

Bridging the Digital Divide: “Improving Information, Communication, and Technology (ICT) in Zimbabwe to Spur Economic Development.”

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Abstract

The information, communication, and technology (ICT) are two interconnected topics that are crucial in today's digital age. In today's world ICT has become an essential tool for communication, education, and economic growth. Access to the internet has become a basic human right, with more than half of the world's population using it, and infrastructure development is critical for providing this access, particularly in Africa. In today's modern world, the internet is a vital tool for communication, education, and economic growth. This paper explores internet access and infrastructure development in Africa, to identify the impacts, challenges, and solutions for improving access. An extensive literature review is done which will assist in identifying and addressing key issues related to internet access and infrastructure development, as well as providing insights into how to maximize the benefits of these technologies for individuals and communities.

Keywords

Technology, information, sustainable, development.

Introduction

The information, communication, and technology (ICT) sector has the potential to drive inclusive growth in Africa, but limited investment in this sector has restricted its ability to do so. Digital divide refers to the gap between those who have access to digital technologies and those who do not. The digital divide represents the disparity between people or groups who can utilize digital technologies like computers and the internet, and those who lack access or experience difficulties in using them. According to (Vanessa et al. 2019), bridging the digital gap aims to encourage fair and balanced access to digital technology and the internet, especially for people who are disadvantaged or neglected. This divide can emerge in numerous forms, including inequality in internet access, computer ownership, and digital literacy.

Modern telecommunications infrastructure is important for economic development and competitiveness. To fill this gap in literature (David 2019) states that infrastructure development is extremely vital for emerging economies like Zimbabwe, since it not only promotes local economic growth, but also defines their capacity to engage in global markets and attract both domestic and international investments for sustainable development. This article will explore

the potential benefits of improving ICT in Zimbabwe and examine some of the strategies and initiatives that could be implemented to achieve this goal.

Zimbabwe, like many developing countries, faces significant challenges in promoting economic growth and development. One key factor that has been identified as critical to overcoming these challenges is access to information, communication, and technology (ICT). According to (Makiwa & Steyn 2016) Zimbabwe can unlock new economic opportunities, improve productivity and efficiency, and boost innovation and entrepreneurship by enhancing access to and utilization of ICT, which is acknowledged as a significant component of economic growth and development. Numerous studies provide convincing evidence that ICT not only drives economic growth but also facilitates social transformation. To achieve sustainable development, an economy's effectiveness relies heavily on identifying and effectively utilizing ICT.

In Zimbabwe, many organizations do not have proper ICT systems in place to incorporate into their operations, which impedes their capacity to cut costs, increase performance, or improve customer relations. (Njanike 2019) states that the adoption of ICT in Zimbabwean economy is influenced by factors such as the availability of affordable and efficient broadband internet services. However, despite these challenges, companies in Zimbabwe can enhance their productivity, competitiveness, and overall business performance by successfully integrating ICT with appropriate support and guidance.

There is growing literature suggesting that investment in telecommunications infrastructure contributes to economic growth and sustainable development (Ward & Zheng 2016). Several emerging economies in Africa have not paid much attention to implementing ICT usage since obtaining independence despite the potential of this sector to reduce poverty and boost economic prosperity.

Developing economies in Africa for example Zimbabwe, are currently facing high levels of unemployment and the relevant authorities have since been failing to provide adequate ICT infrastructure and facilities to ensure efficient ICT integration with modern industrial development.

Objectives

- To explore the economic impacts of adopting ICT in Zimbabwe for sustainable development.
- To make recommendations on how to improve ICT integration in the country.

Research Question

What are the benefits of adopting ICT in Zimbabwe and promote economic development?

Recent research proves that many companies in Zimbabwe have lacked the drive to be relevant agents of economic development due to their inability to keep pace with technological advancements and apply ICT to achieve the goals and provide world class products and services for sustainable development. However, in a few small and developing countries, telecommunications is still a growing sector undergoing major reforms, to develop to a level where it can efficiently interlink industries and speed up production processes in a cost-effective manner. The article will explore the potential benefits of improving ICT development in Zimbabwe and examine some of the strategies and initiatives that could be implemented to achieve this goal.

Literature Review

ICT plays a vital role in all facets of the society. There is increasing literature examining the relationship between telecommunications, economic growth, and the research acknowledges a positive correlation between ICT and economic growth, particularly over an extended period. Nature of ICT in Africa has been questioned by (Akanbi 2013) stating that insufficient access to telecommunications services has delayed economic growth and development in developing countries. The African continent is no exception, as it suffers from low levels of infrastructure and telecommunications, insufficient power supply, and limited economic transformation. Another study proved that the adoption of ICT in healthcare is important for the socioeconomic development of a country and that telemedicine systems can improve healthcare in less-developed countries (Mengesha & Garfield 2019).

A lot of countries in Africa like Zimbabwe have not grasped the notion of ICT being a vital tool for efficient delivery of service and obtaining a competitive edge and the fact that the last decade has seen the country plunge into chronic poverty, economic instability and alarming levels of corruption has not helped (Diga et al. 2013).

A comparative study by (Moodley 2005) states that the South African government considers ICT as a significant tool for development, poverty reduction, and technological advancement. However, this view is often rigid and overoptimistic, promoting a deterministic model that views technology as an external force that can only be embraced or adapted, and this restricted ICT model for development has become prevalent and excludes various ideas. To conduct a more impartial study of ICT for development, we need to move beyond technological determinism and investigate different viewpoints on society and technology (Vanessa et al. 2019).

To fill this gap another recent study in the medical field eludes that ICT can improve access to essential services such as healthcare, education, and finance, especially in remote areas (Shao et al. 2022). There was a growing consensus between economic expansion scholars and development professionals regarding how ICT integration can play a critical role in stimulating economic growth and sustainable development in the USA (Lau & Tokutsu 1992). A key problem with this argument was conducted by (Datta, 2004) to examine the relationship between economic growth and ICT infrastructure over an extended period. The study utilized data from twenty-two countries and proves that there exists a considerable and favourable correlation between the two variables. Recent studies prove that most developing countries in Africa have showed a significant improvement in ICT adoption and usage however, despite these promising ICT benefits, some of the countries still have extremely low ICT Development Index scores.

Based on the above, existing literature has confirmed the important influence of ICT on the economy for sustainable development. The conclusion is that there is positive correlation between ICT adoption and economic growth. However, there are still some deficiencies in the topic to mention there is still no clear conclusion regarding the relationship between ICT and economic development

Methods

Systems thinking approach useful strategy for ICT adoption in Zimbabwe. Systems thinking is a way of looking at the world that emphasizes the interconnectedness of all things (Jokonya, 2016). It is a useful tool for strategizing and addressing complex problems such as the challenges of ICT integration in Zimbabwe. Applying the systems approach, several strategies can be implemented to effectively use ICT in Zimbabwe for sustainable development.

ICT Infrastructure Development:

Investing in ICT infrastructure, countries can improve their ability to connect to the global economy and increase their competitiveness in the digital age (Kayisire & Wei, 2016). One of the key problems in Zimbabwe's ICT sector is the lack of adequate and sufficient infrastructure. To effectively integrate ICT, the government must focus on establishing an efficient and cost-effective infrastructure to facilitate connectivity across the country. This involves investing in high-speed networks (Starlink), fiber-optic networks, mobile broadband, and other forms of infrastructure that allow data transfer.

Developing Appropriate Policies and Regulations by Government:

A bad or unsustainable environment or business ecosystem affects the efficiency and adoption of ICT in any country. Recent research by (Lee et al. 2016) proves that government policies affect ICT development. The research was done to analyse different government policies in USA, Japan, China, and South Korea. The government of Zimbabwe must establish policies and regulations that foster innovation and promote growth in ICT, while also creating a legal framework that safeguards intellectual property. The ICT working environment must be sustainable, and this must be supported in the policies.

Encouraging public-private partnerships:

A theoretical issue that has dominated the ICT field for many years is that partnerships between the public and private sectors can be effective in driving ICT adoption in many countries. It has been conclusively shown that in countries such as India, the United Kingdom, China, and the USA, public-private partnerships are seen as a strategy for promoting ICT development (Kuriyan & Ray, 2009). These partnerships can help to provide funding for ICT projects, as well as support the development of policies and regulations that promote ICT growth and innovation hence

sustainable development. This usually involves collaboration between public and private sector organizations to jointly fund and implement ICT projects.

Investing in education and training:

UNESCO mentioned that investing in ICT training and education accelerated the process of ICT adoption (Leye 2007). Many controversies related to sustainability and development state that researching and publishing ICT work promotes a wider understanding of the topic (Ponelis & Holmner, 2015). Despite these controversies, there is growing consensus that research and publishing ICT work can play a crucial role in promoting sustainability and development. This means that by publishing their findings, scholars or researchers can share their insights with the government, policymakers, practitioners, and the wider public, helping to inform decision-making and promote ICT adoption. In a nutshell, this also includes the development of educational curricula that incorporate ICT skills, as well as training programs for individuals and organizations to improve their ICT knowledge and capabilities.

Hence the collaborations among private sectors, academia, and government are encouraged to develop a long-term partnership and strategy, which also include the joint investment to promote the usage of ICT.

Promoting Digital Entrepreneurship and Supporting local entrepreneurship

Digital entrepreneurship must be supported and moving central to the discipline of ICT and business management is the promotion of a technological environment that is favourable to local digital entrepreneurs in Zimbabwe (Ngoasong, 2018). This includes digitizing business operations, using ICT tools to communicate and collaborate, and leveraging ICT to enhance customer experience and expand market reach. Therefore, it involves providing support for local entrepreneurs who are developing innovative ICT solutions that can address local challenges. ICT presents opportunities for entrepreneurship and job creation in Zimbabwe. The government must encourage digital entrepreneurship by providing incentives such as tax breaks, access to funding, and incubation centres. This can help to create a supportive environment for ICT businesses to thrive.

Conclusion

In conclusion, bridging the digital divide in Zimbabwe by using ICT is essential for fostering economic development in the country. The integration and use of ICT in various sectors of the economy can lead to increased efficiency, productivity, and innovation, all of which are critical drivers of economic growth. In addition, by promoting digital entrepreneurship and providing digital skills training, Zimbabwe can tap into the potential of the digital economy and create new opportunities for employment and income generation. However, realizing the full potential of ICT requires concerted efforts from all stakeholders, including the government, the private sector, civil society, and development partners. By working together, Zimbabwe can harness the power of ICT to transform its economy and improve citizens' lives.

References

- Akanbi, O. A., Does governance matter in infrastructure: Evidence from Sub-Saharan Africa. *International Business & Economics Research Journal (IBER)*, 12(1), 113-126, 2013.
- Datta, A., Telecommunications and economic growth: a panel data approach. *Applied Economics*, 36(15), 1649, 2004.
- David, O. O., Nexus between telecommunication infrastructures, economic growth and development in Africa: Panel vector autoregression (P-VAR) analysis. *Telecommunications Policy*, 43(8), 101816, 2019.
- Diga, K., Nwaiwu, F., & Plantinga, P., ICT policy and poverty reduction in Africa. *info*, 15(5), 114-12, 20137
- Jokonya, O., Towards a critical systems thinking approach during IT adoption in organisations. *Procedia Computer Science*, 100, 856-864, 2016.
- Kayisire, D., & Wei, J., ICT adoption and usage in Africa: Towards an efficiency assessment. *Information Technology for Development*, 22(4), 630-653, 2016.

- Kuriyan, R., & Ray, I., Outsourcing the state? Public–private partnerships and information technologies in India. *World Development*, 37(10), 1663-1673, 2009.
- Lau, L. J., & Tokutsu, I. (1992). The impact of computer technology on the aggregate productivity of the United States: An indirect approach. *unpublished paper, Stanford University*, (August).
- Lee, K., Park, Y., & Lee, D., Effect of the ICT ecosystem structure on the sustainable growth of ICT firms: A metafrontier analysis on China, South Korea, the United States, and Japan. *Sustainability*, 8(5), 469, 2016.
- Leye, V. (2007). UNESCO, ICT corporations and the passion of ICT for development: modernization resurrected. *Media, Culture & Society*, 29(6), 972-993.
- Makiwa, P. J., & Steyn, R. (2016). ICT adoption and use in Zimbabwean SMEs. 2016 IST-Africa Week Conference,
- Mengesha, G. H., & Garfield, M. J., A contextualized IT adoption and use model for telemedicine in Ethiopia. *Information Technology for Development*, 25(2), 184-203, 2019.
- Moodley, S., The promise of e-development? A critical assessment of the state ICT for poverty reduction discourse in South Africa. *Perspectives on global development and technology*, 4(1), 1-26, 2005.
- Ngoasong, M. Z., Digital entrepreneurship in a resource-scarce context: A focus on entrepreneurial digital competencies. *Journal of small business and Enterprise Development*, 25(3), 483-500, 2018.
- Njanike, K. (2019). The factors influencing SMEs growth in Africa: A case of SMEs in Zimbabwe. In *Regional Development in Africa*. IntechOpen, 2019.
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- Shao, M., Fan, J., Huang, Z., & Chen, M. (2022). The Impact of Information and Communication Technologies (ICTs) on Health Outcomes: A Mediating Effect Analysis Based on Cross-National Panel Data. *Journal of Environmental and Public Health*, 2022.
- Vanessa, S. T., Guido, E., & Danny, C. . Inequality, ICT and financial access in Africa. *Technological Forecasting and Social Change*, 2019.
<https://doi.org/10.1016/j.techfore.2018.11.004>
- Ward, M. R., & Zheng, S. Mobile telecommunications service and economic growth: Evidence from China. *Telecommunications Policy*, 40(2-3), 89-101, 2016.