

Exploring the Place of 4IR in Preventing and Addressing Ethnoreligious Conflict in Nigeria

Benjamin Okorie Ajah¹, Emeka E. Obioha²,
Sophia Thabane³, & Martha Uchenna Ogbuke^{4*}

Abstract

The ethnoreligious crises confronting Nigeria have made efforts of the government to the nation yield no or little results. Religious fanatics, who have been destroying lives and property, compound this problem. This article explores how 4IR technologies can prevent and address ethnoreligious conflict in Nigeria. The article shows that the violence is caused by the post-colonial state's inability to protect and improve the lives of its citizens without using ethnic and religious resources, power imbalances, and colonial legacies. However, integrating 4IR technologies into ethnoreligious conflict prevention and mitigation offers the government and stakeholders the chance to enhance early warning of emerging violence and prevention. Blockchain technology, big data analytics, and artificial intelligence can assist the government and stakeholders to predict upheavals by monitoring sociopolitical developments. Considering this, we should establish a specialised centre that focuses on early warning and response and employs analytical methods to identify emerging violence before crises worsen. This will assist the government and stakeholders in addressing public complaints efficiently. More specifically, there is a need to partner with local and national civil society organisations and academic institutions to ensure that different perspectives inform responses while improving the government's and stakeholders' sociopolitical understanding.

Keywords: 4IR, Ethno-religious conflict, Fanatics, Specialized centre, Violence.

Introduction

Conflicts are inevitable if states, societies, and individuals compete for resources that are scarce. Adenuga, Olajubu, Oyewole and Omotola (2023) observed that while political and social affiliations can alter, ethnoreligious affiliations are more lasting. Thus, ethno-religious conflicts have become complicated, intergenerational, protracted, and regionally entrenched. Lobell and

¹ Department of Sociology and Social Work, Faculty of the Social Sciences, National University of Lesotho, Roma. Email: ajahokoriebenjamin@gmail.com

² Department of Social Sciences, Walter Sisulu University, Mthatha, 5099, South Africa. Email: emekaobioha@gmail.com

³ Department of Sociology and Social Work, National University of Lesotho. Email: sophiathabane@gmail.com

⁴ Department of Sociology and Anthropology, Faculty of the Social Sciences, Enugu State University of Science and Technology, Agbani. Email: uche.ogbuke@esut.edu.ng

*Correspondence Author

Maurice (2004) traced the history of ethnoreligious conflict in Nigeria to European colonial tactics that favoured some ethnoreligious groups over others in power and wealth distribution and created artificial borders that united different people. These tactics have exacerbated historical animosities between different populations that were peacefully living before colonialism. Ever since Nigeria's independence, conflict and identity competition have threatened the progress and security of the country.

Canci and Odukoya (2016) noted that Nigeria is greatly divided along regional and ethnoreligious lines, which makes opposing groups often use an exclusionary winner-take-all mentality in attending to state affairs. Osaghae and Suberu (2005) observed that a country with such divisions is inherently unstable due to the absence of concord and convergence among its citizens. Instructively, the high rate of violent encounters among Nigerians is not surprising. Minority unrest, civil unrest, secessionist movements, and a breakdown of law and order are prevalent issues in Nigeria. Nigeria ranks high on Africa's list due to its persistent and protracted instability and wars. Since independence, state or regional illegitimacy crises have sadly plagued the country, hindering national cohesion, economic change, stability, and democratisation (Canci & Odukoya, 2016).

Nwankwo (2015) observed that looting by public officials and corruption have worsened and complicated all types of conflict and strife in the country. Corruption has made seething rage and political and socio-economic instability daily realities. The author further observed that corruption contributes to ethnoreligious conflict in Nigeria by causing a decline in social solidarity, high poverty rates, rising injustice, declining mutual tolerance, rising radicalism, and the revival of hatred and violence.

Though ethnoreligious conflict has become the subject of growing literature in Nigeria and beyond (see, for instance, Adenuga, Olajubu, Oyewole & Omotola, 2023; Ezeanya et al., 2022; Ezeanya et al. 2021; Ugwuoke, 2020; Ajah, 2020a; Ajah, 2020b; Anyanwu, 2019; Agbigbola, 2013; and Egwu, 2011), none of the studies has robustly discussed the integration of the Fourth Industrial Revolution (4IR) in addressing and preventing ethnoreligious conflict in Nigeria. This study fills this gap. In the words of Turner (2021), the 4IR combines biological, digital, and physical systems to efficiently improve communication and decision-making processes to redirect security, healthcare, and governance issues. It includes robotics, blockchain, IoT, big data analytics, and AI. The transformative opportunities offered by 4IR technologies can change the reactive approach of the Nigerian government and stakeholders to improve peace and harmony in the country. Big data analytics can evaluate massive volumes of news, social media, and other data to identify ethno-religious unrest, assisting the government and stakeholders in promoting discussions and resolving grievances.

D'Orazio and Lin (2022), and Corsi et al. (2021) found that taking a proactive approach to conflict resolution leads to a better understanding of the root causes of the conflict and the strengthening of community resilience, which supports long-term growth. Razzaq et al. (2019) asserted that blockchain technologies can enhance

governance accountability and transparency by addressing grievances that contribute to ethno-religious conflict. Undoubtedly, given the Nigerian government's and stakeholders' inability to respond reactively to ethno-religious conflict, 4IR technologies can enhance early warning and prevent it. Thus, this study aims to:

1. Find out causes of ethnoreligious conflict in Nigeria.
2. Investigate why ethnoreligious conflict persists in Nigeria, and
3. Interrogate the role of 4IR in addressing and preventing ethnoreligious conflict in Nigeria.

The conceptual discourse

Understanding the definitions of ethnicity, religion, and conflict is important before delving into the ethnoreligious conflicts in Nigeria.

Ethnicity: Many scholars have attempted to analyse and define ethnicity, which has led to the creation of numerous notions. According to Odeh (2010), an ethnic group is a group of people who share traditions that set them apart from others. These traditions share language, religion, origin, and ancestry. Ethnic groups refer to societies that share common cultures and languages. Chidi (2022) defines ethnicity as group identification. Ethnic identities shaped Nigerian politics, notably during colonial and post-colonial times.

Religion: Chidi (2022) defines religion as a social-cultural system that encompasses designated worldviews, beliefs, morals, behaviors, practices, ethics, texts, sanctified places, prophecies, or organizations that connect humanity to spiritual elements, transcendental, and supernatural realms. In Nigeria, religious intolerance has emerged as a significant issue that threatens the country's peace and harmony.

Conflict: Conflict, in the words of Brubaker (2015), arises whenever individuals have interests, needs, opinions, and values that are different, and they cannot find common ground. Chidi (2022) believes that conflict is part of civilization, regardless of its cause. It is not surprising that the author also noted that opposing agendas within groups, states, or societies frequently result in clashes.

Ethnoreligious conflict in Nigeria

While religion has shaped Nigeria's geopolitics and played a significant role in the country's life, it has also led to numerous conflicts. Obasi et al. (2024) and Enweonwu et al. (2021) have observed this phenomenon. Nigeria has had several religious conflicts and crises since independence. According to Canci and Odukoya (2016), ethnoreligious conflict is the most violent issue facing Nigeria due to its ability to spread quickly. A study by Osaghae and Suberu (2015) found that most of the ethnic and religious violence in Nigeria happens in culturally borderline areas in the north and middle belt, and between non-Muslim groups in the south and Hausa-Fulani people. The authors further noted that it is difficult to distinguish between ethnic and religious crises in Nigeria.

Anthony et al. (2021) noted that the ripple effects of the Kaduna and Jos ethnoreligious crises since 2000 and 2001, respectively, led to the death of thousands of Nigerians with billions of properties destroyed. Kura (2010) observed that in July 1999, Oro cultists in Sagamu, Ogun state, accused some Hausa women

of coming outside and peeping at them while they were outdoors with their gnomes. This accusation sparked an argument that resulted in the deaths of numerous Hausa and Yoruba people. The ripple effect sparked a retaliatory attack in Kano, which resulted in the deaths of numerous Christians of southern origin in Sagamu and the burning of their properties. The author also pointed out that a misunderstanding between Yoruba and Hausa Lagosians, sparked by a Hausa man's improper use of a convenience in the Idi-Araba/Oko-Oba part of Lagos in October 2000, led to numerous Yoruba deaths. The O'dua People Congress, a Yoruba militia group, aggravated the situation after the conflict expanded to Kano state from Lagos state.

In September 2001, a mistaken identity ignited an ethnic conflict between Tivs and Junkuns when some Tivs mistakenly killed 19 military troops, mistaking them for Junkuns disguised in fake army uniforms. The Nigerian military angrily launched brutal Saki-Biam reprisals that led to the deaths of over 100 individuals (Enukora, 2005).

Examining some of the causes of ethnoreligious conflict in Nigeria

Ethnic and religious components are prevalent in most social conflicts that have taken place in pre-independent and post-independent Nigeria. So, Nigerians face discrimination based on their religion or ethnicity at different times and levels. They also demand religious or ethnic rights in the states where they live, complain about discrimination that happened in the past and is happening now, and see how the government uses religion or ethnicity in politics (Salawu, 2010). Oshita, Alumona, and Onuoha (2019) observed that accusations of nepotism, marginalisation, discrimination, victimisation, dominance, exploitation, oppression, neglect, and intolerance are precursors of ethnoreligious violence in Nigeria.

Okpa, Ajah, Eze, and Enweonwu (2022) observed that the varied interests among different individuals and groups in Nigeria are watering the ground of ethnoreligious violence. Undoubtedly, the militancy of religious and ethnic movements in Nigeria has exacerbated divisions in faith, ethnicism, and politics. This has led to an increase in ethnoreligious conflicts throughout the country. The inability of Nigerian leaders to promote true economic success, forge national integration, and provide good governance through clear and intentional policies has significantly compounded the issues. Schutte, Ruhe and Linke (2022) observed that unemployment and poverty have the ability to create mercenary warriors who have the willingness to kill for little gain. The observation clearly explains the significant turnout of combatants during ethnoreligious crises in Nigeria.

Eze, Ajah, Okpa and Ngwu (2023) say that one reason for the rise in ethnoreligious violence in Nigeria is the breakdown of traditional African social control systems like religion, law, politics, education, and family. This is because the inability of various families to make ends meet, excessive alcohol intake, high rates of divorce, and broken homes create a large reservoir of youngsters who are used to executing ethnoreligious violence in Nigeria. Sadly, the inability of Nigeria's school system to impart sound information against ethnoreligious violence complicates the issue. An uncontrollable supply of arms has equally encouraged belligerents and accelerated hostilities in the country. In summary, as

noted by Ezeanya et al. (2023), ethnoreligious conflicts in Nigeria have historical roots. This is evident from the actions of the government in both pre-independence and post-independence Nigeria. Unfortunately, several events have politicised acrimony, violence, and mistrust between the predominantly Muslim North and the predominantly Christian South.

The role of 4IR in preventing and addressing ethnoreligious conflict in Nigeria

4IR technologies are improving communication, decision-making, and operational efficiency in many domains, including conflict situations and peace. Blockchain, big data analytics, and artificial intelligence can enable unprecedented prediction and monitoring of ethnic and religious disturbances. This can help prevent ethnic and religious conflicts before they happen. According to Kumari and Aggrawal (2022), predictive analytics utilises machine learning, algorithms, and statistical methods to assess both real-time and historical data, thereby identifying conflict trends and patterns. In this wise, the Nigerian government and stakeholders in Nigeria's ethnoreligious conflict can use predictive analytics to foresee emerging ethnoreligious conflict in the country. No wonder the worldwide model developed by Goemans et al. (2010) emphasises the role of political institutions in predicting emerging political instability. The nonlinear, five-category regime-type measure of the model can predict instability before it occurs.

Kallus (2014) observed that predictive algorithms can detect public opinion dynamics using massive datasets such as political mood, economic indicators, and social media activity. This shows that any mounting ethnoreligious conflict or spike in social media criticism can be analysed as a warning flag, and predictive analytics can analyse the actions. Predicting ethnoreligious unrest allows for prompt actions to be taken. Amoores (2022) noticed that using data from past conflicts can teach machine learning algorithms to correctly guess things like problems with government, drops in the economy, and big uprisings, which makes the algorithms more accurate over time. On this note, machine learning systems can detect events by identifying trends and emphasising them in large-scale data. Margineantu et al. (2010) argue that algorithms can find strange things going on in the political and social environment, and machine learning can find signs of conflict that can predict behaviour-based conflict.

Vasilakes et al. (2021) observed that AI's natural language processing (NLP) evaluates how humans and computers analyse behaviours. This suggests that NLP has the ability to analyse attitudes by assessing media tone, public attitudes, social media, and politics. Furthermore, we can use textual data, news, and social media for sentiment analysis (Revea, 2018). Social media sites like Facebook and Twitter can publicise sentiment. Inciting comments and sentiment posts can indicate social instability and popular opinion (Mullen & Malouf, 2006). Dorle and Pisse (2018) found that a long, short-term memory (LSTM) model with a recurrent neural network (RNN) can tell the difference between public opinion that is positive or negative. As for Bedi and Khurana (2020), they noted that a deep learning model like LSTM can improve the accuracy of predictions through making social media data better for social stability. This can empower essential stakeholders and the Nigerian government to anticipate crises ahead of time and implement necessary

measures to avert them, thereby fostering stability and resolving issues before they escalate into chaos.

Gao et al. (2022) noted that using governance data, economic indicators, social media platforms, and news outlets to process massive datasets assists in finding risk factors and correlations for unrest. This is due to the integration of various data streams, which provides a comprehensive sociopolitical picture. For instance, we can use economic metrics such as GDP growth, inflation, and unemployment to explain the economic causes of ethnoreligious conflicts. Big data analytics thus improves poverty mapping and prediction, indirectly affecting social stability. Researchers can forecast socioeconomic instability by integrating telephone and environmental data. Big data can therefore reveal ethnoreligious instability using this poverty-focused method. Recanatini (2018) reminds us that analysts can identify potential vulnerabilities by comparing press coverage, social emotion, and economic statistics. Social instability measurements and corruption indices reveal inherent and institutional concerns that lead to public discontent. Interestingly, big data can identify risk factors and connections, assisting Nigeria's government and stakeholders in anticipating and preventing ethnoreligious violence. This data-driven method can improve violence prevention by deepening understanding of dynamics that cause instability.

Geospatial analysis and satellite photography can track disturbance hotspots (Sticher, 2023; Levin et al., 2018). Satellite technology permits analysts to track changes in force deployments, infrastructure, and terrain by recording high-resolution photos of specified geographic areas. Thus, this virtual data can show violence hotspots, including ethnoreligious group formation, encampment, concentration, and vehicular movement. Satellite data can track the movement of violence perpetrators. Convergne and Snyder (2015) said that adding satellite images that use spatial analysis and show socioeconomic variables, historical conflict maps, and real-time information from different channels makes it more useful. As Suvarna et al. (2019) pointed out, analytical methods show connections between political events, the economy, the flow of local complaints and violent offenders, which helps analysts guess where flashpoints will happen. Advanced algorithms can quickly discover unexpected patterns through the evaluation of large-scale images. Nigeria's government and other interested parties can better handle ecclesiastical and religious conflicts if they use proactive monitoring to predict tense situations and step in before they get violent.

Blockchain technology can improve governance accountability and transparency, which can discourage ethnoreligious violence (Allen et al., 2018; Ines et al., 2017). Blockchain technology uses a decentralised, immutable ledger to transparently record government activities and transactions and prevent the unnecessary manipulation of data. Because, with blockchain technology, Nigerian citizens can verify the government's procedures independently, openness builds trust. Ogunlela et al. (2021) and Weingärtner (2021) observed that citizens can track government expenditures and contracts using blockchain, thereby reducing corruption in governance. Smart contracts automate and enforce compliance and

responsibility, ensuring proper allocation and use of funds. Real-time data access can engage and inform citizens, empowering them to demand more responsibility and transparency from their leaders and thereby strengthening democratic institutions. In other words, incorporating 4IR technology into the strategies used by the Nigerian government and those involved in preventing and managing ecclesiastical and religious conflicts can enhance their ability to anticipate and monitor social unrest. We can use creative solutions and data-driven insights to better handle crises and address the key reasons of discontent that lead to ethnoreligious violence.

Suggestions on how to boost Nigeria's government and stakeholders capabilities in ethnoreligious conflict prevention and management

There is a need for an AI-driven early warning and response centre to better anticipate, manage, and mitigate emergencies. Nigeria's vulnerability to ethnoreligious violence and social instability highlights this need. The response to risks, analyses, and monitoring of violence can improve governance and social stability across Nigeria. Thus, the centre's capacity to give accurate and quick data-driven insights makes it important. According to Lahmood and Mutlak (2024); and Osee (2024), this involves identifying anomalies and patterns that could potentially indicate future conflicts or disasters, thereby facilitating preventive measures and management. The centre should be obligated to analyze massive datasets, such as social mood, economic statistics, and social media, to identify governance trends and public opinion that may show mounting discontent. This can assist the government to engage stakeholders, intervene early, and resolve issues. We equally expect the centre to enhance coordination among various states and local governments in Nigeria through collaboration and information sharing. Integrated methods can inform various local governments and states about emerging conflict, thereby enabling a collaborative response to instability. Natural language processing can assess public opinion and identify triggers of unrest.

To assess, monitor, and mitigate potential violence across the country, the government needs an index platform. This will assist the integration, governance, and social stability of the country. The struggle of the government to combat ethnoreligious violence, the historical context of ethnoreligious violence in Nigeria, and the potential benefits of such a platform demonstrate the need for such an index. Kodero (2023) noted that the index could detect trends and patterns of social unrest and track violent activities to guide conflict resolution policy and peacekeeping efforts. It goes without saying that the index will improve the country's good governance and social stability, both of which are essential for the country's development and the social integration in Nigeria. Furthermore, enhancing data analysis and sharing partnerships can aid in the prediction and mitigation of violence.

In this connection, integrating 4IR technologies into Nigeria's peace and security architectures can assist early detection of conflict signs. Stakeholder participation and data exchange are necessary for the 4IR technologies to function, as noted by Ibeneme et al. (2021). Partnerships can improve data analytics and access to address violence and conflict issues. Numerous economic and

sociopolitical factors contribute to violence, making it crucial to address them. Additionally, the government can develop and integrate a data ecosystem that facilitates collaborative analysis and swift information exchange. Academic institutions, and governmental and non-governmental organisations must collaborate to exchange knowledge on data analysis. The government and stakeholders in violence prevention and mitigation can use public opinion, economic indicators, and social media trends to evaluate the sociopolitical scene, thereby building trusting and transparent social networks in the country. Engaging civil society organisations in various states and local governments of Nigeria is crucial as they possess knowledge of governance challenges and public opinions in their areas.

Blockchain and cloud computing have the potential to enhance the efficient sharing of security data. To accomplish this, we should conduct capacity building and training programs to assist states and local governments in understanding the data. Training local and state authorities in the ethical use of 4IR technologies can improve social stability. Predictive analytics for socio-political dynamics, data analysis, and interpretation should prioritize capacity-building activities, as this will aid officers in identifying and responding to unrest promptly. Deploying 4IR technologies will enhance the rights of citizens, responsibility, and transparency through ethical training. Officials can establish community trust by understanding the consequences of their actions and reducing abuse. Investing in capacity training and the ethical use of 4IR technologies can assist local and national leaders in promoting sustainable development, promoting democratic resilience, and preventing ethno-religious violence in the country. Furthermore, the implementation of human rights, accountability, and transparency will guarantee the appropriate use of 4IR technologies. Equally, when we use 4IR tools ethically, we can build effective engagement with stakeholders and Nigerian citizens through community trust, identify violence, promote social stability, and strengthen governance.

Avoiding ethnoreligious violence using 4IR technologies requires gathering appropriate data and using it to promote democracy and protect civil liberties. We must prioritise ethics, accountability, and transparency to establish clear data guidelines and practises. This includes ensuring collected data serves public interests without invading privacy and collecting data with informed consent. Therefore, we expect the government and stakeholders, who strive to prevent and mitigate ethnoreligious violence, to restrict data gathering to the prediction and reduction of ethnoreligious violence to avoid widespread surveillance. We must address data and algorithm biases when using 4IR technologies for ethno-religious violence prevention and mitigation. Mayson (2019) and Kirkpatrick (2017) noted that predictive analytics algorithms, when trained on biased data, can reinforce prejudices. This can undermine social stability and democratization initiatives, and it can worsen social tensions by affecting certain communities disproportionately. Datasets must be inclusive and representative of varied groups—thereby reflecting the socio-political landscape—to reduce risk.

The participation of the community and dialogue will assist citizens in understanding the essence of gathering data on ethnoreligious violence and its benefits for society. The government and stakeholders, who are focused on preventing and mitigating ethno-religious violence, can use 4IR technologies to reduce discriminatory threats and surveillance, while also promoting human rights and ethics. This approach can enhance government-citizen trust, ensuring that the advancements of 4IR technologies promote social cohesion and democracy. We must evaluate and continuously monitor the outcomes of algorithms to uncover and correct biases. Observance of ethical algorithm development and deployment ensures the promotion of accountability and transparency, and 4IR technologies benefit the general public without marginalizing vulnerable populations.

Instructively, the use of 4IR technologies in ethnoreligious conflict prevention should not widen digital divisions. This is because unequal access to 4IR technologies can widen gaps between socioeconomic classes and between rural and urban locations. We should prioritize technology and digital literacy measures to prevent and mitigate this issue. This entails persistently lobbying governments to guarantee residents' access to digital and internet tools through infrastructure investments in underserved areas. Constant training programs should equip local populations to use these technologies. Involving local and national civil society organisations is crucial to give voice to the marginalised populations. The inclusive plan can make the society more equitable and resilient, boost economic growth, foster social cohesion, and reduce the digital divide.

Methodology

Research design

This qualitative study examines how 4IR can address ethnoreligious conflict in Nigeria using secondary data. Due to the impracticality of conducting experiments to prove 4IR's efficacy in addressing ethnoreligious violence and its complexity in Nigeria, qualitative insights from secondary sources were used to draw reliable and perceptive policy conclusions. According to Obasi et al. (2024), this qualitative approach helps us to dig deeper into existing literature, reports, and historical documents from a database to find the stories behind the link between religion and violence and come up with 4IR solutions in Nigeria.

Data sources

For this study, we carefully gathered data from several secondary sources. We chose these sources based on their credibility, relevance, and ability to give us a full picture of the research topic in Nigeria, considering things like scope, data availability, and reliability. Sources include:

Academic journals and books: We consulted peer-reviewed articles and scholarly books to provide theoretical frameworks and academic perspectives on ethnoreligious violence and 4IR. We selected these sources to anchor the research in established scholarly discourse.

Government reports: We examined Nigerian government reports on ethnoreligious violence to understand its policies, actions, and narratives. These documents provide authoritative insights into government responses and tactics.

NGO and international organization reports: We examined external opinions and initiatives on ethnoreligious violence and 4IR in Nigeria using NGO and UN reports. We selected these sites to contextualise and highlight international efforts.

Media articles: We examined news and opinion pieces to understand Nigerian ethnoreligious violence discourse, incidents, and patterns. We selected media sources that mirror current social events.

Historical documents and archives: We researched Nigerian history to understand ethnoreligious violence and its legitimisation. These materials were chosen to provide historical background and illustrate how previous events impact current reality.

Data collection and analysis

We collected the data by searching academic databases, government archives, and online repositories. We conducted a literature search using keywords such as "violence in Nigeria," "4IR technologies," and "religion and conflict." We carefully analysed the data, collected significant material, and categorised it into subject areas, including 4IR technologies' responsibilities in addressing ethnoreligious conflict, religious violence's historical context, and community effects.

Ethical considerations

This study uses secondary data; therefore, source reliability and correctness were the main ethical concerns. We cross-referenced the data and rigorously analysed each source's credibility to avoid prejudice and ensure objectivity. We properly mentioned all sources for academic integrity.

Conclusion

Ethno-religious violence has increased enmity among Nigerians. This could be because of its ability to erode out-group trust while improving in-group cohesion. The inability of post-colonial states to foster the security and prosperity of their citizens without bias, ethnoreligious resources, power distributions, and colonial legacies is the root cause of this violence. According to Adengua et al. (2023), Nigeria has experienced 117 ethnoreligious conflicts, which have resulted in 2,420 deaths; 3,703 religious conflicts, which have resulted in 29,957 deaths; and 2,811 ethnic conflicts, which have resulted in 18,132 deaths, since the start of the current fourth republic. These disputes have affected the worldwide image, security, development, social integration, national unity, sociopolitical stability, lives, and properties of the Nigerian citizens. However, integrating 4IR technologies into ethnoreligious conflict prevention and mitigation offers the government and stakeholders the chance to enhance early warning of emerging violence and prevention. Blockchain technology, big data analytics, and artificial intelligence can assist the government and stakeholders to predict upheavals by monitoring sociopolitical developments. Considering this, we should establish a specialised centre that focuses on early warning and response and utilises analytical methods to identify emerging violence before crises worsen. This will assist the government and stakeholders in addressing public complaints efficiently. Partnerships with local and national civil society organizations and academic institutions will ensure that

different perspectives inform responses by improving the government's and stakeholders' socio-political understanding.

References

- Adenuga, G., Olajubu, A., Oyewole, S., & Omotola, J. S. (2023). Ethno-religious Conflicts and the Challenges of National Security in Nigeria's Fourth Republic. *South African Review of Sociology*, 53(2), 130–149. <https://doi.org/10.1080/21528586.2023.2233462>
- Agbiboa, D. E. (2013). Ethno-religious conflicts and the elusive quest for national identity in Nigeria. *Journal of Black Studies*, 44 (1), 3–30. doi:10.1177/0021934712463147
- Aifen, A. ., Ma, A. ., & Khan, I. (2025). Research on the Jurisprudence and Practice of International Disaster Relief. *Review of Law and Social Sciences*, 3(1), 125-137. <https://doi.org/10.71261/rlss/3.1.125.137>
- Ajah, B. O., Dinne, C.E., & Salami, K. K. (2020a). [Terrorism in contemporary Nigerian society: conquest of Boko-Haram, myth or reality.](#) *International Journal of Criminal Justice Sciences*, 15(1), 312-324.
- Ajah, B. O., Ajah, A.I., & Obasi, C. O. (2020b). [Application of virtual reality \(VR\) and augmented reality \(AR\) in the investigation and trial of herdsmen terrorism in Nigeria.](#) *International Journal of Criminal Justice Sciences*, 15(1), 1-20.
- Allen, D. W., Berg, C., & Novak, M. (2018). Blockchain: an entangled political economy approach. *Journal of Public Finance and Public Choice*, 33(2), 105–125. <https://doi.org/10.1332/251569118x1528211163993>
- Amoore, L. (2022). Machine learning political orders. *Review of International Studies*, 49(1), 20–36. <https://doi.org/10.1017/s0260210522000031>
- Anthony, E.O., Obasi, C.O., Obi, D.O., Ajah, B. O., Okpan, O.S., Onyejebu, C.D. et al., (2021). Exploring the reasons for perennial attacks on churches in Nigeria through the victims' perspective. *HTS Teologiese Studies/Theological Studies*, 77(1), a6207.
- Anyanwu, T. C. 2019. Ethno-religious conflicts and nation building in Nigeria. *Journal of Nation-Building & Policy Studies*, 3 (1), 61–74. doi:10.31920/2516-3132/2019/3n1a4.
- Bedi, P., & Khurana, P. (2019). Sentiment analysis using fuzzy-deep learning. In *Lecture notes in electrical engineering* (pp. 246–257). https://doi.org/10.1007/978-3-030-30577-2_21
- Brubaker, R. (2015). *Grounds for difference*. London: Harvard University Press.
- Chidi, S. O. (2022). Ethno-religious conflicts in Nigeria (2015-2021): implications for national security. *NIJPCR*, 2(2), 264-279.
- Convergne, E., & Snyder, M. R. (2015). Making maps to make peace: geospatial technology as a Tool for UN Peacekeeping. *International Peacekeeping*, 22(5), 565–586. <https://doi.org/10.1080/13533312.2015.1094193>
- Corsi, A., de Souza, F. F., Pagani, R. N., & Kovaleski, J. L. (2021). Big data analytics as a tool for fighting pandemics: a systematic review of

-
- literature. *Journal of ambient intelligence and humanized computing*, 12(10), 9163–9180. <https://doi.org/10.1007/s12652-020-02617-4>
- D’Orazio, V., & Lin, Y. (2022). Forecasting conflict in Africa with automated machine learning systems. *International Interactions*, 48(4), 714–738. <https://doi.org/10.1080/03050629.2022.2017290>
- Dorle, S., & Pise, N. (2018). Political sentiment analysis through social media. *NA*. <https://doi.org/10.1109/iccmc.2018.8487879>
- Enukora, L.O. (2005). Managing ethno-religious violence and area differentiation in Kaduna metropolis. In: Yakubu, Alhaji M., R.T. Adegboye, C.N. Ubah and B. Dogo eds. *Crisis and conflict management in Nigeria since 1980*. Vol. II. Kaduna, Nigerian Defense Academy. pp. 610–635.
- Enweonwu, O. A., Ugwu, I. P., Onyejebu, D. C., Areh, C. E., & Ajah, B. O. (2021). Religious fanaticism and changing patterns of violent Crime in Nigeria. *International Journal of Criminology and Sociology*, 10, 1378–1389. <https://doi.org/10.6000/1929-4409.2021.10.158>
- Eze, O.J., Ajah, B.O., Okpa, J.T., Ngwu, G. E. (2023). Ethnic-based violence: Nigeria perspectives. In: Martin, C., V. R. Preedy and V. B. Patel (Eds), *Handbook of anger, aggression, and violence*. Springer, Cham. https://doi.org/10.1007/978-3-030-98711-4_182-2
- Ezeanya, O.C.P., Ajah, B. O., Okpa, J.T., Chinweze, U. C., Onyejebu, D.C., Enweonwu, O. A., & Obiwulu, A. C. (2023). Elite complicity in the non-egalitarian structures, occasioning violence and anarchy in the Nigerian State. *African Renaissance*, 20(1), 77-92.
- Ezeanya, O.C.P., Ajah, B. O., Ibenwa, C.N., Onuorah, C. & Eze, U. (2022). A critical analysis of the impact of religion on the Nigerian struggle for nationhood. *HTS Teologiese Studies/Theological Studies*, 78(4), a7225. <https://doi.org/10.4102/hts.v78i4.7225>.
- Ezeanya, O. C. P. & Ajah, B. O. (2021). Addressing the biblical and ecclesial obligation of Nigerian Roman-Catholic priests in promotion of peace and social justice. *HTS Teologiese Studies/ Theological Studies*, 77(4), a7138. <https://doi.org/10.4102/hts.v77i4.7138>
- Gao, M., Li, L., & Gao, Y. (2022). Statistics and analysis of targeted poverty alleviation information integrated with big data mining algorithm. *Security and Communication Networks*, 1–10. <https://doi.org/10.1155/2022/1496170>
- Ibeneme, S., Okeibunor, J., Muneene, D., Husain, I., Bento, P., Gaju, C., Housseynou, B., Chibi, M., Karamagi, H., & Makubalo, L. (2021). Data revolution, health status transformation and the role of artificial intelligence for health and pandemic preparedness in the African context. *BMC Proceedings*, 15(S15). <https://doi.org/10.1186/s12919-021-00228-1>
- Kallus, N. (2014). Predicting crowd behaviour with big public data. In Proceedings of the 23rd International Conference on World Wide Web (WWW '14 Companion). Association for Computing Machinery, New York, NY, USA, 625–630. Retrieved from <https://doi.org/10.1145/2567948.2579233>

- Kodero, C. (2023). Rethinking african regionalism: assessing how regimes use the African Union. *Journal of Global South Studies*, 40(2), 383–417. <https://doi.org/10.1353/gss.2023.a917370>
- Kumari, L. K., & Aggrawal, D. R. (2022). An insight into predictive analytics techniques. *International Journal For Science Technology And Engineering*. <https://doi.org/10.22214/ijraset.2022.48071>
- Kura, K. H. (2010). Muslim-Christian cooperation for conflict prevention/management, peace building and reconciliation in Northern Nigeria. A paper delivered at a conference on Muslim-Christian Cooperation...in...states of Nigeria. 6th-9th Oct. 2010, Kaduna, PCMRA. Retrieved from https://www.procmuraprica.org/files/Kaduna_Report.pdf?
- Lahmood, F. A., & Mutlak, D. J. (2024). Early warning system means and tools in the african union and the organization of American states: An analytical study. *Journal of Ecohumanism*, 3(4), 1964–1971. <https://doi.org/10.62754/joe.v3i4.3730>
- Levin, N., Ali, S., & Crandall, D. (2018). Utilizing remote sensing and big data to quantify conflict intensity: The Arab Spring as a case study. *Applied Geography*, 94, 1–17. <https://doi.org/10.1016/j.apgeog.2018.03.001>
- Lobell, S. E., & Maurice, P. (2004). Diffusion and escalation of ethnic conflict.” In *ethnic conflict and international politics: explaining diffusion and escalation*, edited by S. E. Lobell, and P. Maurice, 1–11. New York: Palgrave Macmillan.
- Margineantu, D. D., Wong, W., & Dash, D. (2010). Machine learning algorithms for event detection. *Machine Learning*, 79(3), 257–259. <https://doi.org/10.1007/s10994-010-5184-9>
- Mayson, S. G. (2019). Bias In, Bias Out. *The Yale Law Journal*, 128(8), 2218. https://digitalcommons.law.uga.edu/cgi/viewcontent.cgi?article=2293&context=fac_artch_op
- Mullen, T., & Malouf, R. (2006). A preliminary investigation into sentiment analysis of informal political discourse. *National Conference on Artificial Intelligence*, 159–162. <http://edu.tsuda.ac.jp/~mullen/Papers/AAAI2006.pdf>
- Nwankwo, B. O. (2015). Rhetorics and realities of managing ethno-religious conflicts: The Nigerian experience. *American journal of educational research*, 3 (3), 292–300. Retrieved from: <<http://pubs.sciepub.com/education/3/3/7/#>>
- Obasi C. O., Igbo, P., Onyenali, R., Enweonwu, O. A., Onyejegbu, D. C., Isife, C. T., Nwonovo, O. S., & Ajah, B. O. (2024). Religion and Legitimization of Violence in Nigeria: Towards Peace Education. *African Journal of Religion, Philosophy and Culture (AJRPC)*, 5(2), 133-150. DOI: <https://doi.org/10.31920/2634-7644/2024/v5n2a8>
- Ogunlela, O., Olabode, O., & Robertson, T. (2021). Blockchain technology as a panacea for procurement corruption in digital era. *International Journal of Research in Business and Social Science (2147-4478)*, 10(4), 311–320. <https://doi.org/10.20525/ijrbs.v10i4.1222>

- Okpa, J. T., Ajah, B. O., Eze, O. J., & Enweonwu, O. A. (2022). Communal conflict and violence: Causes and impact. In C. Martin, V. R. Preedy and V. B. Patel (eds) *Handbook of Anger, Aggression, and Violence*. Springer, Cham. https://doi.org/10.1007/978-3-030-98711-4_184-1
- Ølnes, S., Ubacht, J., & Janssen, M. (2017). Blockchain in government: Benefits and implications of distributed ledger technology for information sharing. *Government Information Quarterly*, 34(3), 355–364. <https://doi.org/10.1016/j.giq.2017.09.007>
- Osaghae, E. E., & Suberu, R. (2005). A history of identities, violence, and stability in Nigeria. CRISE working paper No. 6. Oxford, Centre for Research on Inequality, Human Security and Ethnicity. Available from: <http://r4d.dfid.gov.uk/PDF/Outputs/Inequality/wp6.pdf>
- Osee, U. B. (2024). Integrating artificial intelligence: a step towards the african peace and security architecture. *International Journal of Social Science Humanity & Management Research*, 3(05). <https://doi.org/10.58806/ijsshmr.2024.v3i5n14>
- Oshita, O. O., Alumona, M. I., & Onuoha, C. F. (2019). *Internal security management in Nigeria*. Singapore: Palgrave Macmillan.
- Razzaq, A., Murad, M., Talib, R., Dawood, A., Hanif, N., Afzal, S., & Razeen, M. (2019). Use of Blockchain in governance: a systematic literature review. *International Journal of Advanced Computer Science and Applications*, 10(5). <https://doi.org/10.14569/ijacsa.2019.0100585>
- Recanatini, F. (2017). Understanding Governance and Corruption Using Survey Data: A Novel Approach and Its Applications in Policy and Research. In *Springer eBooks* (pp. 183–205). https://doi.org/10.1007/978-3-319-62707-6_8
- Rustagi, M., & Goel, N. (2022). Predictive Analytics: A study of its advantages and applications. *IARS International Research Journal*, 12(01), 60–63. <https://doi.org/10.51611/iars.irj.v12i01.2022.192>
- Salawu, B. (2010). Ethno-religious conflicts in Nigeria: causal analysis and proposals for new management strategies. *European Journal of Social Sciences*, 13(13), 345-353.
- Schutte, S., Ruhe, C., & Linke, A. M. (2022). How indiscriminate violence fuels conflicts between groups: Evidence from Kenya,” *Social Science Research*, 103, 102653.
- Sticher, V., Wegner, J. D., & Pfeifle, B. (2023). Toward the remote monitoring of armed conflicts. *PNAS Nexus*, 2(6). <https://doi.org/10.1093/pnasnexus/pgad181>
- Suvarna, A., D, A. S., Patel, B. K., K, C., & George, R. M. (2019). Automating enemy troop detection using image processing and machine learning. *International Journal of Engineering Research And*, 7(8). <https://www.ijert.org/research/Automating-Enemy-Troop-Detection-using-Image-Processing-and-Machine-Learning-IJERTCONV7IS08022.pdf>

- Turner, P. (2021). The fourth industrial revolution. In the making of the modern manager. Springer. <https://ideas.repec.org/b/spr/sprbok/978-3-030-81062-7.html>
- Ugwuoke, C. O., Ajah, B. O., & Onyejegbu, C. D. (2020). Developing patterns of violent crimes in Nigerian democratic transitions. *Aggression and Violent Behavior*, 53, 1-8.
- Vasilakes, J., Zhou, S., & Zhang, R. (2020). Natural language processing. In *Machine Learning in Cardiovascular Medicine* (pp. 123-148). Elsevier. <https://doi.org/10.1016/B978-0-12-820273-9.00006-3>
- Weingärtner, T., Batista, D., Köchli, S., & Voutat, G. (2021). Prototyping a smart contract based public procurement to fight corruption. *Computers*, 10(7), 85. <https://doi.org/10.3390/computers10070085>
- Yuliia, P. ., Al-Ababneh, H. A., & Symonenko, O. . (2025). The impact of globalisation on economic systems and social structures. *Dialogues in Humanities and Social Sciences*, 3(1), 63-72. <https://doi.org/10.71261/dhss/3.1.63.72>