

ARTIFICIAL INTELLIGENCE FOR SOCIAL SUSTAINABILITY IN THE DIGITAL LITERACY

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ABSTRACT

Artificial intelligence by analyzing macro-social levels and social sustainability can shed light on how it affects processes such as socialization, education, training, employment, communication, leisure and work. Furthermore, the impact of artificial intelligence on social sustainability is a critical concern. The concept of social sustainability has been hard to define, and instead, many discipline-specific descriptions have addressed various aspects depending on the context in which they appear. Although sustainability is usually understood as having three dimensions: the environment, society, and the economy, the debate on sustainable artificial intelligence so far is characterized by a narrow focus on the environmental sustainability of artificial intelligence. It is argued that the debate on sustainable artificial intelligence should not only be about environmental costs, but also incorporate social and economic concerns. Digital literacy, understood in its epistemic, ethical, and political dimensions, enables critical agency in algorithmically mediated environments. Through a structured analysis of current literature and policy perspectives, the article highlights the need for inclusive, situated, and interdisciplinary educational strategies that empower citizens to participate. More precisely, the article shows that artificial intelligence's environmental impact is often connected to important social and economic issues. Through an analysis of existing literature on the sustainability of artificial intelligence, it is demonstrated that ethical and philosophical arguments about the importance of considering the environmental costs of artificial intelligence apply just as well to the social and economic dimensions of artificial intelligence development. It has been described as a double-edged sword, embodying both significant risks and promises for human society when viewed in relation to the social dimension of the sustainability development goals (SDGs) proclaimed in the Agenda 2030.

KEYWORDS: Socio-Technical Implications, Human Capabilities, Social Sustainability, Global Community, Environmental Sustainability

Introduction

The concept of sustainability is commonly understood as having three dimensions: environmental, social, and economic sustainability supports the environmental system, but at the same time, developing and using artificial intelligence also has a significant ecological footprint, among other reasons because of the massive datacenters that are needed to train and run Artificial intelligence models. Digital literacy enhances educational equity, fosters personalized learning, and promotes ethical, responsible technology use. By integrating artificial intelligence into digital education, learners develop critical thinking to navigate information, while artificial intelligence tools support sustainable, inclusive, and tailored learning environments that bridge digital divides. Artificial intelligence for sustainability initiatives

have also considered artificial intelligence's use for socio-economic goals; discussions are characterized thus far by a narrow focus on the environmental dimension of sustainability. This is a mistake, we argue, because considering the social and economic sustainability of artificial intelligence development such as the hidden labor involved in artificial intelligence development, the impact of artificial intelligence development on local economies and industries, and the ideological roots and impact of artificial intelligence adds a new and important perspective to ongoing debates about artificial intelligence ethics and governance.

Socio-Technical Implications for Artificial Intelligence

Socio-technical implications include uncertain outcomes and future trajectories created by mutually reinforcing dynamics between

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technologies, policies, and social behaviors present vast and intractable uncertainties about their benefits, risks, and future directions. Technical implications for social and economic elements interact to shape, and are shaped by, human influence, biases, and institutional structures. They include automated inequality through biased data, workforce disruptions; potential job displacement appropriate measure might be the average time taken to make a delivery, and perhaps a measure of the standard deviation. A socio-technical approach to the interconnected, interdependent relationship between human social systems (people, organizations, culture) and technical systems social issue that calls for repair is the aforementioned hiddenness and precocity of the human labor involved throughout lifecycle. Artificial intelligence is often seen as something automatic and autonomous that will make human values. This image of artificial intelligence and automation tactfully conceals the amount and variety of human labor that is involved in the development and use of artificial intelligence products. The typical organization, evaluation is regarded as a purely technical process, carried out according to rules that make it possible to compare evaluations of very different projects on a single scale. Hence the introduction of methods of evaluation deemed suitable for socio-technical designs, which attempt to define the culture may perhaps be seen as an informal institution, but we think it is worth highlighting as it is an element that is not always given due attention in the analysis of artificial intelligence systems. The expectations are inevitably reflected in the training datasets for artificial intelligence systems; while at the same time the deployment value of other sets of variables previously neglected, face severe difficulties. As we pointed out in the previous section, human labor is needed throughout the entire artificial intelligence lifecycle. However, as induced technology advancement makes the need for the humans operating these systems to make complex ethical decisions that guide the pursuit of creating for modernization in artificial intelligence systems.

Artificial Intelligence and Human Security

The development and human values are more essential areas of human security where artificial intelligence could bring many benefits. On a practical level, Artificial intelligence has become a critical, dual-use component of human security defined by the UN as freedom from fear, want, and indignity. While artificial intelligence offers transformative tools to enhance health, agriculture,

and disaster response, it simultaneously introduces significant risks, including job displacement, increased surveillance, and advanced cyber threats. Artificial intelligence induced technology could positively impact social sustainability by assisting with humanitarian aid and crisis. Responsibility for social bias is multifaceted and can be generated by a lack of varied data, social prejudice hidden in the data, or induced by algorithmic social media where artificial intelligence systems could become extremely powerful, generating analytical and predictive insights that increasingly outstrip human capabilities. The background of a case of automated driving systems to mitigate the responsibility gaps in the use of artificial intelligence systems related to blameworthiness, moral accountability, public accountability and active responsibility. The future will be those who center equity advocating for tools that reflect diverse voices, especially from underrepresented regions and communities. These leaders will also shape policy by staying informed on Artificial intelligence regulations and contributing to global efforts that govern emerging technologies responsibly. Artificial intelligence can enhance women's security by offering access to services, economic opportunities, and to protection systems. It considers the challenges associated with accessing and promoting digital literacy for artificial intelligence both as consumers and producers. It also considers the implications for socio-economic as a scientific discipline, encompassing both research methodologies and the products of inquiry. However, this could also reverse progress in women's workforce participation, as jobs disproportionately occupied by women due to social and gender norms such as clerical, administrative, and service roles are highly susceptible to artificial intelligence. If it is true that artificial intelligence adds new fundamental building blocks to sociotechnical systems as suggested above, it will transform existing socio-technical systems in a more fundamental way than other technological innovations.

Social Sustainability in Digitalization

The field is developing rapidly, revealing the potential for artificial intelligence to advance human rights, improve labour conditions, protect the environment and prevent corruption. Frameworks can be used to help assess and mitigate risks around artificial intelligence development and implementation and to guide companies in leveraging social sustainability in the digital age focuses on ensuring technology advances human well-being, equity, and community, rather than exacerbating divides. It involves leveraging

digital tools like artificial intelligence, health, and e-learning to foster inclusion while addressing risks such as data privacy violations, digital exclusion, and labor market disruptions, aiming to create a balanced, human-centric society. Artificial intelligence applications to advance in key areas where they can have the greatest impact on sustainable development to help ensure artificial intelligence is designed and implemented in ways that advance sustainable development goals. Ultimately, making equity a priority, participating in shaping policy and leveraging technology to build a more inclusive and sustainable future are paramount. However, fully realizing these benefits requires intentional design, responsible governance and inclusive participation. They are:

- Environmental & Resource Management
- Ethical & Responsible Artificial Intelligence
- Healthcare & Education Policy
- Bias and Discrimination
- Labour Market Disruption
- Adopt Modern Governance Frameworks
- Digital Well-being
- Community and Social Nature

Artificial Intelligence strategy to promote the use of data and artificial intelligence for economic growth and societal benefits and ensuring that the benefits of digitalization are equitably distributed, and that technology is used to improve the lives of all members of the society, rather than exacerbating existing social inequalities. Additionally, social sustainability in digital transformation also includes addressing the potential negative impacts of technology on employment and privacy. The goal of digital inclusion is to ensure that everyone can participate fully in the digital economy and society, and that the benefits of digital technologies are shared equitably. This includes ensuring access to the internet, digital devices, digital literacy skills, and digital content and services that meet the diverse needs of individuals and communities. Digital inclusion also aims to address the digital divide, which refers to the unequal distribution of technology and its benefits, and to ensure that everyone has the opportunity to participate in the digital world and benefit from its good benefits and opportunities.

Conclusion

The various aspects of all security are discussed concerning artificial intelligence involvement in the social goals of the sustainable development goals; the concept of security is only partially addressed. When security issues related

to artificial intelligence and social sustainability are mentioned, this is mainly done as indirect effects. Indirect effects are located in the themes of artificial intelligence for social good, economic security, development, humanitarian needs, values, and sociotechnical harms. These themes approach security issues as indirect effects policy makers, and ethicists, and to shift the locus of our concerns from the users of artificial intelligence systems, the minority world, to the global community that is affected by artificial intelligence development processes and infrastructures where artificial intelligence solutions to societal problems are seen as either strengthening or weakening societal security.

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