


Chapter 3

Adaptation to Pandemic Through Universal Access to Innovative Technologies: ICT Access for Future Pandemics

Abiodun Alao

 <https://orcid.org/0000-0001-6288-2991>
University of Johannesburg, South Africa

Roelien Brink

University of Johannesburg, South Africa

ABSTRACT

The implementation of information technology into the healthcare sector is inevitable to prevent future pandemics, as COVID-19 had a huge impact on healthcare services and humanity. Therefore, universal access to technologies in managing unforeseen pandemics is necessary. The objective of this study is to examine how healthcare institutions use innovative technologies to address future pandemics. The study reflects on one of the targets of Sustainable Development Goal (SDG) 9, which is to significantly increase access to IT and strive to provide universal and affordable technology access to global citizens by 2030. This is to obtain the vision to work towards building an open, inclusive, and digital network for a secure future. This study used discourse analysis to critically analyze the use of innovative technologies like AI systems, machine learning, the internet, mobile phones, mobile computing, and other technologies adopted to manage the global pandemic. This study recommends to policymakers the importance of universal access to innovative technology to address pandemic issues.

DOI: 10.4018/978-1-7998-9418-6.ch003

INTRODUCTION

Many pandemics mostly occur from natural or bio-terrorism like the present coronavirus 2 (SARS - CoV-2) pandemic, a human immunodeficiency virus that has influenced the use of innovative technology tools to be an essential commodity for human sustainability (Mamelund, 2017). The previous global widespread of infectious diseases have caused global pandemics, such as COVID-19, Ebola, Spanish Flu, Bird Flu, Aids, and Tuberculosis (TB) (World Health Organisation, 2011).

Information Technology (IT) tools have become inevitable, and access to universal health coverage (UHC) is essential globally for effective communication and information dissemination on unexpected health issues similar to the present coronavirus pandemic (Sein, 2020; Dhaliwal, 2018). The information and communication and technology (ICT) based convergence and digitalization era of the Fourth Industrial Revolution (4IR) which emerged from the integration of the preceding Third Industrial Revolution (3IR) further enhanced the use of innovative technology for the management and continuous operation of healthcare institutions and different organizations during the COVID-19 pandemic that has been an almost instantaneous response (Voskoglou, 2016).

In addition, the benefits of using innovative technology include preventive measures and digital solutions using open data, hackathons and events, useful links, big data, and other IT resources to tackle universal access (Sein, 2020). The challenges that arise from future pandemics can be rectified through

The implementation of information technology access to a huge database resource from websites and useful platforms that can be used to analyze the evolution of prior and future pandemics (Hussain et al.,

2021). Innovative technologies in healthcare institutions can provide an increased collaboration opportunity with international bodies, government, the healthcare sector, private organizations, and public administrations (European Commission-DIGIT, 2020).

Innovative technologies maintain and transmit information about healthcare issues that can be vital to human sustainability (Young, 2020). In this context, innovative technology tools can be used to address issues about the past, present, and future pandemics that can constrain human health development (CSEA, 2020). The objective of this study is to examine how healthcare institutions can use innovative technologies to access significant information about future pandemics.

This study focuses on the importance of innovative technologies such as Artificial Intelligence (AI), machine learning, mobile phone, the internet, mobile computing, satellite technology, and other technologies to manage future pandemics. Innovative technologies are effective in healthcare institutions and society, because they have a

17 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/adaptation-to-pandemic-through-universal-access-to-innovative-technologies/308856

Related Content

ICT for Digital Inclusion: A Study of Public Internet Kiosks in Mauritius

L.G. Pee, A. Kankanhalli and V.C.Y. On Show (2012). *International Comparisons of Information Communication Technologies: Advancing Applications* (pp. 124-149).

www.irma-international.org/chapter/ict-digital-inclusion/61766

Outsourcing and Information Systems Development: How Complementary Corporate Cultures Minimize Risks of Outsourced Systems Projects

Julie E. Kendall and Kenneth E. Kendall (2008). *Global Information Technologies: Concepts, Methodologies, Tools, and Applications* (pp. 1866-1876).

www.irma-international.org/chapter/outsourcing-information-systems-development/19079

A Survey on Contactless Smart Cards and Payment System: Technologies, Policies, Attacks and Countermeasures

Brij B. Gupta and Shaifali Narayan (2020). *Journal of Global Information Management* (pp. 135-159).

www.irma-international.org/article/a-survey-on-contactless-smart-cards-and-payment-system/262960

Digital Literacy and Cultural Mediations to the Digital Divide

Monica Fantin and Gilka Girardello (2009). *Selected Readings on Global Information Technology: Contemporary Applications* (pp. 51-74).

www.irma-international.org/chapter/digital-literacy-cultural-mediations-digital/28605

The Determinants of eWoM in Social Commerce: The Role of Perceived Value, Perceived Enjoyment, Trust, Risks, and Satisfaction

Kamel Rouibah, Nabeel Al-Qirim, Yujung Hwang and Sara Ghasem Pouri (2021). *Journal of Global Information Management* (pp. 75-102).

www.irma-international.org/article/the-determinants-of-ewom-in-social-commerce/277184