



IMPACT ASSESSMENT OF TECHNOLOGY ON NIGERIA'S SECURITY SYSTEM

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Abstract

The attainment of a stable and effective national security is the desire of every nation. While insecurity is prevalent in every nation, some have been able to mitigate it and reduced its impacts. Some countries, however, are just starting to adequately deploy the necessary tools to bring about stability in their security system. Nigeria is one of such nations. Its security system has always been deployed with the use of the armed forces. However, recent trends have revealed that security shouldn't be limited to the use of guns and lethal weapon. The adoption of technology has not only proven to be effective, but also trustworthy. This paper therefore seeks to explore in depth the impact of technology on Nigeria's security system. In order to achieve this, it explored the literatures of other scholars, placing their ideas and thoughts side by side, and making adequate meaning from them. It adopted the securitization theory as its theoretical underpinning. The securitization theory, which was formulated by Waever, states that "issues of critical importance to a nation require clear identity and protection." This basically illustrates that if the subject of national security is important to a nation, then adequate means would be provided to keep it effective. The paper went ahead and considered the use of telemedicine and how it proved to be effective during the pandemic. It also evaluated the counter-insurgency by the use of relevant technologies. As a way of recommendation, the paper admonished the Nigerian government to invest massively especially in the latest technology, in order to completely eradicate insurgency. It also advised the citizens to partner with the government by providing the armed forces with relevant information that may be needed to combat and defeat insecurity.

Keywords: Technology, Nigeria, Security System, Boko Haram, COVID 19, Insurgency.

Introduction

National Security is one of the ultimate goals of every progressive nation. In order for this to be attained, several security parastatals are established, with each one focusing on specific aspects of keeping the citizens secured. Ajijola (2012) opined that "National Security could refer to a state of absence of everything and anything that could be a threat to peace, progress, development and tranquillity within a society." The progress of a nation is often determined by the effectiveness of its security measures; how effective the security agencies are trained and deployed plays a huge role in how a country progress. When adequate security is put in place, citizens can trade peacefully, and merchants can move their goods around town freely, without the fear of being robbed. Businesses can grow in an exponential way, and this would inadvertently contribute to the progress of the nation.

In sharp contrast, however, if the security measures that are put in place aren't effective, such a nation can result to anarchy, rendering its people always looking behind their shoulders as they go about their daily activities. Over the past several years, Nigeria has been confronted with insecurity, on different level. As Anyu (2007) connotes that "There is general agreement among historians that insecurity have been the core cause of bloodshed in Nigeria and the world at large." The effects of adequate insecurity are often more catastrophic than can be imagined. It could be argued that it is the lapse in security measures that has led to the arrival of Boko Haram and bandits across the nation. "The inevitable security issues leading to subsequent destruction of lives, properties and the environment calls for a holistic approach through effective use of information technology" (Anyu, 2007).



In tackling the various forms of security challenges that have be devilled the nations, several methods have been adopted, and a good number of them are proving to be effective. One of the methods that have shown tremendous promises is the adoption and implementation of technology to mitigate insecurity. Adams (2016) observed that ICT has constantly demonstrated to be a powerful tool with the ability for both good and evil, depending on the intention of the user that is making use of it, reaping of its powerful ability. The role that technology has played in keeping the security of Nigeria in place have far surpasses what could have been imagined. “Apart from the role that has been played by the traditional security agencies, Information and Communication Technology (ICT) is now the focus to lead Nigeria in the new era of globalization and knowledge and consequently development to manage and possibly eradicate threats facing the nation as expressed by the following top law enforcement agents in Nigeria” (Mijah, 2007).

“The role of Technology and in particular, software systems in National Security Database Intelligence dynamics have therefore become a critical and significant component as well as a fundamental necessity for understanding e-security life-cycle” (Adams, 2016). Nigeria, as are many developed and developing nations, has massively deployed the use of technology in order to make her security measures more effective. And sure enough, its adoption hasn't been disappointing. However, there are downside to its use. As Adams (2016) has rightly noted that technology is a massive tool that can be used for either good or evil, depending on the user. A lot of criminal activities are now being carried out, in huge numbers, despite that it is the same means that government is using to protect citizens. This simply tells us that technology is vast, almost as it to say that it is a world of its own.

This paper seeks to highlight how effectively technology has helped to improve Nigeria's security system. It will also highlight some of the measures that criminals are leveraging it and how the government is responding, tracking them and

increasing the adequacy of security measures.

Conceptual Clarification

The definition of security varies, depending on the angle with which it is being considered. Hettne (2010) defines security “as a reasonable level of predictability at different levels of the social system, from local communities to the global level...” This could be inferred upon that security is valued both locally and globally. Dwelling from the perspective of Hettne, the tides of events that happen at a place are meant to be predictable based on the measure of security that is put in place. Any form of surprise or unexpected events can best be considered as anti-security. From another perspective, Okwori (1995) noted that security is defined as a “state's capabilities to defend its territorial integrity from threats, actual and imagined, as well as acts of aggression from other potential enemies.” The format in which security is tackled could come in various forms and level. “At the domestic level, the belief is that internal law-enforcement agencies and other instruments of domestic intelligence are all that is required for a state to be secured” (Aliyu, 2012).

“National security,” according to Ani and Onyebukwa, (2016) “is a combination abundant and suitable political, military, human resources, economic structures, technology, science and natural resources at its optimal level in a country. It includes the ability to preserve the nation's physical integrity and territory and protect it from undesirable internal and external control.” Ani and Onyebukwa broadened the scope of security when they highlighted the different forms it can be breached. They went further to assert that “security encompasses more than just military security.” Lagazio (2012) added that “it includes the safety of a state against criminal activities.”

Another perspective entails “a new and broader conception in which security entails the capacity of a state to defend itself from external threats with all the necessary means at its disposal, and internal threats through overall socio-economic well-being of its citizenry” (Absolute Astronomy, 2011; Tedheke, 1998). This involves a multidisciplinary level of commitment towards



the citizen.

“The meaning of security in a primordialist nation would definitely be different from the contextualist. In the former, the emphasis is most likely to be the preservation of what binds the people together: common language, tradition, quest for freedom and the like. But in the contrived nation state, security would be defined in the context of welding the people together into a complex whole” (Isaac, 2012).

The importance of security is of bigger magnitude that Mijah (2007) stated that “in modernizing society, security means development, security is not military force though it may involve it; security is not traditional military activity, though it may encompass it; security is not military hardware though it may include it. Security is development and without development, there can be no security.” In modern time, security has transitioned into several forms, with technological security being at the forefront. Technology, as it has been for developed nations, is an active tool for tightening national security if adequately deployed. According to This Day (2013), “Reports shows that the United States and some countries in Europe, Asia, Middle East and even in Africa are taking proactive steps at checkmating threats to their national security by latching onto revolutions in ICT.”

To unpack the concept of technology, Bashar (2017) opined that it is “used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or ink system.” Ekwutosi et al. (2021) observed that “it encompasses both the internet-enabled sphere as well as the mobile one powered by wireless networks. It also includes antiquated technologies, radio and television broadcasts – all of which are still widely used today alongside cutting-edge ICT pieces such as artificial intelligence and robotics.” Bassey (2020) succinctly added that “technology as it were, is one of the platforms that cannot be ignored, especially when it comes to insecurity whereby a lot of instruments can be deployed to tackle and improve the vigilance of all the

organizational activities.”

“The solution to the nation's insecurity challenges lies in science and technology such as the use satellite technology to monitor the activities of the insurgents” (The Sun, 2022). Buzan & Hansen (2009) concluded that “there is a greater recognition of the relevance of other elements such as political, environmental, economic, and social factors as irreducible components of security of any country.”

Methodology

Due to the nature of the subject under investigation, qualitative method was used in data collection. Qualitative method mainly depends on secondary source of data like historical documents, books, magazines, journal articles, websites, etc. However, it is the nature of our investigation that defines this method of data collection adopted. The study adopted a content-analysis method where data was primarily gotten through extensive literature from books, and relevant internet materials. Each of the data used to conduct this study is relevant to the study and it enabled the reliability and credibility of the study.

Theoretical Framework

National Security is composed of two distinct words: “national” and “security”. It is basically the general state of peaceful ambience experienced by a state. In expounding on this, the paper adopts the Securitization Theory as its theoretical underpinning. From the perception of Waever, “Concept securitization is generally associated with the Copenhagen School of Security Studies, generally taken to include Ole Waever, Barry Buzan, Jaap de Wilda and associated researchers. The school originally studied the dynamics of security across five different, nonexclusive sectors: military, political, societal, economics, and environmental.” The theory of Securitization as formulated by Ole Waever “state that issues of critical importance to a nation require clear identity and protection.”

“Through the formulation of securitization theory, the Copenhagen School has advanced the argument that security is ultimately an outcome of



a special social process or “speech act” rather than an objective condition” (Williams 2003). According to WaWairegi (2019) “The theory implies that science and Technology, because of its importance as enabler and force multiplier in National security, has to be transformed into an issue of National Security.”

Poeples and Vaughan-William (2010) noted that “when an issue qualifies to be considered as a security matter, it is politicized and if the danger is magnified, the matter becomes securitized.” Abrahamsen argues that “securitization is a socially constructed threat, which becomes represented and recognized as the state proceeds to use whatever means to respond....”

Erguvenc (1999) emphasized how the “notion of national security in the 21st century had shifted beyond the traditional concept of military security and instead involved the consideration of economic, political, and societal risks.” Accordingly, he argued that “states could no longer rely solely on military means to be secure, but also on other things such as educated populations and economic infrastructure to be secure and compete in contemporary politics” (Erguvenc 1999: 46).

This theory mostly focused on the threats posed on national security by other entities, with a minor focus on the benefits bestowed on security by these bodies.

From Waever's (2004) opinion, “the main argument of securitization theory is that security is a (illocutionary) speech act, that solely by uttering 'security' something is being done. 'It is by labelling something a security issue that it becomes one'.” Waever is enormously critical of edging issues in terms of security. For him: “security should be seen as a negative, as a failure to deal with issues of normal politics” (Buzan et al. 1998). Technology, however, has been massively used to improve Nigerian security system. This theory is therefore appropriate for this study as it identifies security as one of the major components of a country.

A Glance at Telemedicine

Telemedicine or Telehealth is basically the dissemination of health-related materials and services making use of electronic telecommunication technologies. According to Ogirima et al. (2022) “Medical services and information distributed electronically or through telecommunication technology to enable remote care in which people have access to medical help by reducing the need to seek in-person care is called telemedicine.” This form of distributing health related materials and taking care of patients via the use of technology, is a prominent practice in the developed world. However, since the surface of COVID 19, many developing countries too are beginning to follow suite. “Though telemedicine technology is not that new,” (Akib et al., 2020) “the coming of COVID-19 and widespread stay-at-home orders mean that physicians are turning to telemedicine to engage patients on a much greater scale than ever expected till now” (Yang, 2020). “Nowadays, unless the need for hands-on medical attention is immediately palpable, a phone, internet, Video conferences chat, or other ICT media are used to book an appointment with a doctor or other healthcare providers are often the first step in seeking medical care. This process shows that telemedicine is inaction” (Grybauskas, 2020).

There is still debate today as to whether COVID 19 was a biotechnological weapon designed to infiltrate the security of all nations. The conclusion of such argument may not have significant impact now, as many nations, including the under-developed nations, have adopted technology and used it as a counter-weapon to fight the disease. Whatever COVID 19 may represent, it admittedly crumbled most nations' security system, and rendered citizens helpless. However, within time, people started operating remotely, by deploying the necessary technological gadgets. For instance, “Healthcare providers and government's decision-makers make use of information technology to improve public health by dispersion news related to the COVID-19. The preventive measures, and medical advice were spread to save lives during the pandemic” (Akib et al., 2020).



How the gadgets of technology were used by individuals and cooperate bodies, as well as government to combat the virus is simple yet complicated. One of the government bodies that massively deployed technology was the National Centre for Disease Control (NCDC). They noted that “ICT usage for the dissemination of information on precautions and preventions of Covid19 in Nigeria was so tremendous which offers an interesting aspect that touches upon technology, informatics, and societal issues beneficial to the society during this pandemic period” (NCDC, 2021). In the same vein, the “World Health Organization (WHO) created websites that offer progressing updates and top stories on the COVID-19 during the pandemic. Many organizations are streaming on social media in an attempt to inform people on the latest update regarding disease and preventive measures to curb the menace. Dedicated lines were created that people can contact to get more information concerning the precaution, prevention, and curative measures for those that observe the symptoms in the people around them” (Akib et al., 2020).

“In Nigeria and Algeria, mobile tools were also used to track cases, assess the user's risk of COVID-19 based on responses to a curated questionnaire and enforce adherence to quarantine rules” (Friends of Europe, 2021). “The data collected (e.g., symptoms, age, and travel history) could be analysed to predict population – or community-level response and adherence to public health interventions. Humanitarian agencies also used satellite imagery and other sources of data to map and identify high-risk areas to generate situational awareness and capacity” (U. N. OCHA, 2020). As vulnerable people battled with respiratory problem as a result of the virus. The need for ventilator spiralled upward, with very little amount available. “Amid a shortage of ventilators on Covid-19 wards in Nigeria, 20-year-old engineering student Usman Dalhatu attempted to help meet the shortfall.” (BBC News, 2020). He went ahead and built an automatic ventilator, which was immediately used to save a life.

The development of mobile applications for the usage of health services is otherwise known as mobile health (mHealth). It is a branch of telehealth and according to Otu et al. (2016), it can be efficiently taken advantaged to balance there moteness and proficiency and train front line health workers specifically during disease outbreaks. The sad reality is that the health care system of many developing countries wasn't adequately resourced before the sudden appearance of the COVID 19 virus. Many health care workers were undertrained, and undereducated. The emergence of the virus however changed the narrative. The need to embrace technology and integrates it into the health care system became very apparent. This innovative approach basically enabled health workers to easily evaluate precise and up-to-date clinical material at their ease on their mobile devices.

Technology for Counter-Insurgency

For several years, Nigeria has been faced with insurgency, most especially the various attacks of citizens by the Boko Haram sect. “The Boko Haram Sect is a *Sunni* sect that espouses and preaches a perverted brand of Islam. They advocate the use of extreme violence in the realization of their objectives” (Akinola, 2013). As Rubright's (2015) has posited “that technologies offer both opportunities and challenges....” The hands that control how technology is deployed is one of the major determinants for concluding whether it is a good or bad tool. In the wrong hands, technology can be used to wreck huge havoc, resulting to loss of lives and properties. Technology in the hands of the Boko Haram is definitely a bad tool. Usman et al. (2020) gives a glimpse of how these technologies are used by the sect. he elucidated that “the Boko Haram sect utilizes simpler and cheaper technologies such as cell phones to detonate Improvised Explosive Devices (IEDs), send and receive illicit monies.” Yusuf (2021) quickly added that “they also used the internet to coordinate themselves and spread messages against Nigerian government.”



In countering the insurgencies posed by the Boko Haram sect, “technology has been deployed in the fight against Boko Haram Sect in Nigeria and surrounding Sahel states” Yusuf (2021). It is logical then to fight back using the same tool that the sect is using to disturb the nation, albeit in much different ways. In the fight against this dangerous sect, which may be considered a battlefield, several options could be explored.

Yusuf (2021) carefully laid the bedrock when he noted that “efforts to diminish, destroy and ultimately defeat insurgency is literally referred to as COIN” Moore (2011) succinctly posited that COIN operation is “an integrated set of political, economic, social, legal, civil, NGOs, and psychological measures to prevent the recurrence of armed violence, create and maintain stable political, economic and social structure, resolve the underlying causes of and insurgency in order to establish sustained conditions necessary for lasting stability. The term was used to refer to counter insurgency, with the use of lethal weapons such as gun. These weapons, especially the sophisticated ones, are the advanced development of technology. According to Neil (2013), “In warfare, technologies are categorized into lethal and non-lethal technologies” While the lethal technologies are useful in the battlefield, they can easily result to high loss of lives when citizens are involved, which makes the COIN approach of using technology a little bit of concern.

The British introduced another perspective of the COIN while in a campaign in Northern Island. They focused on a strategy known as “Win Hearts and Minds” (WHAM) of the local people. The strategy proved to be effective, as the local people joined hands and provided them the needed information to become victorious. As a result, Gianluca, (2018) asserted that “insurgency involves an understanding of the insurgents through policies and strategies formulated to discourage them from fighting and to ultimately win hearts and minds of the people.”

The effective deployment of WHAM, using the adequate technology, could limit the loss of lives

and prevent violence from occurring. Eli et al (2018) defines COIN operation as “not just about winning hearts and minds of the people but ability to swiftly acquire information from the people about insurgent activities.” Like in the case of the British army, the COIN operations can be adequately used by leveraging the information available to the local people. Attaining this information would require the use of simple technology such as social media and phones that can at least send message.

The fight against insurgency in Nigeria has been with both lethal and non-lethal technological approach. While the lethal aspect is prevalent, the non-lethal, such as obtaining information from local communities and trying to reduce violence approach, is just being embraced, and like it did for the British, it is proving to be effective. Yusuf (2021) captured it better when he noted that “when the people are satisfied with the government security and services, they will by default supply information about the insurgents to the government security forces. With information, counter-insurgent attacks can dismantle insurgent networks.”

The technologies adopted by both insurgence body and the Nigerian military are both soft and complex. For instance, Yusuf (2021) noted that “the Armed Force of Nigeria (AFN) adoption of firearm technologies is to achieve overwhelming superior firepower against the Boko Haram Sect in the Northeast.” The Cable (2020) revealed that “a recent account of the impact of the firepower revealed that in some encounters with Boko Haram Sect, the Sect members often abandoned their gun trucks.” In essence, “the use of the indigenous Mines Resistant Ambush Protected (MRAP) vehicles against Boko Haram Sect gave the AFN advantage over them” (Yusuf, 2021).

In other instances, the insurgencies are proactive in deploying active technological gadgets for their wicked acts. Aladenusi (2008) voiced out that “we are seeing significant interest by terrorist organizations in leveraging cyber capabilities to further their cause”. What this means is that the government isn't the only one making use of



advanced technology. It is therefore very important to know and understand the tactics of the terrorists in order to keep them at bay. As a result, the Armed Forces of Nigeria has opted for another technology known as Intelligence Surveillance, and Reconnaissance (ISR). "These technologies," according to Gail et al. (2002), "encompass those technologies that would aid multiple activities related to the planning and operation of systems that collect, process, and disseminate data in support of current and future military operations." Most often, the Nigerian Air Force make use of its Unmanned Aerial Vehicle (UAV) to survey the areas occupied by the insurgents, thereby collecting the information in real time, and taking the necessary action.

The impact of technology in warfare against insurgency is of huge significance, enabling the security system of the country strengthen itself. However, the same technology is being deployed by the terrorists, making it both bad and good servant. In other areas, such as combating cyber thieves (aka Yahoo-Yahoo boys), corrupt politicians, shoplifters, and armed robbers, technology has greatly enabled the security to mitigate their growth, as the adequate measures were swiftly implemented.

Conclusion

The effectiveness of the security of a state greatly determines how safe the state is. Nigeria, being a sovereign state has for a long time suffered from insecurity, and has adopted different method to tackle it. The adoption of technology in recent times have proven to be very effective. The arrival of COVID 19 further infiltrated the security of the state, as it did the rest of the world, and rendered everyone helpless. In tackling the virus, technology was deployed by the government, corporate bodies, and even individuals. Government funded several technological projects, putting focus on telehealth, an idea that has only been given limited attention, and also massively leveraged on social media to communicate to citizens and update them. Corporate bodies leveraged on technological applications such as video conferencing app in order to keep business running, and individuals

too did their bit. A national security system that should have been left completely incapacitated was revived by the use of technology. The fight against insurgency too has taken a completely different shape with the use of advanced technology such as robotics and unmanned aerial vehicle. The use of social media too and simpler technologies are proving to still be relevant. While the insurgences too are massively investing in the use of technology, the government is moving very fast in deploying them, using both lethal and non-lethal COIN approach. As in both the fight against COVID 19 and insurgency, technology is constantly being used in several other areas, such as corruption fighting, theft, armed robbery, etc. the general conclusion of this paper, after the highlights of the several literatures, is that technology is a very effective tool that has helped to normalized the national security system of Nigeria.

Recommendation

The subject of national security is a very sensitive subject. It is important then to make sure that adequate measures are put in place to make it more effective. As a result, the following recommendations are made:

1. Seeing the massive impact that technology has had over the national security system, it is strongly advised that the government of Nigeria invest massively in technology in order to strength its security system.
2. The coming of COVID 19 literally forced several corporate organizations and individuals to leverage on technology. It is strongly suggested that individuals leverage massively on technology, as this is a way to contributing to the effectiveness of the national security system. With this in place, it would be easy to make use of its platforms in the case of any emergency like that of the pandemic.
3. Individuals and corporate bodies are also advised to invest massively in the idea of fighting insecurity in Nigeria. The quest to attaining security stability shouldn't be laid on the shoulders of the government alone. This should be the goal of every citizen.
4. The government alone may get



overwhelmed fighting insurgencies alone. In many cases, local people have saved several lives just by providing the armed force with relevant information. This kind of partnership is very helpful and can thus strengthen the nation's security system.

Reference

- Abrahamsen (2005) Blair Africa: *The Politics of securitization and fera*, *Alternative global local political* 30:55-80
- Adams, O. K. (2016) The Role of Information Technology in National Security: "A Case Study of Nigeria" *Global Journal of Computer Science and Technology: H Information & Technology*; Volume 16 Issue 3 Version 1.0
- Ajijola, (2012) *The role of ICT Deployment for National Security*, in (vol 1). Kaduna, Nigerian Defence Academy, Academy Press. 18(2), 39-55. Accessed 10/10/2012
- Akib Z. Tarannum Z. & Mohammad S. H. (2020) *ICT Intervention in the Containment of the Pandemic Spread of COVID-19: An Exploratory Study*.
- Akinola O. (2013). "Nigeria's Troubled North: Interrogating the Drivers of Public Support for Boko Haram," *International Centre for Counter-Terrorism (ICCT)*, Research Paper, October 2013: 2-4. Accessed from www.icct.nl/download/file/ICCT_Olojo_Nigerians_Troubled_North_October_2013.pdf.
- Aliyu M. K. (2012) Nigeria's Security Challenges and the Crisis of Development: Towards a New Framework for Analysis; Department of Political Science, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia; *International Journal of Developing Societies* Vol. 1, No. 3, 2012, 107-116
- Anyu, J. N. (2007) *The International Court of Justice and Border-Conflict Resolution in Africa: The Bakassi Peninsula Conflict*. Mediterranean Quarterly
- Ani, K. J. and Onyebukwa, C. F. (2016) *Nigerian Security Challenges And Recommendations For Sustainable National Development*; Ahmadu Bello University Press
- Anonymous (2002), *Analysis Magazine* 1(3), September, 2002.
- Bashar, L. M. (2017). Human security for sustainable development in Nigeria: The role of information and communication technology (ICT). *Covenant Journal of Informatics and Communication Technology*, 5(2).
- Bassey, S. A. (2020), *Technology, Environmental Sustainability and the Ethics of Anthropoholism*. *Przestrzeń Społeczna*, 1(19)
- BBC News. (2020) Coronavirus: ten African innovations to help tackle Covid-19 - <https://www.bbc.com/news/world-africa-53776027>
- Buzan, B. & Hansen, L. (2009). *The evolution of international security studies*. Cambridge: Cambridge University Press.
- Buzan, B., Waever O. & Jaap de Wilde (1998) *Security: A New Framework for Analysis*, Boulder, CO: Lynne Rienner.
- Community', in Emmanuel Adler and Michael Barnett, eds, *Security Communities*, 69–118, Cambridge: Cambridge University Press.
- Ekwutosi, E. O., Effiong, E. N. & Bassey I. E. (2021) *The Role of Information Technology in Enhancing National Security in Nigeria (2001 -2020)*; Department of History & International Studies, University of Calabar, Cross River State, Nigeria.
- Eli B. Joseph H. F. & Jacob N. S. (2018). *Small Wars, Big Data: The Information Revolution in Modern Conflict*. New Jersey, Princeton University Press.
- Erguvenc, S., (1999) 'MilliGüvenli in Yeni Öncelikleri' [New priorities for national security], *UlusalStrateji*2(9): 46–49
- Friends of Europe. (2020.) M-Pesa to Ushahidi: How African tech is fighting the coronavirus <https://www.friendsofeurope.org/insights/from-m-pesa-to-ushahidi-how-african-tech-is-fighting-the-coronavirus/>.
- Grybauskas A., Pilinkienė V. & Stundžienė A. (2020) Predictive analytics using Big Data for the real estate market during the COVID-19 pandemic. *Journal of Big Data*



- Hettne, B. (2010). Development and security: Origins and future. *Security Dialogue*, 41(1), 31-52.
- Isaac, O. A. (2012) Nigeria's Security Challenges In Historical Perspective; University Of Ibadan
- Mijah E. B. (2007). *Democracy, Internal Security & Challenges of internal Security in Nigeria*. International; Association of Emergency Managers, "Principles of Emergency Management," September 11, 2007, 4, <http://www.iaem.com/publications/documents/EMPrinciples091107.pdf>.
- Monica Lagazio. (2012) "*The Evolution of the Concept of Security*" The Thinker; Volume 43. 2012, pp. 36-41.
- Neil Davison, (2013). "New Weapons: Legal and Policy Issues Associated with Weapons Described as Non-Lethal", in Dan Saxon, (ed) *International Humanitarian Law and the Changing Technology of War*. Leiden, Martinus Nijhoff Publisher.
- N C D C , 2021. <https://covid19.ncdc.gov.nghttps://www.worldometers.info/coronavirus/country/egypt/>
- Ogirima S. A. O., Arulogun O. T & Adigun E. B. (2022) *The role of ICT during COVID-19 pandemic in Nigeria*; Ladoke Akintola University of Technology, Ogbomoso, Nigeria
- Okwori, A. S. (1995). Security and deterrence: Towards alternative deterrence strategy For Nigeria in the 21st century and beyond. *Defence Studies: Journal of the Nigerian Defence Academy*, Kaduna, 5, 19-28.
- Otu, A., Ebenso, B., Okuzu, O., and Osifo-Dawodu, E. (2016). Using a mHealth tutorial application to change knowledge and attitude of frontline health workers to Ebola virus disease in Nigeria: a before-and-after study. *Hum. Resour. Health* 14:5. doi: 10.1186/s12960-016-0100-4
- Poeple & Vaughan-William (2010) *Critical security studies: An introduction*, London: Routledge
- Rubright Richard W. (2015). *The Role and Limitations of Technology in U.S. Counterinsurgency Warfare*, University of Nebraska, Potomac Books.
- Tedheke, M. E. U. (1998). Defence and security in Nigeria: Beyond the rhetorics. *Defence Studies: Journal of the Nigerian Defence Academy*, Kaduna, 8, 1-22.
- The Guardian (2020). Coronavirus. Ogun government launches mobile app for health workers. *The Guardian* [newspaper on the Internet]. Available online at: <https://guardian.ng/news/coronavirus-ogungovernment-launches-mobile-app-for-health-workers/>
- The Sun (2022) 'ICT tackle Boko Haram'
- This Day (2013). *Addressing National Security Challenges with Technology Tools*. Published by: Thisday Newspaper Saturday September 12, 2013 Nigeria. Available at: <http://www.thisdaylive.com/articles/addressing-national-security-challenges-with-technology-tools/158831/>
- United Nations OCHA (2020) Five ways humanitarians use technological innovation to deliver during COVID-19; Humanitarian Dispatches - Medium. (2020, Jun 11) <https://medium.com/humanitarian-dispatches/five-ways-humanitarians-use-technological-innovation-to-deliver-during-covid-19-40ce8e977fc4>.
- WaWairegi S. G (2019) *Role of Science and Technology in advancing National Security in 21st Century, Africa: A case Study of Kenya*. Institute of Diplomacy and International Studies, University of Nairobi
- Waever, O. (1997), *Concepts of Security*. Copenhagen: Institute of Political Science
- Waever, O. (1998) 'Security, Insecurity and A security in the West-European Non-War
- Yang S., Fichman P., Zhu X., Sanfilippo M., Li S. & Fleischmann K. R. (2020) The use of ICT during COVID-19. *Proc. Assoc. Inf. Sci. Technol.* 2020;57:e297. <https://doi.org/10.1002/pra2.297>
- Yusuf A. M. (2021) *Leveraging Technologies for Counterinsurgency Operations in Nigeria: Available Options*.