for affected workers, and strengthen digital infrastructure and regulatory policies to ensure the safe and ethical use of artificial intelligence.

Second: Recommendations :

1. The need to tailor guidelines to the impact of artificial intelligence in each sector and Providing support to companies through training initiatives and improved data management.
2. Improving access to data for small and medium-sized enterprises to support decision-making.
3. Facilitating career transition through strong education and training systems.
4. Encouraging partnerships between governments, academic institutions, and industry.
5. Periodic risk assessment and cybersecurity enhancement And preparing citizens to deal with the artificial intelligence economy.
6. Providing rehabilitation and social support programs for workers affected by changes, and promoting cooperation between humans and machines to achieve a more prosperous and just future.

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