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Digital Transformation and Global Inequality: A Challenge for Sustainable Development

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ABSTRACT

Digital transformation is the main medium of 21st century economic progress and innovation. But it is not equally distributed around the world. This report seeks to investigate the effects of the rapid technological development, such as digital infrastructure, AI and internet, in further exacerbating the existing divide between global north and global south. The advancement in digital technology can contribute to enhancing the economic development and the field of education and better governance. But lack of access to internet and digital literacy continues to limit many communities, especially in Global South. The study is an analysis of the influence of the digital divide on the achievement of the United Nations Sustainable Development Goals (SDGs), particularly in the SDG fields of quality education, economic growth and reduced inequalities. It looks at structural obstacles to equal access to digital technologies such as weak infrastructure, lack of digital skills and economic gaps. Governments, international organisations and other stakeholders in tackling these issues are also explored. It states that access to digital technologies needs to be improved to bridge the divide between the Global North and the South, and to contribute to global sustainability development. This study employs a qualitative research approach with secondary data analysis to explore the correlation between digital transformation and inequality in the world of sustainable development.

Keywords: *Digital Transformation, Global Inequality, Digital Divide, Sustainable Development Goals (SDGs), Economic Development, Digital Literacy, Inclusive Growth, Technology and Development.*

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Introduction

Digital transformation is one of the most powerful drivers of the current economic, governance and social dynamics in the international arena. Digital transformation is the adoption of digital technologies across all parts of human life, including innovations like artificial intelligence, big data analytics, cloud computing and the ubiquity of the internet. These technologies have revolutionized the way economies work, governments provide services, and people communicate and access information. For this reason, digital transformation is becoming a key factor in growth, efficiency, and innovation in developed and developing nations (Gilberto Santos, 2022)

Concurrently, the SDGs adopted by the United Nations as part of the Sustainable Development agenda have put technology at the heart of solutions to global problems. Digital tools can make progress quicker in various important fields, like poverty alleviation, quality education, access to health care, environmental protection, and inclusive economic growth. Examples of digital platforms delivering access to financial services, e-learning reaching remote populations and data-driven technology enhancing governance and policy implementation. Digital transformation, in this regard, is a strong enabler to reach inclusive and sustainable development goals (Hulsegge, 2026).

Yet, the effect of digital transformation is not uniform, and the benefits are not distributed equally by region, or by population. There remains a substantial divide between technologically advanced countries and countries that don't have the necessary infrastructure, resources, or institutional capacity to advance and effectively use digital technologies. This difference, known as the “digital divide,” is attributed to differences in access to the Internet, digital literacy, cost, and technological innovation. Even within countries, marginalised groups such as rural communities, females and low-income groups are often more likely to find it difficult to gain access to the digital world and thus contribute to higher social and economic inequalities (Chelovechkova, 2021). Additionally, digital transformation can create new avenues for inequality. The centralization of technology and

information into the hands of a few multinational corporations and advanced economies is a cause of concern due to economic dependency, market domination and wealth differences. Whilst boosting productivity, automation and artificial intelligence can also contribute to job displacement and income polarization if appropriate policies are not put in place. This means digital transformation is not only development enabler but also can exacerbate current structural inequalities and pose new hurdles for achieving equitable development.

This report aims at exploring this intricate relationship by examining the effects of digital transformation on global inequality, and how those changes impact the realization of the goals of sustainable development. It asserts that unless inclusive policies, strategic investments and international co-operation are in place, digital transformation could be a possible obstacle to sustainable development. The digital divide and equitable access to technology is therefore technically not only a challenge, but a prerequisite for the realization of social and economic justice in the world.

Research Methodology

The study approach used is the qualitative approach and the type of research used is descriptive analytical research which is the process of collecting data and visualizing the data: When talking about “digital transformation” , “global inequality” , “digital literacy” and “sustainable development”, the basis of the study stemmed from the process. Collected data are all secondary data from peer-reviewed journals published in between 2020 and 2025 as well as data from different international institutions such as the United Nations, World Bank, International Telecommunication Union, UNESCO and OECD. Activity: Literature search and analyses were carried out on activity around the digital divide, digital literacy and employment and income inequality pertaining to the sustainable development goals (SDGs). Thematic analysis was used to analyse the data obtained whereby key patterns, trends and relationships between the variables explored in the data was identified. This methodology was deemed to be suitable as it can offer a holistic assessment of the implications of unequal access to digital technologies on

socioeconomic development and thus global inequality.

Literature Review

Digital transformation is emerging as a critical enabler for economies and societies globally. Digital technologies such as digital platforms, artificial intelligence, cloud computing and internet connectivity are changing the way societies communicate, learn, and do business. Recent research indicates however, that the advantages of digital transformation are by no means evenly distributed, with substantial differences between developed and developing nations (Marino-Romero, 2024).

The digital divide is one of the most critical challenges of a digital transformation. The digital divide can be defined as the digital gap in the access to internet services, digital devices, and technological skills. A systematic review by (Tewathia, 2022), suggests that the inequities in access to digital technologies are still perpetuating the inequalities that already exist in society, especially in developing countries and developing regions. Many people don't have access to the digital economy due to limited infrastructure, affordability concerns, and, of course, a lack of digital skills.

Recent studies have revealed that inequities in access to information technology are a direct cause of inequality between rich and poor countries. The authors of the study conducted by (Asongu, 2024), revealed that there is strong correlation between information technology and human capital formation and economic development in developing nations. There is a clear correlation between the level of access to digital technologies and level of productivity, educational results, and economic opportunity among countries with different levels of technological resources.

Digital literacy is also identified as one of the key factors that affect employment and earning opportunities. Digital skills are more and more needed in a few sectors in today's labour market. Research has shown that those who have digital competence are more likely to find employment and have a higher income. In low and middle-income countries, research has shown that the digital divide persists, restricting access to opportunities for young people and

disenfranchised communities, such as women and rural people.

In recent years, there has been increasing focus on the connection between the digital transformation and sustainable development. Digital technologies can help achieve SDGs through enhancing access to education, health care and financial services, and public administration. The digital divide is, however, persistent, which raises obstacles for inclusive development. While digitalisation plays a vital role in meeting the SDGs of socio-economic dimension, it requires equitable access to digital resources and infrastructure for its benefits to be realised ((Abbas, 2024).

Furthermore, recent research confirms that the digital transformation process can help achieve sustainable development only in the presence of inclusive policies and investments in digital infrastructure. E-governance, digital education and broadband connectivity have been recognised as key enablers to speed up SDG progress. However, access remains unequal, and this is still hampering development in many emerging economies.

Overall, the literature shows that although digital transformation has great potential for economic and social growth, inequalities in the access to and mastery of digital tools remain. As a result, combating the digital divide continues to be an important task to foster inclusive growth and sustainable development. (Nations., 2023)

Discussion and Analysis

Internet and Technology Inequality and its Impact On Global Inequality

The disparities between countries in terms of internet access and technology resources are one of the biggest challenges to digital transformation. In general, the digital infrastructure is well-developed in developed countries, and the penetration of the Internet and the availability of new technologies is quite high; many developing countries, however, still suffer from weak connectivity, low rates of investment in technologies and in the Internet. This gap leads to unequal opportunities for education, innovation, business development, and involvement in the digital economy. (Selwyn, 2021)

The latest studies suggest that countries with improved digital infrastructure are more likely to

enjoy higher rates of economic growth and productivity, which is attributed to the advantage of businesses and individuals in accessing information, markets, and services. In contrast countries, where there is limited technological access, tend to be less competitive in the global economy. This has left the world with a growing income inequality between developed countries and developing countries. Hence, unequal access to internet and technology will only exacerbate inequalities and limit development opportunities in less developed areas.

The Job and Income Impact of Digital Literacy in Developing Countries

The economic landscape is now a technologically driven one and digital literacy is a necessary expected skill. It means having the ability to use, comprehend, assess, and act effectively with digital technologies. Those who have high digital competence are more likely to find job opportunities, to adjust to technological changes and to earn more.

Digital literacy is a key factor in enhancing employability and economic engagement in developing countries. Employees who are competent in digital skills will have access to online job platforms, telework and technology-related jobs. Conversely, people without digital skills may struggle in today's job market, resulting in reduced employment opportunities or earning less.

Moreover, digital literacy is a major driver of entrepreneurship as it allows people to carry out ecommerce, digital marketing, and online business. Thus, building digital literacy would impact on the income generation, poverty alleviation and economic development. The results indicate that investments in digital education and skills development are crucial to developing inclusive employment opportunities in developing countries. (OECD, 2024).

Discussing the Digital Divide and its Effects On the Sustainable Development Goals (SDGs)

The digital divide is one of the significant barriers to the Sustainable Development Goals (SDGs). Digital technologies can be used to promote sustainable development via access to education, health, financial services, and public information. But where these technologies are not equally

accessible, many communities miss out on these opportunities.

Access to internet is, for instance, constrained in some areas, which can limit internet access for online education, impacting SDG 4 (Norris, 2001). Likewise, poor digital infrastructure can prevent access to telemedicine and digital health services, stalling progress towards SDG 3 (Good Health and Well-Being). The digital divide is also impacting SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities), with a negative effect on disadvantaged populations' economic opportunities.

The analysis shows how the exclusion from digital world is a barrier to social and economic development. Thus, the mitigation of the digital divide is crucial to draw the technological development towards sustainable and inclusive development instead of deepening inequalities.

Policies to Tackle Inequality Triggered by Digital Transformation

Digital transformation is driving inequalities and needs to be tackled through systemic and inclusive policies. Digital infrastructure investments should be made a top priority by governments to increase access to affordable, reliable Internet services, especially in rural and underserved areas. Enhancing connectivity can play a role in ensuring that greater numbers of people can access digital opportunities.

Another key policy action is to reinforce digital literacy through reforming education and training in IT. Providing people with digital skills can improve their employability and help them to be active players in the digital economy.

Governments should also support workforce development measures, such as reskilling and upskilling, to facilitate the adaptability of workers to technological developments. Inclusive economic growth can also be promoted by giving financial support and incentives to small businesses, as well as to digital entrepreneurs. (Ragnedda, 2018)

The international level requires cooperation between the governments and development organisations, as well as technology companies, to foster digital inclusion. A well-designed policy prioritizing accessibility, affordability, education, and technological innovation can have a profound

impact on minimising inequality and provide a more equitable distribution of the advantages of digital transformation in societies.

Limitations

While the study outlines a comprehensive analysis of digital transformation and global inequality, it does have several caveats. One is that the research is entirely secondary research, which is obtained from books, academical journals and international organization reports. The study does not employ primary research techniques (surveys or interviews) to fully reflect real-life experience and views of people who are directly impacted by digital inequality.

Secondly, digital transformation is a fast-changing area, and that means that you must keep up with the pace of change. The number of developments in artificial intelligence, automation, and digital technologies are ever-increasing, making it difficult to capture all the latest developments in one study. Some trends and findings may change over time with the ongoing development of technology.

Another constraint is that the research takes place a broad level of the developing countries instead of selecting a particular country, or area. Economic conditions and technological infrastructure, as well as educational systems differ across countries, therefore, so does the impact of digital transformation.

Moreover, the research mostly focuses on economic and social aspects of digital transformation. The limited scope of the research has not in-depth explored other important aspects such as cybersecurity, environmental impacts of technology, and concerns regarding data privacy.

Despite these shortcomings, the research provides important insights into the role of digital transformation in exacerbating global inequality and affecting sustainable development in the developing world.

Recommendations

- Governments need to prioritize investment in digital infrastructure to improve access to affordable, reliable, and high-speed Internet services, particularly in rural and underserved areas.
- Schools should increase their digital literacy

initiatives and ensure that digital skills are embedded in the curriculum to equip people with the digital skills needed for today's working life.

- Policymakers must plan reskilling and upskilling strategies for workers to ensure that they are able to adjust to technological developments and shifting job needs.
- An attempt should be made to narrow the affordability gap by making digital devices and internet accessible to low-income families.
- The governments should create digital policies that would promote equality of opportunity for all people irrespective of their socioeconomic status.
- International organizations and development agencies should help in the form of financial aid, technology transfer and knowledge sharing to the developing countries.
- It is important that digital access and innovation should be encouraged through public-private partnerships in developing countries.
- Ethical and regulatory mechanisms must be developed to make sure that digital technologies are used responsibly and to prevent people falling into digital in/exclusion and inequality.

Conclusion

The digital transformation has become one of the most powerful factors of economic, social and technological growth in the twenty-first century. The proliferation of the Internet, digital platforms and new technologies has opened the door to new opportunities in the areas of innovation, productivity, communication and economic growth. While the many advantages of digital transformation have emerged, it has also exposed and increased inequalities between developed and developing nations in many instances. This study explored the connection between digital transformation and global inequality, specifically the unequal access to technology, digital literacy, digital divide, and sustainable development.

The study's results show that inequities in access to internet services and digital technologies continue to be a significant driver of inequality all over the world. Advanced digital infrastructure, higher investments in technology and connectivity

in developed countries continues to provide an advantage for these countries, while many developing countries struggle with low levels of internet access, limited connectivity, and lack of access to suitable infrastructure. This means that developing nations may not be able to fully engage in the global digital economy, thereby exacerbating inequalities between rich and poor countries.

Digital literacy is also found to be of vital importance for employment and income. With the constant advances in technology, people with high digital skill levels have a better chance of being better equipped to find a job, embrace technology, and have greater access to higher learning opportunities. On the other hand, low levels of digital literacy limit access to modern labour markets and impede economic mobility, especially in developing countries. For this reason, digital skills are now an integral part of every individual's success and the development of a nation.

Moreover, the study shows a very high impact of the digital divide on the realization of the United Nations Sustainable Development Goals (SDGs). Access to digital resources is not equal and this impacts progress in several areas including quality education, decent work, economic growth and reduced inequalities. Many communities will not be able to reap the benefits of technological development and enhanced quality of life without

addressing digital exclusion, which will hinder their ability to achieve sustainable development.

The analysis also highlights the need for policy interventions to mitigate inequalities from the digital transformation. Increasing digital skills, digital inclusivity, and access to digital technology, and making investments in digital infrastructure, as well as training people and youth, can help better share benefits of digitalization. Finally, cooperation between governments, educational institutions, international organizations, and the private sector is crucial for fostering digital inclusion and contributing to sustainable development. In conclusion, digital transformation should not be viewed solely as a technological phenomenon but also as a social and developmental issue. While digital technologies have the potential to accelerate economic growth and improve living standards, their benefits can only be fully realized when access to technology and digital opportunities is inclusive and equitable. Therefore, reducing the digital divide and strengthening digital capabilities should remain a priority for policymakers and development practitioners. By adopting inclusive digital policies and investing in human capital, countries can ensure that digital transformation contributes to reducing inequality and advancing sustainable development rather than deepening existing disparities.

Conflict of Interest

The authors showed no conflict of interest.

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