

AI for Sustainable Development: Fostering Financial Inclusion in Developing Countries for Accomplishing the UN's SDGs

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ABSTRACT

The potential of AI resides in its capacity to leverage data, streamline processes, and ignite innovation, making it an essential foundation in pursuit of global advancement. With the intersection of innovation and financial sustainability, there is a growing need to take action to progress towards a future characterised by adaptability, environmental consciousness, and collective prosperity to foster financial inclusion and achieve various UN SDGs by 2030. The article tries to explain the intersection of AI and financial inclusion, starting with an overview of the UN Sustainable Development Goals and the significance of financial inclusion in achieving the SDGs. Next, it highlights the role of AI technologies across industries in promoting financial inclusion. Finally, the article provides some policy implications and recommendations for future research prospects in this area, emphasising the significant impact of AI in promoting financial inclusion and accelerating progress towards the attainment of the United Nations SDGs in developing nations.

I. INTRODUCTION

Artificial Intelligence (AI) is a powerful force that can have the potential to drive sustainable development, particularly in developing nations, during this era of fast technological advancements. Incorporating AI into financial systems presents exceptional prospects for promoting financial inclusion, a pivotal element in attaining the SDGs. The SDG progress report for 2024 indicates that only 17% of the targets set for the SDGs are on course to be achieved. Nearly half of the targets show low or moderate development, while work on over a third has halted or deteriorated (United Nations, 2024). Machine

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learning algorithms are transforming risk assessment, credit scoring, and fraud detection, while natural language processing is improving market analysis and customer service (Elias et al., 2024). In the banking industry, computer vision technology is improving security protocols and streamlining processes (Elias et al., 2024).

Financial inclusion is seen as a catalyst for 7 of the 17 Sustainable Development Goals (WBG, 2022; Adjasi et al., 2023). The 7 SDGs aim to eliminate poverty (SDG1), eradicate deprivation (SDG2), advance health and well-being (SDG3) (Yap et al., 2023), empower women economically and achieve gender equality (SDG5), promote economic progress and decent employment (SDG8), support industry, infrastructure, and innovation (SDG9), and reduce inequality (SDG10) (Yap et al., 2023). AI is driving a rapid revolution in the financial industry, presenting a significant opportunity to enhance financial inclusion in emerging nations (Joia & Cordeiro, 2021). Despite the recent improvements in the financial system, there are still significant concerns regarding the problems in achieving full financial inclusion (Huang et al., 2021). Most of the persons who cannot reach to the financial services live in developing nations (Girón et al., 2021). It denotes to accessible and affordable financial services for persons previously left out of the financial system. The equitable distribution of wealth within a society is closely linked to financial inclusion so it plays a middle part in endorsing economic empowerment and sustainable development at the same time (Yap et al., 2023). Even after notable changes, many individuals in emerging nations continue to be marginalised and left behind by established financial systems, hindering their capacity to enhance their economic condition and improve their overall well-being.

Marginalised segments of society are at a greater risk of being left out of from the system as there is a higher level of financial deprivation in rural areas. Various studies have indicated that lack of financial inclusion results in social exclusion and, subsequently, hinders the overall progress and advancement of society. The Global Risks Report 2023 predicts that the upcoming decade will be marked by environmental and societal catastrophes, which will be influenced by underlying geopolitical and economic trends (World Economic Forum, 2023). The COVID-19 pandemic emerged unexpectedly, leading governments across to implement lockdowns to curtail the transmission of the virus. The requirements for social distancing and isolation (Mhlanga, 2022) initially forced millions to adopt digital banking solutions. A significant number of individuals commenced utilising e-commerce, online teaching, and various services, igniting curiosity in digital financial instruments (Mhlanga, 2022). The epidemic catalysed a digital revolution in the banking segment, enhancing opportunities for financial inclusion (Mhlanga, 2022).

The various financial services encompass access to savings, loans, insurance, payment systems, and remittance (Iqbal & Sami, 2017) options provided by the formal financial sector. This facet of financial inclusion is central for ensuring economic stability for individuals and families (Kelkar, 2008). Facilitating or accepting digital payments is a significant function of an account. Saving constitutes another aspect. However, a limited number of individuals informed utilising their accounts solely for savings without engaging in digital payments (Mhlanga, 2024), either for sending or receiving, in the last year. In India, the proportion was 7%. In numerous emerging economies, individuals predominantly depend on income from employment or assistance from friends and family as their primary source of emergency finances. In China, Tanzania, and Indonesia (Mhlanga, 2024), earnings from employment were predominantly identified as the primary source of cash, but in India, Egypt, and Brazil, (Demirgüç-Kunt, et al., 2018) familial or social networks were reported as the principal source (Mhlanga, 2024).

Financial services have a crucial role in promoting development of a country. They assist individuals in breaking free from poverty by promoting investments in their well-being, education, and entrepreneurial endeavours. Furthermore, they facilitate the management of financial crises, such as unemployment

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