

## Research Article

# THE GLOBAL SOCIAL DYNAMICS AND INEQUALITIES OF ARTIFICIAL INTELLIGENCE

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### ABSTRACT

This article explores the potential of Artificial Intelligence (AI) to exacerbate or promote social inequities. AI, which replicates human intellect through technology, could impact global social dynamics significantly. Expert systems, voice recognition, natural language processing, and machine vision are examples of AI applications. The study aims to analyze the impact of AI in high-income and Low- and Middle-Income Countries (LMICs) and identify the factors contributing to social inequalities arising from adopting and utilizing AI technologies. By analyzing secondary data from academic literature, research papers, and policy documents, this study provides insights into the societal effects of AI. It emphasizes the need for proactive efforts to address AI-related inequities. The impact of AI on labour markets, education systems, healthcare practices, and governance structures is examined by reviewing current literature. Qualitative research methods are employed to understand AI's social influence comprehensively. The study highlights economic gaps in access to AI technologies, emphasizing the digital divide as a critical issue that needs to be overcome for broad and equitable AI deployment. Biases in AI systems that perpetuate discrimination and social preconceptions are also identified. The results underscore the importance of responsible AI development and inclusive policies to mitigate adverse effects and harness AI's potential for social benefit. Policymakers must prioritize education and digital infrastructure to bridge the digital gap and protect disadvantaged groups in an AI-driven future. The research underscores the need for fairness and transparency in AI systems and recommends ethical rules and legislation to address biases and promote equal opportunities. This research highlights the urgent necessity to address the social dynamics and inequalities associated with AI adoption. Companies can contribute to more inclusive and equitable AI systems by promoting diversity in AI development teams and conducting regular bias checks. Policymakers, industry leaders, and society must collaborate to establish a robust ethical framework for AI development, ensuring that AI technology is used for all benefits. By understanding and tackling the challenges posed by AI, we can strive towards a more equal and just society.

**Keywords:** Artificial Intelligence, social inequities, AI adoption, digital divide, biases, responsible AI development, inclusive policy, education, transparency, equality.

### INTRODUCTION

#### Background on Artificial Intelligence (AI)

One of the most transformational and disruptive technologies of the 21st century is artificial intelligence (AI). As AI systems become more interwoven into society, worries about global social dynamics and associated injustices are growing. This article examines such dynamics and AI-related disparities, focusing on the global environment. AI involves creating and using computer systems or computers with intelligent behavior, frequently mimicking human intelligence. Intelligent machines use massive volumes of data to detect patterns, forecast, and act independently. AI's healthcare, transportation, finance, and communication applications provide new opportunities for innovation and efficiency. However, as AI use grows, it is necessary to critically assess the societal ramifications of its development and implementation internationally. AI integration may worsen societal imbalances or generate new ones across countries. Research implies that AI may boost productivity and economic development, displacing jobs and polarizing wealth. By 2030, AI and technology may replace 800 million jobs globally, according to McKinsey Global Institute (2017) research. Workers with lesser education and specialized skill sets may require assistance adapting to the changing employment market due to this displacement. AI technology access discrepancies may also promote socioeconomic inequality. The digital divide—unequal access to technology and skills—continues worldwide. As AI becomes more integrated into essential services, people who need it may be left behind, dividing society. According to a 2019 UN study, AI research and development

is concentrated in a few nations, expanding the technological divide between rich, low and middle-income countries (LMICs). Data and algorithmic biases affect AI's global social dynamics. Data bases in AI training may perpetuate discrimination. Historical and social biases encoded in data or algorithms may distort decision-making and marginalize vulnerable and disadvantaged groups. These biases must be identified and mitigated to make AI systems fair and accountable. AI's global nature presents geopolitical and power structural problems. AI affects national security, economic competitiveness, and international relations. Advanced AI may lead to power and influence imbalances. Governments must collaborate and build ethical frameworks to mitigate the adverse effects of AI-driven geopolitical rivalry as they develop their AI policies. Global AI social dynamics are complicated and multidimensional. Fairness, equitable access, and accountability are needed to prevent AI from worsening disparities and creating new ones. Governments, legislators, industry leaders, and academics must collaborate to set ethical norms, regulatory frameworks, and education and skills development to address global AI deployment concerns. We can leverage AI's promise for humanity by identifying and actively tackling its social dynamics and injustices.

#### Importance of studying social dynamics and inequalities related to AI

Studying AI's social dynamics and disparities is crucial in today's fast-changing technology context. As artificial intelligence grows more widespread, it may worsen or create new socio-economic inequality. These challenges must be addressed for several reasons. First, AI systems are biased by their data. AI systems may discriminate if the data mirror social preconceptions. We can discover and reduce these biases by understanding social dynamics and making AI systems fair,

ethical, and non-discriminatory. Second, algorithmic discrimination is a worry with AI in employment, lending, and criminal justice. AI systems may propagate social inequality and lead to uneven chances and results if not adequately built and regulated. Such injustices may be prevented by studying AI-related social processes.

Thirdly, AI's digital divide is a significant issue; AI technology and education may be unavailable to specific populations, exacerbating inequality. As shown in Figure 1 below, by researching social dynamics, we may better understand these discrepancies and design measures to close the gap, ensuring everyone can access AI-driven possibilities. Finally, ethical AI development must consider society's different demands and beliefs. AI development must be human-centered to protect vulnerable groups and gain public confidence. Studying social dynamics helps create more inclusive AI solutions by revealing community concerns and aspirations. Studying AI-related social dynamics and inequities is essential for a technologically sophisticated, egalitarian, and morally responsible future. We can maximize AI's potential while ensuring everyone benefits by tackling biases, discrimination, the digital gap, and ethics. We must design AI to advance society and improve everyone's well-being.

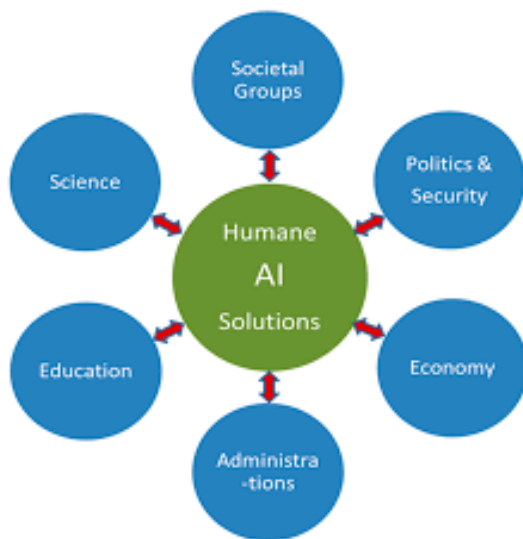


Figure 1: AI diverse integration

### Purpose of the study.

The study examines the influence of artificial intelligence (AI) on social dynamics and inequalities worldwide. This research explores how AI shapes various aspects of society, including labour markets, educational systems, healthcare practices, and governance structures. The study aims to analyze the impact of AI in both rich and LMICs and identify the factors contributing to social inequalities arising from adopting and utilizing AI technologies. By understanding the social dynamics and inequalities associated with AI, the research seeks to provide insights that can inform policymakers, organizations, and communities on how to mitigate risks and maximize the benefits of AI to create more inclusive and equitable societies.

### Research Questions

1. To what extent does adopting artificial intelligence (AI) technology contribute to global social dynamics and inequalities?
2. How do different regions and countries vary regarding AI adoption and its impact on social dynamics and inequalities?
3. What are the critical social, economic, and political factors that influence the spread of AI and subsequent inequalities on a global scale?

4. What are the specific social groups most likely to be excluded or marginalized due to the adoption of AI, and what are the underlying causes of these inequalities?

## LITERATURE REVIEW

### A. Overview of existing research on AI and social dynamics

AI and social dynamics study how AI affects human interactions and society. This research addresses AI's impact on social media and communication, human-robot interaction, prejudice and fairness in AI algorithms, the changing labour market owing to automation, privacy concerns, and social transformation. One key conclusion is that AI-driven information curation in social media platforms can create filter bubbles and polarization, reinforcing users' existing ideas and limiting exposure to various perspectives (Zajko, 2022). Research has stressed the need to overcome AI system biases to eliminate discrimination in hiring and criminal justice (Davies *et al.*, 2021). Human-Robot Interaction studies how people interact with AI-powered robotics and intelligent systems. Anthropomorphism, emotional attachment to robots, and AI's ethical implications in social settings like elderly care and companionship have been studied (Jobin *et al.*, 2019). Studies have also examined AI's impact on employment, including job displacement and the need for upskilling and reskilling. Transparency, accountability, and AI governance have been discussed to ensure ethical AI development and implementation (Crawford, 2021). As AI advances, social dynamics research is vital. It highlights the ethical issues and potential benefits of AI in healthcare, education, and environmental sustainability. To exploit AI's promise while minimizing its adverse effects on society, policymakers, researchers, and industry leaders must unite to build solid ethical frameworks and rules. Responsible AI development and a better knowledge of the intricate interplay between AI and social dynamics can help us traverse the disruptive terrain of AI technology and assure its alignment with human values and societal well-being.

### B. Examination of previous studies on AI and inequalities

"A Future That Works: AI, Automation, Employment, and Productivity" is from McKinsey Global Institute's June 2017 study. The research shows that algorithms, processing power, and data availability have advanced AI and automation. AI and automation offer many advantages for enterprises, economies, and society. In media, consumer goods, energy, agriculture, manufacturing, healthcare, finance, and transportation, AI and automation may drive innovation, change, and productivity. It shows how machine learning and automation can enhance clinical trials, tailor advertising and financial goods, forecast health outcomes, and provide predictive maintenance in numerous areas. However, the study also recognizes many issues. These problems include employment displacement, worker skills and training, distributional difficulties, AI algorithm biases, safety, cyber security, and ethics. The article notes that labour costs, legislative and societal issues, technological feasibility, and AI technology development and deployment costs will affect AI and automation adoption. The research indicates that although AI and automation have great potential to drive economic growth and improve lives, they must be structured to realize their advantages and positively influence society and economies fully.

Zajko (2022) examines AI and socio-economic inequalities. AI and algorithmic systems have been criticized for perpetuating bias, discrimination, and inequities. The author emphasizes that while AI researchers have mostly ignored social inequality literature, sociologists are increasingly studying AI's significant social changes. Engaging with social inequality studies challenges us to understand

how AI systems may perpetuate and strengthen pre-existing inequalities rather than just perceiving bias as a problem to be fixed. Zajko proposes three ways sociologists might influence AI development and implementation. First, they can raise awareness of AI system biases and discrimination to encourage critique and refusal. Researchers and stakeholders can influence AI's direction by rejecting biased technologies. Second, the author emphasizes employing AI to fight inequality. Sociologists can use AI to improve society by creating and using anti-discrimination AI technology. The article also emphasizes the importance of algorithm governance to reduce social inequality. Strong AI laws, regulations, and policies provide openness, fairness, and accountability. This is especially important as government entities deploy AI, which has been shown to exacerbate socio-economic inequality. Finally, public policy can shape AI's societal effects. Public policy offers opportunities to use AI to solve social issues despite the hazards of reinforcing inequities. Objectives must be clearly stated to achieve this, and the limitations and risks of employing AI to solve societal concerns must be addressed.

### C. Identification of gaps in the literature

The literature on global social dynamics and AI disparities shows many gaps. First, AI development and acceptance in OECD countries like Africa, South America, and portions of Asia should be studied more. Inclusive AI strategies must understand these areas' AI implementation problems and potential. Second, although AI may increase gender, racial, and ethnic inequality, intersectional inequalities are seldom studied. AI's effects vary by identity and socio-economic class, requiring a more comprehensive look at how inequality and AI adoption interact (McKinsey Global Institute, 2017). Longitudinal research on AI's long-term effects on social dynamics and inequality does not exist. Longitudinal research is needed to understand how AI-related inequities change over time and how policy initiatives affect them. A comparative study on AI adoption and its consequences across nations or regions is needed. Comparative studies may illuminate AI-related social dynamics and inequality and highlight best practices and lessons learned. Finally, more qualitative studies on AI's effects on social dynamics and inequities must be conducted. Interviews and focus groups may help researchers comprehend AI's ethical and social effects. The literature may also lack minority voices, essential to understanding how AI impacts diverse socio-economic groups. Future research should incorporate various viewpoints to eliminate prejudices and guarantee that AI policy serves all populations. This paper aims to address these gaps; doing so will help us grasp the complicated interplay between AI, social dynamics, and inequality (Walter et al., 2020). It will improve AI development and implementation, creating ethical and accountable AI frameworks that benefit society.

## METHODOLOGY

### Research design and approach

This qualitative study will examine the Global Social Dynamics and Inequalities of Artificial Intelligence. Qualitative methods are best for studying AI adoption's social effects and inequities (Brayne and Christin, 2021). The research will reveal how AI affects global social dynamics and inequities by analyzing secondary data sources.

### Data collection methods

This research will collect data by reviewing secondary sources. Academic literature, research papers, studies, policy documents, and credible articles will be used (Zajko, 2022). This project will integrate

knowledge, discover patterns, and reveal trends in AI's social impact and inequality across regions and communities using a wide range of secondary data.

### Selection of study participants

This study uses secondary sources; hence participant selection is irrelevant. Instead, it will study and combine research on AI's social dynamics and inequities across contexts and communities.

### Data analysis techniques

The vast secondary literature will be systematically analyzed in this study. Research papers, previous studies, articles, and policy documents that investigate AI's social dynamics and inequalities in different contexts will be identified and selected as a part of a complete literature review (Zajko, 2022). purposes, techniques, findings, and theoretical frameworks will all be recorded as part of the data extraction process. All relevant information for analysis has been extracted. The thematic analysis follows data analysis, iteratively identifying themes, patterns, and trends in extracted data. Code and categorize the data to study AI's societal impacts and how it affects social dynamics and inequities. Thematic analysis organizes numerous perspectives and facts from many sources for a holistic understanding of the topic. Interpretation and synthesis will conclude; themes and trends will be examined considering academic frameworks and AI's social impact discussions. This synthesis will illuminate how AI adoption affects the economy, labour, education, and governance (Davies et al., 2021). Data interpretation and synthesis will yield key conclusions about AI's social impacts and role in inequalities, informing policymakers, researchers, and stakeholders about possible solutions.

## GLOBAL SOCIAL DYNAMICS OF AI

### Identification and analysis of global AI initiatives and investments

The 13th Five-Year Plan, Internet Plus, and AI programs have helped China become a leader in AI. China wants to build a \$150 billion AI sector by 2020 and become a global AI leader by 2030. Alibaba, Baidu, Tencent, and iFlytek have formed a "national team" to research AI for driverless cars, smart cities, and medical imaging. China leads AI research and technology due to government support and the private sector excitement. On the other hand, Europe is taking steps to be competitive in AI while tackling ethical and societal issues. EU countries have pledged to work together to solve these problems. The EU wants \$24 billion in AI research by 2020. Individual European nations are also developing AI capabilities. France aims to increase AI researchers and students, establish new data-sharing regulations, and spend \$1.85 billion on AI research and companies (Davies et al., 2021). The "artificial intelligence sector deal" in the UK strengthens AI foundations and leads in AI ethics. These coordinated initiatives demonstrate Europe's commitment to leading AI research and responsible AI implementation.

Additionally, Government and corporate sector efforts have boosted AI research and development in Canada. The Pan-Canadian Artificial Intelligence Strategy, led by CIFAR, includes the Alberta Intelligence Institute in Edmonton, the Vector Institute in Toronto, and MILA in Montreal. These institutions are conducting AI research and development in Canada, making it a worldwide AI player. Canada's AI hub status is due to concentrated investment and teamwork (Canada, 2022).



## Examination of AI adoption patterns in different regions

Some areas dominate AI research and development, while others currently implement it, as shown in figure 2 below. North America, especially the US and Canada, leads worldwide AI research. According to Stanford University, the US published approximately one-third of all AI articles between 1982 and 2019. Tech titans like Google, Microsoft, and Amazon spend heavily on AI initiatives and shape cutting-edge AI technology on the continent. The UK, Germany, and France are major AI players in Europe. By 2020, over €20 billion will be spent on AI in the area, according to the European Commission. Europe has 25 percent of the world's AI start-ups, showing a solid start-up environment that promotes AI innovation. The EU's "AI for Humanity" initiative promotes responsible AI development and use. China leads AI usage in Asia; China wants to lead AI innovation by 2030. Nearly 30 percent of AI-related patents are from the nation. China is a strong AI competitor due to its tremendous AI startup and investment development. Japan and South Korea spend considerably on AI research and development to boost their competitiveness (Wajcman, 2017). South America and Africa are still adopting AI. According to WIPO, these continents account for fewer than 1 percent of AI-related patent applications. These areas show promising development. Brazil and South Africa invest in AI research and development to solve social issues and boost economic growth. These continents' governments, corporations, and research institutes are recognizing AI's role in influencing the future and investing in AI programs.

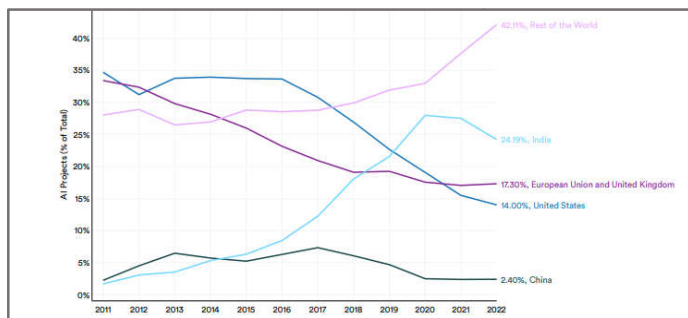


Figure 2: AI projects by Geographic area 2011-2022

## Assessment of AI impact on employment and labour markets worldwide

AI's influence on employment markets is considerable and regional. AI-powered robots and devices have automated production in wealthy nations. Low-skilled assembly line employees lost their jobs. In industrialized countries, AI-powered chat bots, virtual assistants, and automation technologies have streamlined company processes but eliminated contact center and data entry employment (Susskind, 2018). In industrialized nations, AI has spawned new jobs in data science, machine learning, AI development, and cyber security. As firms seek AI knowledge, these people are in high demand. AI has enabled financial and healthcare businesses to make data-driven choices in industrialized nations, improving efficiency and production. AI has positively and negatively affected employment markets in emerging countries. AI-automated agriculture and industry have displaced jobs in rural areas (Christin, 2020). As AI automates processes, workers must reskill and learn new skills to be relevant. However, emerging countries with vital IT sectors may provide complementary AI-related services to firms in industrialized ones. AI service providers and outsourcing enterprises have grown in these locations, boosting economies. However, emerging nations need help to provide sufficient AI job market training and education. To prepare workers for AI jobs, education and skill development must

be prioritized (ESDC, 2019). Opportunities and challenges for AI adoption exist in today's emerging economies. Some emerging economies may forego older technologies in favor of AI, boosting productivity and business competitiveness. To better adjust to the changing job landscape, communities embracing AI must invest in training their employees. Governments and businesses must spend money on training and education to profit from the AI revolution (Zajko, 2022). Some firms and regions in underdeveloped countries may benefit from AI, while others fall farther behind. AI has a profound influence on employment markets. Investment in worker training, innovation, and inclusive economic development are needed to overcome AI disruption. Governments, educational institutions, and the commercial sector must collaborate to spread AI benefits fairly and prepare the workforce for an AI-driven society.

## Analysis of cultural and societal perceptions and attitudes towards AI

Various cultures and groups have different AI views. Culture, history, education, media, and economics influence AI adoption and comprehension. AI systems may propagate prejudices that disproportionately affect underrepresented populations. Data used to train these algorithms typically reflects previous social inequality and discrimination, causing severe biases (Ciforet *et al.*, 2019). AI systems may promote stereotypes and harm vulnerable groups. Biased AI algorithms affect underprivileged criminal justice, employment, healthcare, finance, and education populations. Biased AI systems based on historical data that over-represent specific populations as criminals might make unjust and discriminatory criminal justice judgments (Boyd and Holton, 2018). This may lead to increased false positives and unfair arrests for underprivileged populations. Biased algorithms may worsen racial profiling, perpetuating prejudice. Biased AI algorithms used for recruiting and promotion might exclude specific ethnicities. If historically biased hiring data are utilized to train the algorithm, it may continue favouring dominant groups over minority ones. This limits possibilities and wages for these areas.

Healthcare AI systems may bias diagnosis and treatment; An algorithm trained on biased medical practices or underrepresented populations may misdiagnose and undertreat minority groups (Cruz, 2020). This may aggravate health disparities and reduce quality healthcare for the most vulnerable. Credit score and loan approval AI algorithms may prolong economic inequality in the banking industry (Coudry and Mejias, 2019). The AI system may perpetuate previous lending inequities, making it difficult for underprivileged people to access financial resources and generate wealth. Biased AI systems may worsen educational inequality. If an algorithm is trained on biased data that favors specific institutions or excludes vulnerable pupils, it may restrict educational chances and exacerbate the success gap.

## INEQUALITIES IN AI IMPLEMENTATION

### A. Exploration of economic disparities in AI access and adoption

AI may worsen economic inequities, resulting in unequal access and adoption. AI technology costs contribute to these inequities. AI systems are cheaper for wealthy people, corporations, and governments to develop and implement. Small and medium-sized organizations, startups, and individuals with little financial means may need help to invest in AI technology, placing them disadvantaged in the quickly changing digital world. AI implementation also depends on trained labour. AI and data science experts are rare and generally concentrated in particular locations or businesses. Wealthier companies can recruit and retain elite AI personnel, giving them a

competitive advantage via new AI solutions. Smaller firms and poor areas may need more skills, restricting AI use. Data access contributes to AI implementation economic inequities (Bhambra, 2014). Extensive and varied datasets help AI systems make accurate predictions and judgments. Companies with plenty of data can build better AI models than those without. Data ownership and collecting techniques generate privacy and data sovereignty problems, possibly disadvantaging those with less data control. Finally, regulation may affect AI adoption in different economic sectors (Amani, 2021). Due to limited resources, stricter rules and compliance requirements may restrict AI adoption by smaller enterprises and startups. Larger firms may have the financial resources to comply with these rules. This might worsen economic imbalances, with giant businesses dominating AI while smaller players struggle.

### **B. Examination of gender, racial, and ethnic inequalities in AI development and application**

AI development and implementation have been plagued by gender, racial, and ethnic inequities. Women and non-binary people have historically been underrepresented in AI. AI development teams without diversity may create biased algorithms and products that do not meet all consumers' demands (Vicsek, 2020). The lack of racial and ethnic minorities in AI may also perpetuate biases in data collecting and algorithmic decision-making, promoting societal inequality. AI systems typically reflect the biases in their training data. AI systems may reinforce preconceptions and discrimination when datasets lack diversity. Facial recognition technologies may misidentify and unfairly punish people of specific races and ethnicities due to increased mistake rates (Benjamin, 2019). AI technology may also worsen inequities; Automated systems may promote systematic inequality in recruiting, financing, and criminal justice. AI systems may learn and reproduce prior prejudices, resulting in unfair employment, lending, and sentence judgments. AI, politicians, and stakeholders must collaborate to address these disparities. Diversifying AI development teams and encouraging inclusive behaviors helps reduce algorithm bias. Transparency and accountability in AI systems may help identify biases and unjust results. Audits and impact evaluations may find and fix prejudice (Walch, 2020). For more equal and fair AI systems, training datasets must be varied and reflective of all communities. We can improve AI technology for all people by understanding and addressing these discrepancies.

### **C. Assessment of the digital divide and its correlation with AI inequalities**

The digital gap is society's unequal access to digital technology like computers and the internet. Income, location, age, education, and ethnicity may separate people. The digital divide has severe consequences in a world where technology is essential. With internet resources, education, jobs, and information are unlimited. However, AI inequalities refer to unequal AI advantages and hazard distribution. AI may transform businesses and enhance lives but can also aggravate social disparities. Skewed data may cause AI systems to be prejudiced and discriminate against disadvantaged populations (Boyd and Holton, 2018). The digital gap and AI inequality are linked because AI systems that propagate prejudice and discrimination further marginalize individuals with inadequate technological access (Collins, 2018). AI algorithms applied in hiring or loan approvals may favor privileged groups, exacerbating employment and finance gaps. Additionally, communities with access to AI-powered services like tailored healthcare or educational tools may gain lifestyle-improving advantages. Reducing AI inequities requires addressing the digital gap. Equal access to digital resources helps gather varied and representative data for fair and inclusive AI systems (Ciforet *et al.*, 2019).

Governments, tech businesses, and nonprofits must collaborate to bridge the digital gap by providing inexpensive internet access, sponsoring digital literacy initiatives, and making technology available to everyone. AI developers should also stress justice and transparency to design AI systems that assist everyone, regardless of background or socio-economic standing.

### **Analysis of policy and regulatory frameworks influencing AI inequalities.**

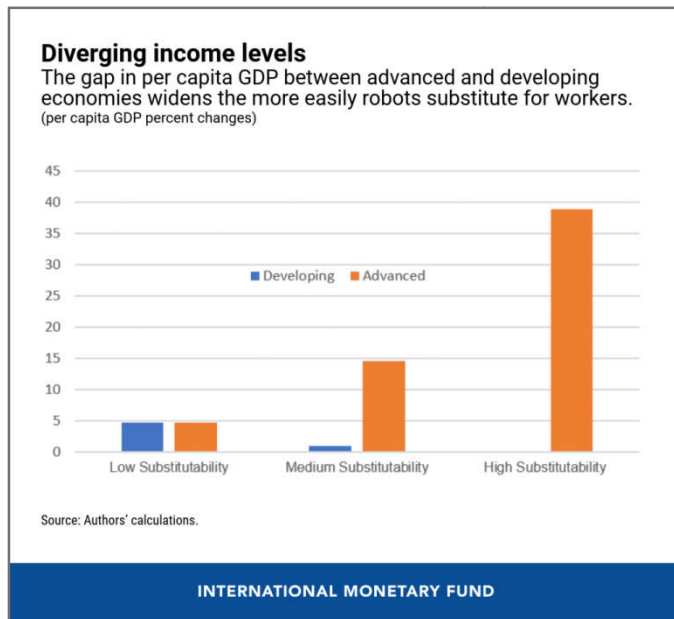
The implications of legislative and regulatory frameworks on AI inequalities challenge AI's societal integration. AI may exacerbate rising inequalities. Therefore, comprehensive and well-thought-out regulation is required to distribute the advantages of AI fairly. AI policy and laws vary widely among nations and regions. Some have cited openness, fairness, and data privacy to reduce the dangers posed by AI. However, others may have lacked adequate safeguards, endangering at-risk communities. Access to artificial intelligence technologies might need to be improved because of regulatory discrepancies. Evaluating the results of policies is an excellent way to improve them (Stinson, 2021). Lawmakers should consider whether or how proposed AI legislation addresses ethical concerns and mitigates damage to the marginalized population. They should aggressively seek input from experts, civil society, and industry stakeholders for more inclusive and prosperous policies. Policymakers must encourage international cooperation and information sharing to solve AI inequities. International AI development and deployment standards may mitigate inequities more consistently. Policymakers may learn from each other and exchange best practices through supporting cross-border collaboration. Diversifying AI development teams may also help eliminate prejudice in AI systems. Diverse ideas and experiences may help create more fair AI systems that benefit everyone (Birhane, 2021). AI education and training for marginalized populations may enable them to participate in and profit from the AI-driven economy.

## **IMPACTS OF AI ON SOCIAL DYNAMICS AND INEQUALITIES**

### **Examination of AI's impact on income inequality and wealth concentration**

Concerns about AI's influence on income inequality and wealth concentration have grown. AI and automation might transform sectors, boost productivity, and generate new jobs. However, the broad use of AI technology has negatively affected the economy and society. AI-powered automation displacing employment is a significant issue (Zajko, 2022). As AI and robots advance, repetitive and low-skilled employment may be replaced, resulting in substantial job losses. This might worsen economic inequality by making it harder for low-income workers to find work or forcing them to choose lower-paying positions. AI's influence on sectors may also concentrate wealth. Early adopters and tech giants may become wealthy and powerful as corporations use AI to optimize operations and acquire a competitive advantage. As a tiny sector of society reaps the benefits of AI adoption, others may be left behind, increasing the economic gap. AI and technology inequality also contribute to income disparity (Bhambra, 2014). Smaller organizations and individuals frequently need more financial and technical resources to develop and deploy AI systems. Lack of access may impede economic development and upward mobility, increasing income inequality. AI's effects on wealth and income inequality demand a diverse approach. Policymakers must provide fair AI education and training access to help employees adapt to shifting labour markets. Policies supporting the responsible development and

deployment of AI technology, as well as steps to redistribute wealth and eliminate monopolistic activities, may help mitigate the negative impacts of AI on income inequality and build a more inclusive economy. Illustratively, Figure 3 below shows the regional disparities between the wealthy and LMICs:



**Figure 3: AI influence on Income distribution among Rich and LMICs**

### Assessment of AI's influence on social mobility and economic opportunity

AI has changed social mobility and economic opportunities over the past decade. AI has enabled entrepreneurs, startups, and established enterprises to optimize processes, expand markets, and create new goods and services. This has led to economic growth and new jobs in numerous sectors, allowing some people to rise in society and income. AI's impact on social mobility and economic opportunity is complicated. AI adoption has also displaced jobs, especially in mundane work that can be mechanized. This has worsened income inequality and hindered social mobility for low-skilled employees without retraining and upskilling possibilities (Stark *et al.*, 2021). The digital divide has increased socioeconomic inequities by widening economic opportunities. AI-powered hiring and loan approval algorithms have also been accused of bias and discrimination. These prejudices can exacerbate social inequality and limit opportunities for vulnerable groups. Ethical concerns, openness, and responsible AI deployment can offset these adverse effects and ensure AI promotes social mobility and economic opportunity for all.

### Analysis of AI's effect on education and skills development disparities

AI has benefited and hurt education and skills development. AI might improve learning and skill acquisition. AI-powered educational tools and platforms enable students to study at their speed and concentrate on areas where they need extra help. AI can evaluate massive volumes of educational data to uncover learning patterns and gaps, which informs curriculum creation and teaching tactics (Irving and Askill, 2019). AI's effect on education has drawbacks. Exacerbating educational and technological inequality is a big problem. AI-powered teaching tools are promising, but not all kids and schools have access. AI integration in education may accelerate the digital divide and perpetuate educational inequality in

economically disadvantaged communities and institutions. AI may also replace future workers. AI will make some occupations obsolete and create new ones that need other talents. This might cause a mismatch between the abilities taught in conventional educational settings and those required in the labour market, further dividing skills development and employability. Policymakers and educators must emphasize equal access to technology and AI-powered educational resources to solve AI-related education and skills gaps. Bridge the digital gap so all kids can benefit from new technology. Critical thinking, problem-solving, creativity, and emotional intelligence are less likely to be automated and valued in a technology-driven environment.

### Exploration of AI's implications for privacy and data protection rights

AI's fast development poses serious privacy and data protection consequences, necessitating rigorous research and regulation. AI systems are gaining access to massive quantities of personal data, prompting worries about how they acquire, analyze, and use it (Jobin *et al.*, 2019). AI technology must protect privacy and data. AI applications in targeted advertising, face recognition, and healthcare must balance technical progress and privacy (CSPS, 2021)—AI-powered data collecting and analytics present confidentiality and consent issues. Large datasets help AI systems perform better, but they may disclose sensitive data without authorization. Effective privacy legislation is needed to protect personal data and give people more control. As AI algorithms get more complicated, the risk of data breaches and illegal access increases, making strong privacy protections essential. Algorithmic prejudice and discrimination in AI decision-making should also be examined (Jaton, 2021). Historical data may include hidden biases or reflect social preconceptions when training AI systems. Thus, AI-powered judgments might reinforce prejudice, disproportionately affecting disadvantaged groups (Zajko, 2022). Addressing this problem requires ensuring AI technologies comply with data protection rules and fostering algorithmic decision-making fairness and openness. AI and data flows are worldwide, making harmonizing privacy and data protection laws difficult. International conventions and procedures are needed to protect human rights when AI crosses boundaries. Governments, organizations, and industry stakeholders must work together to create privacy-protecting regulations that promote innovation and technology.

## CASE STUDIES

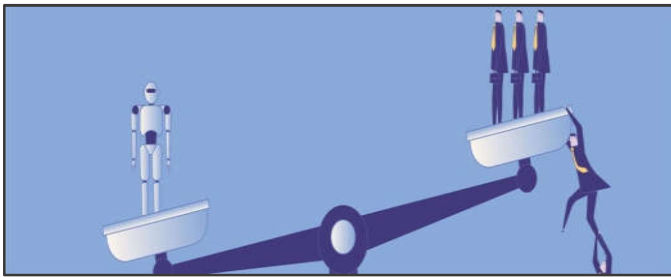
### In-depth analysis of select countries or regions showcasing social dynamics and inequalities of AI

AI, algorithms, and automation in US job decision-making have presented benefits and concerns. These technologies offer more effective and personalized decision-making, helping organizations and increasing production. However, AI-based systems may cause inadvertent prejudice and discrimination, especially for underprivileged groups, as shown in Figure 4 below. Due to these hazards, New York City passed a rule mandating corporations to undergo independent bias audits of their "automated employment decision tools" (AEDTs) and publicize the findings. This reflects a societal emphasis on bias elimination and justice in AI-driven decision-making. USA AI societal dynamics and disparities are complex (Zajko, 2022). On one side, firms and people with access to powerful AI technology have benefited, increasing wealth concentration and economic inequality. AI-driven advances in banking and technology have mostly benefited privileged people,



while underprivileged areas have lost jobs and services (Resolution Economics LLC., 2023).

AI algorithms deployed in essential sectors like criminal justice and jobs have shown prejudice towards racial and ethnic minority groups, worsening societal inequalities and perpetuating discrimination. New York City's AEDT ordinance mandating bias audits helps uncover and mitigate AI-based workplace prejudices (Christin, 2020). This rule promotes job market fairness by requiring independent audits. Resolution Economics' Bias Audit Team conducts extensive audits of the AI tool's deployment to identify any biases. These audits assure bias-free, ethical AI technologies from pre-implementation analysis through post-implementation data review. These strategies address social dynamics and inequities related to AI adoption in the US by maximizing AI's advantages and limiting its drawbacks, especially in historically oppressed populations.



**Figure 4: Robots enhancing inequality in American job space**

AI adoption in Africa creates unique societal dynamics and disparities that might define the continent's future. AI may improve many industries but exacerbate inequality and introduce new issues for underprivileged people (Zajko, 2022). The digital divide is an issue; AI adoption is lower in rural places due to poor internet and technology access; more areas cannot fully benefit from AI-driven services like online education platforms and e-commerce. This digital gap promotes social and economic disparities, limiting AI's ability to help neglected communities. Africa has AI gender discrepancies; Women are underrepresented in AI education and employment. Gender-based AI algorithms come from a limited representation of women in AI technology and solutions. To fix this, tech companies should encourage more women to work in AI and related fields (Christin, 2020). Additionally, AI has several effects on the African labour market. AI may boost productivity and generate new jobs but also threaten low-skilled jobs. Automation may reduce employment and increase economic inequality. Reskilling and upskilling programs are essential to prepare for AI-driven labour market shifts. For equitable economic growth, AI-driven industries that produce jobs must be developed (Eke *et al.*, 2023).

Additionally, AI development must overcome data bias and promote inclusivity. Biased data used to train AI systems may perpetuate past injustice and marginalize populations, resulting in unjust decision-making. Diverse data collecting and community involvement in AI development may assist in creating inclusive and ethical AI systems.

#### **Comparison of case studies to identify commonalities and differences.**

AI might change society in the US and Africa. Both areas worry about biased AI algorithms discriminating against disadvantaged and historically persecuted communities. New York City's bias audits of automated job decision tools demonstrate the US's focus on eradicating prejudice and advancing justice in AI-driven decision-making (Christin, 2020). In Africa, there is a rising awareness of the need to eliminate biases in AI systems to achieve fair and equitable

results, particularly in gender-disparate fields like AI education and employment. The digital divide is another concern; Rural and impoverished communities in the US and Africa have the most significant difficulty accessing AI-driven services and technology (Elliott, 2019). These places' poor internet connection and technology access restrict AI's advantages, worsening social and economic inequality. AI may empower neglected groups and foster inclusive development by closing the digital divide.

Both case studies worry about AI's labour market implications; AI may boost productivity and create new employment, but automation might eliminate low-skilled positions, increasing economic inequality. Reskilling and upskilling initiatives are crucial to prepare the workforce for AI-driven labour market transitions and promote fair economic development. Additionally, AI adoption and social dynamics vary between the US and Africa. In the US, AI-driven banking and technological breakthroughs have benefitted the wealthy, while poor communities have lost jobs and services. Africa must address gender disparities in AI education and employment. To reduce gender bias in AI algorithms, more women should work in AI and related domains (Christin, 2020). The USA has addressed AI biases via rules and independent audits. In contrast, Africa studies how varied data collecting and community engagement in AI development might produce inclusive and ethical AI systems. Both case studies emphasize the need to address prejudices, encourage inclusion, and minimize the negative consequences of AI to build more equal and just societies. At the same time, they confront different problems depending on their settings and AI adoption levels.

## **DISCUSSION AND CONCLUSION**

### **Summary of key findings**

Several significant conclusions emerged from the research on AI's global social dynamics and inequities. First, AI adoption affects economic development, jobs, and access to critical services in good and bad ways. However, AI adoption increases inequities, particularly in financial gaps and access to technology and education. According to the study, AI adoption and investment varied by location and country (Burrell and Fourcade, 2021). Wealthy countries like the US and China lead AI research and development, leaving LMICs behind. This technical divide might exacerbate global inequality. Biases in training data may cause AI algorithms and systems to discriminate and perpetuate inequality. This AI prejudice affects several socio-economic groups in employment, criminal justice, and financial services.

### **Interpretation of results about existing literature**

The results support prior fears that AI might worsen socio-economic inequality. The study's validation of the digital divide's impact on AI adoption and its consequences for social inequality supports earlier research, highlighting the need to address technology access gaps. AI's incorporation into numerous industries highlights the need to address the digital divide, which has persisted for years. The study's finding of biases in AI algorithms and their effects on social groups is consistent with past studies on algorithmic fairness and the need to mitigate biased decision-making processes. Biases in AI systems have been widely examined, and the study's results emphasize the need to address and eliminate these biases to maintain justice and avoid prejudice (Irving and Askill, 2019). The study's Examination of AI's effects on income inequality and wealth concentration is consistent with earlier research highlighting worries about AI-driven automation worsening economic inequities. Job displacement and the engagement of AI-related advantages within select persons or

organizations have been recurrent issues in the literature. The study's investigation of AI's impact on education and skills development inequities supports past research emphasizing the need for equitable AI education and training (Burrell and Fourcade, 2021). Existing research highlights the significance of reskilling and upskilling programs to prepare people for AI-driven job market shifts.

The study's interpretation of the data concerning current research improves our knowledge of AI's social dynamics and disparities. It adds to the expanding body of knowledge that highlights the need for responsible AI development, inclusive policies, and collaborative efforts to harness AI's potential for the benefit of everyone (Elliott, 2019). The coherence with current literature underscores politicians, corporate leaders, and society need to handle AI's problems and benefits responsibly and equitably.

### C. Implications of the study for policymakers, industry, and society

The research has several ramifications for politicians, business, and society. Policies should encourage inclusive AI usage and address AI biases. They should also invest in education and skills development to bridge the digital gap and guarantee that everyone can benefit from AI-driven possibilities. The paper stresses the need for fair and accountable ethical AI systems for the sector. Companies should deliberately diversify their AI development teams to prevent biased algorithms and encourage inclusion. Society must push for ethical AI development and identify AI's possible effects on social dynamics and inequities (Esmark, 2017). Public awareness efforts concerning AI's effects and ethical AI usage are needed.

### Recommendations for addressing and minimizing AI-related social dynamics and inequalities.

Policymakers should emphasize AI education and digital infrastructure to bridge the digital gap and solve AI-related social dynamics and inequality. Fairness and transparency in AI systems need ethical principles and rules. Comprehensive AI policies encouraging equal access to AI technology and opportunities need government, corporate, and academic collaboration. Companies and AI developers must also promote team diversity and undertake frequent bias audits to discover and reduce AI system biases (Issar and Aneesh, 2022). Responsible AI development and deployment should underpin AI activities to reduce social inequality.

### Limitations of the study

Secondary data may restrict the study's depth and breadth as part of the limitations. AI continuously changes; therefore, additional advancements may have happened after the study's data cut-off date (Irving and Askell, 2019). The research may only cover select places and not represent worldwide AI-related social dynamics and inequality.

### Suggestions for future research in the field.

Longitudinal studies should be conducted to assess the long-term effects of AI adoption on social dynamics and inequality. AI adoption and its consequences on specific areas and populations may be studied in detail. Interdisciplinary studies on AI's societal effects may provide a complete picture (Issar and Aneesh, 2022). Qualitative research approaches like interviews, and focus groups may also capture human opinions and experiences relating to AI's social dynamics and inequality.

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