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The future of work: AI, automation, and the changing dynamics of developed economies

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Abstract

Artificial intelligence (AI) and automation technologies are rapidly evolving, which will have far-reaching implications for the future of work and the dynamics of developed economies. This research aims to explore the potential impact of AI and automation on the labor market, employment patterns, and the overall socioeconomic landscape. The study uses a literature review and analysis of existing research, policy documents, and expert opinions to understand AI and automation's current state and future trajectory in developed economies. Key areas of investigation include the potential displacement of human labor, the emergence of new job opportunities, changes in skill requirements, and the implications for income inequality. The findings reveal that AI and automation have already disrupted various sectors of the economy, with routine and repetitive tasks being particularly susceptible to automation. The research highlights the potential for new types of jobs to emerge, requiring a combination of technical skills, creativity, and social intelligence. The study emphasizes the importance of lifelong learning and reskilling programs to prepare the workforce for the changing demands of the future job market. It also emphasizes the need for proactive policies and regulatory frameworks to address potential societal challenges arising from AI and automation. Additionally, it highlights the importance of collaboration between government, academia, and industry stakeholders to navigate the evolving work landscape.

1. Introduction

Over the past six decades, values, social norms, and language have changed. The fear of the machine has, however, remained constant. The Nobel Prize-winning economist Herbert Simon predicted in 1956 that "Machines will be capable, within twenty years, of doing any work a man can do," and that, consequently, many jobs outside of the traditional blue-collar work in the manufacturing sweatshops would become obsolete as a result of new technologies. Artificial intelligence (AI) and automation technologies have advanced at an unprecedented rate, causing significant changes in many aspects of our lives. These developments, in particular, have sparked widespread debate and concern about the future of work. Understanding the impact of AI and automation on labor market dynamics is critical as developed economies strive to navigate the complex landscape shaped by AI and automation. The introduction of AI and automation technologies has undoubtedly transformed industries worldwide. Automation has already begun to replace human labor in routine, repetitive tasks, resulting in increased productivity, efficiency, and cost-effectiveness. The rapid adoption of AI-powered technologies, combined with their expanding capabilities, is poised to disrupt traditional job markets and reshape the very nature of work.

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The potential displacement of human workers is one of the primary concerns raised by the rise of AI and automation. As machines become more capable of performing complex tasks that were previously limited to human expertise, there is growing concern about job losses and labor market polarization. The study intends to investigate the extent of this displacement and to investigate strategies for mitigating negative effects while also identifying new opportunities that emerge in the process. Furthermore, in developed economies, work changes go beyond mere job displacement. AI and automation integration can reshape job structures, changing skill requirements, and the employment landscape. As routine tasks are automated, demand shifts toward more complex and creative work that requires human ingenuity, emotional intelligence, and critical thinking.

The impact of AI and automation is not limited to individual workers but extends to entire industries and economic systems. AI and automation have the potential to enhance human capabilities, augment productivity, and create new employment opportunities. This research paper will highlight strategies for maximizing the positive impact of AI and automation on the future of work. It aims to provide an in-depth analysis of the implications arising from these developments, addressing concerns of job displacement, changes in work dynamics, and sector-specific impacts. By understanding the multifaceted aspects of this transformative phenomenon, we can chart a path toward a future where humans and machines collaborate harmoniously.

Objectives of the Research

This research aims to explore the future of work in the context of developed economies, focusing on the impact of AI, automation, and the changing dynamics they bring. The specific objectives of this study are as follows:

- Examine the current state of AI and automation technologies and their applications in developed economies.
- To assess the effects of AI and automation on workers, such as job displacement, changes in employment conditions, and the potential social and economic consequences.
- To discuss the ethical considerations related to AI and automation, including issues of fairness, bias, transparency, and responsible practices.

2. Literature Review

Autor et al., 2003 [1] discussed how computerization affects job skill demands. It implies that computer capital can replace workers in tasks with explicit rules while complementing workers in nonroutine problem-solving and complex communications tasks. The results of an analysis of data from 1960 to 1998 show that computerization is associated with a decrease in labor input for routine manual and cognitive tasks and an increase in labor input for nonroutine cognitive tasks. The model explains 60% of the relative demand shift favoring college labor between 1970 and 1998, which has implications for education demand. Allen, 2009 [2] examined the macroeconomic data of the British economy between 1760 and 1913 and identified two distinct phases of inequality. In the first half of the 19th century, output per worker increased, real wages remained stagnant, and the profit rate doubled. In the second half of the 19th century, real wages started to grow in line with productivity, and the profit rate and factor shares stabilized. Simulations using the model demonstrate that technical progress played a significant role in driving the industrial revolution, with capital accumulation acting as a necessary complement. After the mid-19th century, accumulation caught up with technological requirements, and wages began to rise in tandem with productivity. Autor, 2015 [3] explored the relationship between automation and job displacement. It argues that while automation does replace labor, it also complements it, leading to increased output and higher demand for labor. It acknowledges that technological changes have influenced job availability and wages, resulting in a polarization of the labor market. It concludes by discussing the impact of artificial intelligence and robotics on occupational change and employment growth. Arntz et al., 2016 [4] discussed concerns about automation and digitalization potentially leading to a jobless future. It aims to estimate job automatibility in 21 OECD countries using a task-based approach that considers the heterogeneity of tasks within occupations. The findings reveal that only 9% of jobs are deemed automatable, suggesting that the threat from technological advances is less severe than previously believed. There are variations in automatable jobs across OECD countries, such as Korea having a 6% share of automatable jobs, while Austria having a higher share of 12%. These differences may be due to variations in workplace organization, past investments in automation technologies, and disparities in worker education levels between countries.

L. Britton & G. Atkinson, 2017 [5] examined the implications of automation and technological advancements in the asset management industry. It focuses on the impact of automation on the workforce, the necessary skills for augmentation, and how robot advisors can challenge an organization's value proposition. The findings suggest that occupations with systematic and repetitive tasks in a fixed domain will likely be automated, leading to an increased demand for analytical

skills among junior recruits. Asset management firms must embrace and integrate technology into their operations to remain competitive. Acemoglu & Restrepo, 2018 [6] They discussed the potential for new technologies to make labor obsolete. It proposes a framework where tasks that were previously done by labor can be automated, while new versions of existing tasks, where labor has a comparative advantage, can be created. In the static version, automation reduces employment and labor share, while the creation of new tasks has the opposite effect. The full model considers the endogenous nature of capital accumulation and the direction of research, encompassing both automation and the creation of new tasks. Heavin & Power, 2018 [8] discussed the impact of digital technologies on organizations, highlighting their potential to transform operations, products, and services. It focuses on the common dilemmas faced by managers during digital transformation and proposes a digital transformation decision support guide for managers to help them transition from an ad hoc, technology-driven approach to a more systematic and integrated approach. It emphasizes the need to recognize and address the challenges associated with digital transformation in order to achieve successful outcomes.

Bhattacharyya & Nair, 2019 [10] explored the future of work in India using qualitative research and system dynamics. The findings indicate that automation is expected to be used for manual jobs and knowledge-centric tasks, lifelong learning and skills upgrading will be essential, freelancing will become a dominant way of work, organizations will reduce dedicated workspaces and opt for co-working spaces, and jobs that involve novelty and creativity will continue to exist. However, there is a concern that the widespread adoption of automated technologies could lead to job losses and increased unemployment. Adam et al., 2020 [11] discussed the use of live chat interfaces and chatbots to provide real-time customer service in e-commerce settings. An online experiment was conducted to examine how verbal anthropomorphic design cues (characteristics that make the chatbot appear more human-like) and the foot-in-the-door technique (a persuasion strategy involving making a small request before a larger one) influence user compliance with chatbot requests. The study's findings indicate that both anthropomorphism and the need for consistency significantly increase the likelihood of users complying with a chatbot's request for service feedback. Parker & Grote, 2020 [12] discussed the importance of work design in understanding the effects of digital technologies on jobs. It proposes four intervention strategies to address these issues: active consideration of work design choices, human-centered design principles, organizationally oriented intervention strategies, and training employees. Future research should explore topics such as job autonomy, job design mindsets, and job crafting. It also suggests a reorientation of research methods towards interdisciplinary and intervention studies.

Paschen et al., 2020 [13] discussed the need for clarity and understanding regarding the central principles, opportunities, and challenges of artificial intelligence (AI). It provides an overview of six building blocks of AI: structured data, unstructured data, preprocesses, main processes, a knowledge base, and value-added information outputs. The authors propose a typology as an analytical tool to further assist managers in comprehending AI's impact on their industries. This typology distinguishes between product- and process-facing innovations and describes innovations as either competence-enhancing or competence-destroying. By using this framework, managers can evaluate their markets, identify opportunities, and recognize potential threats stemming from AI. Fosso Wamba et al., 2021 [14] highlight that AI has the potential to revolutionize society, but the direction of AI scholarship and its alignment with building a "good AI society" remains unclear. This study conducted a bibliometric analysis of 40,147 documents from the Web of Science database to explore the intellectual, social, and conceptual structure of AI research. It presents 136 evidence-based research questions to enhance understanding of the social changes induced by AI and facilitate preparations for a "good AI society". Frick et al., 2021 [15] in their study, explored the impact of leadership on resistance to change and AI readiness in enterprises undergoing digital transformation. Expert interviews revealed that empowering leadership can reduce resistance to change, but it did not significantly affect either resistance to change or AI readiness. The findings suggest that practitioners should focus on leadership attributes that foster organizational alignment and generate appropriate readiness for AI implementation.

Özkiziltan & Hassel, 2021 [16] provided an overview of the labor market transformations caused by the increasing use of Artificial Intelligence (AI) technologies, with a specific focus on Germany. It examines the impact of AI on job numbers and structures, as well as its potential to perpetuate work-related inequalities and discrimination through AI-enabled management tools. The paper concludes by discussing two significant implications of increased AI utilization in labor markets: if current trends persist, the AI-driven future of work is likely to worsen work-related inequalities and discrimination, making decent work, fair remuneration, and social protection more difficult to attain, and there are still choices regarding the advancement, adoption, and utilization of workplace AI technologies that can bring benefits to everyone. Giraud et al., 2022 [17] suggested that the implementation of AI in organizations has the potential to disrupt various occupations, including managerial roles. To address this gap, researchers conducted a study using qualitative and semi-structured interviews with 40 AI experts and validated the findings through descriptive statistics. The results indicate that most managerial skills are likely to be enhanced or augmented by AI, but some skills may be replaced. The study also provides insights into the interface between AI and Human Resource Management. Goto, 2022 [18] in their

research explored how professionals in leadership positions within professional service firms perceive and construct their views on new digital technologies, particularly AI, and the impact of these technologies on their future. The research employs a qualitative approach, utilizing interviews and archival data from a Big Four audit firm in Japan. It contributes to existing knowledge by expanding our understanding of prospective sense making, highlighting the link between institutions and sense making, and emphasizing the potential variability in professionals' digitalization strategies due to their continuous updating of their future outlook.

Monod et al., 2022 [19] examined the impact of artificial intelligence (AI) implementation on customer relationship management (CRM) and the resulting power shift within organizations. It draws on Bourdieu's theory of practice to analyze the power dynamics associated with AI implementation. The findings highlight the challenges and discrepancies that arise when implementing AI systems in CRM and emphasize the need for a more holistic approach that takes into account the organizational context and power dynamics. Faishal et al., 2023 [20] discussed the impact of technology on the Indian economy, focusing on the role of technology in promoting entrepreneurship and innovation. It also explores how technology has empowered people in remote locations and fostered economic inclusivity in sectors such as healthcare, agriculture, and education. It also examines the adoption of technology in India, including potential problems and concerns that may arise. The paper provides an insight into the current "Tech-tonic Shifts" and their effects on India's socioeconomic environment, highlighting the transformative power of technology and its potential to drive economic growth, promote inclusivity, and address societal challenges.

3. Present State of Artificial Intelligence & Automation

The McKinsey Global Institute [9] estimates that by 2030, 70% of companies will implement AI technology, with less than half of large corporations adopting the entire range. AI could generate an additional economic output of US$13 trillion, resulting in a 1.2% increase in global GDP. However, AI will disrupt labor markets, resulting in additional costs and negative externalities. In another study conducted in 2016 by Analysis Group, which Facebook financially supported, the implementation of AI is predicted to positively impact jobs, productivity, and GDP. The study suggests that AI technologies will have direct and indirect effects, with direct effects resulting in increased revenue and employment opportunities, while indirect effects resulting in increased productivity and access to knowledge and information. These gains will be modest, totaling between US$1.49-2.95 trillion over the next ten years.

AI and automation technologies have revolutionized our lives and industries, particularly in developed economies. This response will examine the current state of AI and automation technologies, their applications, and the impact they have had on developed economies.

3.1 Automation Technologies: The term "automation technologies" refers to the use of equipment, robots, and computer systems to carry out tasks that were formerly completed by humans. Automation has been extensively used in developed economies in a variety of sectors, including manufacturing, logistics, and customer service. Efficiency gain, cost savings, and product quality enhancement are the three main objectives of automation. The main forces behind automation technologies are cutting-edge robotics, computer vision, and machine learning techniques.

3.2 AI Technologies: AI technologies encompass a wide range of applications that simulate human intelligence, including machine learning, natural language processing, computer vision, and expert systems. These technologies enable machines to process vast amounts of data, recognize patterns, and make intelligent decisions. AI has found applications in various sectors in developed economies, including healthcare, finance, transportation, and retail.

4. Applications of Artificial Intelligence and Automation in Developed Economies

4.1. Manufacturing

Developed economies have implemented automation technologies to improve production efficiency and competitiveness. Industrial robots and AI algorithms enable predictive maintenance, optimizing equipment uptime and minimizing production downtime.

4.2. Healthcare

AI and automation are revolutionizing healthcare delivery in developed economies. Machine learning algorithms analyze medical data to improve diagnostics and treatment plans, chatbots and virtual assistants enhance patient engagement, and robotic surgery systems enable precise and minimally invasive procedures.

4.3. Finance

AI has been adopted in the financial sector, allowing algorithms to analyze financial data and make predictions for investment decisions. Automated trading systems execute trades with minimal human intervention, while AI-powered chatbots and virtual assistants provide personalized financial advice and customer support.

4.4. Transportation

AI and automation technologies have revolutionized the transportation sector in developed economies, enabling autonomous vehicles for ride-sharing services, delivery logistics, and public transportation. Advanced traffic management systems use AI to optimize traffic flow, reduce congestion, and enhance safety.

4.5. Retail

AI and automation technologies have revolutionized the retail industry in developed economies, enabling personalized product recommendations, autonomous checkout systems, and AI-powered inventory management systems to optimize stock levels and reduce wastage.

5. Effects of Artificial Intelligence and Automation on Workers

The rise of artificial intelligence (AI) and automation technologies has had a profound impact on workers across various industries. Job displacement is one of the significant effects of AI and automation, leading to unemployment, income loss, and economic hardships for individuals and their families. AI and automation also bring changes in employment conditions for workers who remain employed, such as alterations in job roles, skill requirements, work hours, and work environments. Additionally, AI technologies can augment human workers' capabilities and improve efficiency and outcomes in various industries. However, changes in employment conditions also bring challenges, such as the need for workers to upskill or reskill to remain relevant in the job market. The widespread adoption of AI and automation technologies can have significant social and economic consequences. Increased automation can lead to higher productivity and economic growth, allowing organizations to streamline operations, reduce costs, and offer products and services at competitive prices.
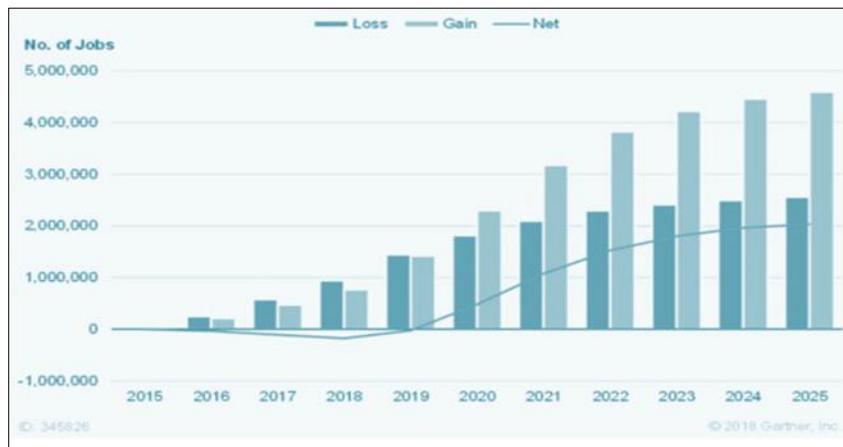
Figure 1 Impact of Artificial Intelligence & Automation on Jobs

Source: https://www.horsesforsources.com/gartner_fail_automation-ai_080418/

However, the social and economic consequences of job displacement and changes in employment conditions must be considered. To mitigate the potential negative effects of AI and automation, several measures can be taken. Upskilling and reskilling programs can help workers acquire new skills that align with emerging job roles, comprehensive social safety nets can provide financial support and reemployment assistance, labour market policies can encourage job creation and support entrepreneurship, ethical considerations should be prioritized in the development and deployment of AI and automation technologies, collaboration and integration between humans and AI should be fostered, lifelong learning and adaptability should be encouraged, and ethical considerations should be prioritized in the development and deployment of AI and automation technologies.

Peter Sondergaard, Gartner's Head of Research, predicted one in three jobs will be converted to software, robots and smart machines by 2025. Yes, he actually said that at his own Symposium and even added, "New digital businesses require less labor; machines will make sense of data faster than humans can." Fersht, 2018 [7]

6. Ethical Considerations in Artificial Intelligence and Automation

AI and automation have revolutionized various sectors, but they also bring ethical concerns. This study explores the ethical considerations associated with AI and automation, specifically focusing on fairness, bias, transparency, and responsible practices. Fairness is essential in AI systems to avoid discrimination and favouritism. Biases can arise due to biased data, algorithm design, or deployment methods. Transparency is essential for understanding and justifying AI system decisions. Responsible practices encompass ethical design, responsible data handling, and accountability. Addressing these ethical considerations requires multiple approaches, such as data quality and diversity during AI training, algorithm transparency through interpretable models and explanations, ethical guidelines and standards, continuous monitoring and evaluation of AI systems, and collaboration among interdisciplinary experts. By addressing these ethical considerations, we can harness the potential of AI and automation while upholding ethical standards and societal values.

7. Current State of Artificial Intelligence and Automation in Developing Economies

The current state of AI and automation in developing economies varies greatly depending on the country. Still, there is a growing interest in adopting these technologies to drive economic growth and development. Here are a few examples:

7.1. China

China is one of the world's leading AI and automation technologies adopters. The country has invested heavily in these areas and has set a goal of becoming a global leader in AI by 2030. China is using AI and automation to enhance manufacturing processes, improve logistics and transportation, and develop autonomous vehicles. For example, JD.com, one of China's largest e-commerce companies, has implemented an automated warehouse system that uses robots and AI to fulfil orders.

7.2. India

India is also making strides in the adoption of AI and automation technologies. The country has a large and growing IT industry, which is driving innovation in AI and automation. India is using these technologies to improve healthcare outcomes, enhance agricultural productivity, and improve transportation and logistics. For example, the Indian government has launched an AI-based healthcare program that uses machine learning algorithms to predict and prevent diseases.

7.3. Japan

Japan is one of the leading countries in developing and adopting artificial intelligence (AI) and automation technologies. Japan has a long history of developing advanced robotics and automation systems. Its companies are at the forefront of developing new technologies such as collaborative robots (cobots) and autonomous systems.

8. Successful AI and Automation in Developing Economies: Case Studies

8.1. India's Aadhaar System

India's Aadhaar system uses AI and automation. Aadhaar, a biometric identification system, gives every Indian a unique number. AI algorithms manage and authenticate data, enabling efficient government services like direct benefit transfers and financial inclusion. Aadhaar has improved efficiency, reduced corruption, and promoted social welfare.

8.2. Brazil's Smart Traffic Management System

Brazil's rapidly developing traffic management system uses AI and automation. São Paulo, known for its traffic, implemented a smart traffic management system that uses AI algorithms to optimize traffic flow, control signals, and monitor congestion. This implementation reduced travel time, fuel efficiency, and transportation management, improving productivity and quality of life.

8.3. MPedigree

This technology platform uses mobile and web-based technologies to authenticate pharmaceutical products in developing countries. It uses a simple text message-based system to verify the authenticity of medication before patients take them. The platform has successfully reduced the circulation of counterfeit drugs in Africa.

8.4. Zipline

This drone delivery service delivers medical supplies and blood products to remote areas in Rwanda and Ghana. The service has helped to reduce delivery times and improve access to healthcare in these regions.

8.5. FarmDrive

This platform uses AI to analyze data from small-scale farmers in Kenya to determine their creditworthiness. The platform has helped increase credit access for small farmers who would not have qualified for loans from traditional financial institutions.

8.6. Cognotekt

This AI-based platform uses machine learning algorithms to analyze customer data for businesses in India. The platform has helped companies to optimize their marketing strategies and improve customer engagement.

8.7. Kudi.ai

This Nigerian fintech start-up uses AI and chatbots to provide financial services to the unbanked population in the country. The platform allows users to pay bills, transfer money, and access other financial services using their mobile phones.

9. Anticipated Benefits of AI Across Various Global Regions by 2030

The potential gains from Artificial Intelligence (AI) are enormous and diverse, and they are expected to impact different regions of the world in different ways. By 2030, AI is predicted to have a transformative impact on various sectors, ranging from healthcare to finance, manufacturing, and transportation.
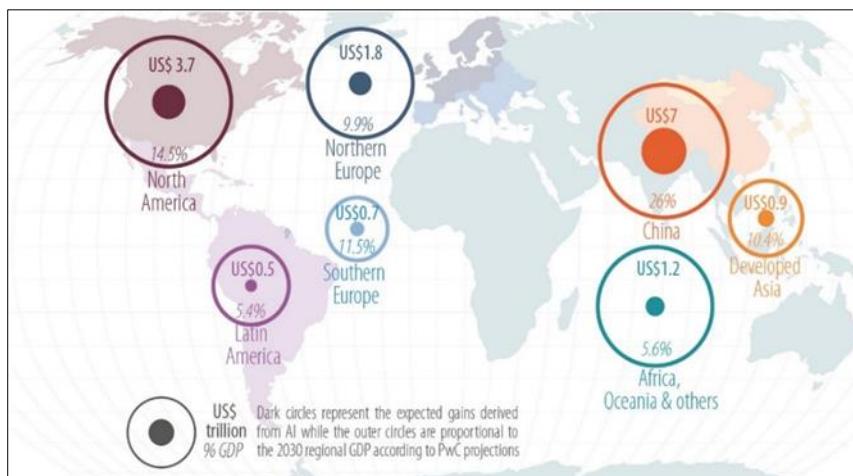

Figure 2 Anticipated Benefits of AI Across Various Global Regions by 2030

Source: The Macroeconomic Impact of Artificial Intelligence, PwC, 2018.

In North America, AI is expected to significantly impact the economy by increasing productivity, improving quality of life, and reducing costs. For instance, AI is expected to revolutionize healthcare by improving patient outcomes, reducing healthcare costs, and increasing access to healthcare services. AI is predicted to revolutionize how financial institutions operate in the finance sector, making them more efficient and competitive.

In Europe, AI is expected to drive innovation and help to tackle societal challenges. For instance, AI can be used to improve public services, such as transportation, energy, and health. In the manufacturing sector, AI can enhance

production processes, reduce costs, and improve the quality of goods. Additionally, AI can be used to increase the security of citizens by helping to detect and prevent crime.

In Asia, AI is expected to have a transformative impact on many aspects of life. For instance, AI can be used to improve healthcare outcomes by enabling better diagnosis and treatment of diseases. In the transportation sector, AI can help to reduce traffic congestion, improve road safety, and increase fuel efficiency. Additionally, AI can be used to improve education outcomes by providing personalized learning experiences.

In Africa, AI is expected to help address some of the continent's most pressing challenges, such as poverty, disease, and lack of access to basic services. For instance, AI can be used to improve agricultural practices, increase food production, and mitigate the impact of climate change. In the healthcare sector, AI can help to improve access to healthcare services, reduce the cost of treatment, and improve the quality of care.

10. Conclusion

The study examines the current state of AI and automation technologies, assess their effects on workers, and discuss ethical considerations associated with their implementation. Key findings and insights have emerged, shedding light on the complex and multifaceted nature of this rapidly evolving landscape.

To begin, the study found that AI and automation technologies have made significant advances in recent years, revolutionizing various industries and changing the nature of work. Developed economies have been early adopters of these technologies, incorporating them into manufacturing, finance, healthcare, and transportation industries. The increasing capabilities of AI systems and task automation have resulted in increases in productivity, efficiency, and innovation, allowing businesses to streamline operations and provide better services.

However, the use of AI and automation has raised concerns about the impact on workers. According to the research, these technologies can cause job displacement as certain tasks become automated, potentially leading to unemployment or the need for workers to adapt their skills to new roles. Changes in employment conditions, such as the rise of the gig economy and the prevalence of precarious work, have also been linked to the implementation of AI and automation. These changes present challenges in terms of job security, income stability, and worker rights, necessitating a thorough examination of labour market dynamics and the development of policies that ensure equitable and inclusive outcomes.

Ethical considerations have emerged as a critical component of the AI and automation debate. The study emphasized the significance of addressing issues such as fairness, bias, transparency, and responsible practices in developing and deploying these technologies. The risk of algorithmic bias and discrimination has been a major source of concern, emphasizing the importance of strong safeguards and regulatory frameworks that promote accountability and protect individuals' rights. Furthermore, ensuring AI system transparency and explain ability is critical for building trust and facilitating meaningful human-AI collaboration.

The study has provided a comprehensive exploration of the future of work in the context of AI and automation. It has uncovered potential challenges and risks associated with these technologies, but also highlighted their potential for positive change. Strategic planning and proactive measures are essential to mitigate the adverse effects on workers and foster a future of work that is inclusive, fair, and sustainable. To navigate this evolving landscape successfully, policymakers, businesses, and society must collaborate and strive for a future that harnesses the benefits of AI and automation while prioritizing the well-being and dignity of workers. Only through responsible practices, thoughtful regulation, and inclusive policies can we shape a future of work that is both technologically advanced and socially just.

Recommendations for Future Research

The future of work in developed economies is being shaped by the integration of artificial intelligence (AI) and automation. To advance our understanding of this rapidly evolving landscape, several key areas of research are recommended.

First, it's important to consider how automation and AI will affect employment and job loss. Finding the sectors and job categories most vulnerable to automation as well as researching retraining and skill-up strategies for displaced workers are required to achieve this. It's also essential to comprehend the dynamics of job creation in emerging industries. Second, research should concentrate on the changing skill requirements brought on by automation and AI. It will be crucial to pinpoint the precise skills that are required and create strategies that are efficient for supplying the workforce

with these skills. The implications for educational systems and the requirement for adaptable training programs should both be taken into account in this research.

The possibilities and challenges of human-AI collaboration in the workplace should be explored, including ethical considerations, social and economic implications, sector-specific studies, global comparisons, policy frameworks and regulatory measures, and long-term implications. These research areas will help gain a comprehensive understanding of the future of work in developed economies and develop strategies to navigate the challenges, and harness the opportunities presented by AI and automation.

Compliance with ethical standards

Disclosure of Conflict of interest

There are no conflicts of interest

References

[1]   Autor, D. H., Levy, F., & Murnane, R. J. (2003, November 1). The Skill Content of Recent Technological Change: An Empirical Exploration. The Quarterly Journal of Economics, 118(4), 1279–1333. https://doi.org/10.1162/003355303322552801

[2]   Allen, R. C. (2009, October). Engels' pause: Technical change, capital accumulation, and inequality in the british industrial revolution. Explorations in Economic History, 46(4), 418–435. https://doi.org/10.1016/j.eeh.2009.04.004

[3]   Autor, D. H. (2015, August 1). Why Are There Still So Many Jobs? The History and Future of Workplace Automation. Journal of Economic Perspectives, 29(3), 3–30. https://doi.org/10.1257/jep.29.3.3

[4]   Arntz, Gregory, & Zierahn. (2016, May 14). The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis. OECD Social, Employment and Migration Working Papers, No. 189, OECD Publishing, Paris. https://doi.org/10.1787/5jlz9h56dvq7-en

[5]   L. Britton, & G. Atkinson. (2017, April 29). An Investigation Into the Significant Impacts of Automation in Asset Management. David Publishing, 5(5), 418–428. https://doi.org/10.17265/2328-7144/2017.05.004

[6]   Acemoglu, D., & Restrepo, P. (2018, June 1). The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment. American Economic Review, 108(6), 1488–1542. https://doi.org/10.1257/aer.20160696

[7]   Fersht, P. (2018, April 8). Gartner Fails Spectacularly With Its 180-Degree Flip on the Impact of AI Automation on Jobs - Horses for Sources | No Boundaries. Horses for Sources | No Boundaries. Retrieved June 4, 2023, from https://www.horsesforsources.com/gartner_fail_automation-ai_080418/

[8]   Heavin, C., & Power, D. J. (2018, May 8). Challenges for digital transformation – towards a conceptual decision support guide for managers. Journal of Decision Systems, 27(sup1), 38–45. https://doi.org/10.1080/12460125.2018.1468697

[9]   McKinsey Global Institute, Notes from the AI frontier – Modeling the impact of AI on the world economy, discussion paper, September 2018.

[10]   Bhattacharyya, S. S., & Nair, S. (2019, April 8). Explicating the future of work: perspectives from India. Journal of Management Development, 38(3), 175–194. https://doi.org/10.1108/jmd-01-2019-0032

[11]   Adam, M., Wessel, M., & Benlian, A. (2020, March 17). AI-based chatbots in customer service and their effects on user compliance. Electronic Markets, 31(2), 427–445. https://doi.org/10.1007/s12525-020-00414-7

[12] Parker, S. K., & Grote, G. (2020, February 13). Automation, Algorithms, and Beyond: Why Work Design Matters More Than Ever in a Digital World. Applied Psychology, 71(4), 1171–1204. https://doi.org/10.1111/apps.12241

[13] Paschen, U., Pitt, C., & Kietzmann, J. (2020, March). Artificial intelligence: Building blocks and an innovation typology. Business Horizons, 63(2), 147–155. https://doi.org/10.1016/j.bushor.2019.10.004

[14] Fosso Wamba, S., Bawack, R. E., Guthrie, C., Queiroz, M. M., & Carillo, K. D. A. (2021, March). Are we preparing for a good AI society? A bibliometric review and research agenda. Technological Forecasting and Social Change, 164, 120482. https://doi.org/10.1016/j.techfore.2020.120482

[15] Frick, N. R. J., Mirbabaie, M., Stieglitz, S., & Salomon, J. (2021, January 6). Maneuvering through the stormy seas of digital transformation: the impact of empowering leadership on the AI readiness of enterprises. Journal of Decision Systems, 30(2–3), 235–258. https://doi.org/10.1080/12460125.2020.1870065

[16] Özkiziltan, D., & Hassel, A. (2021). Artificial Intelligence at Work: An Overview of the Literature. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3796746

[17] Giraud, L., Zaher, A., Hernandez, S., & Akram, A. A. (2022, June 13). The impacts of artificial intelligence on managerial skills. Journal of Decision Systems, 1–34. https://doi.org/10.1080/12460125.2022.2069537

[18] Goto, M. (2022, January 3). Accepting the future as ever-changing: professionals' sensemaking about artificial intelligence. Journal of Professions and Organization, 9(1), 77–99. https://doi.org/10.1093/jpo/joab022

[19] Monod, E., Lissillour, R., Köster, A., & Jiayin, Q. (2022, April 26). Does AI control or support? Power shifts after AI system implementation in customer relationship management. Journal of Decision Systems, 1–24. https://doi.org/10.1080/12460125.2022.2066051

[20] Faishal, Mathew, & Yanthan. (2023, May 24). Tech-tonic Shifts: Exploring the Impact of Technology on the Indian Economy. International Journal of Novel Research and Development, 8(5), g177–g188. https://doi.org/10.1729/Journal.34332