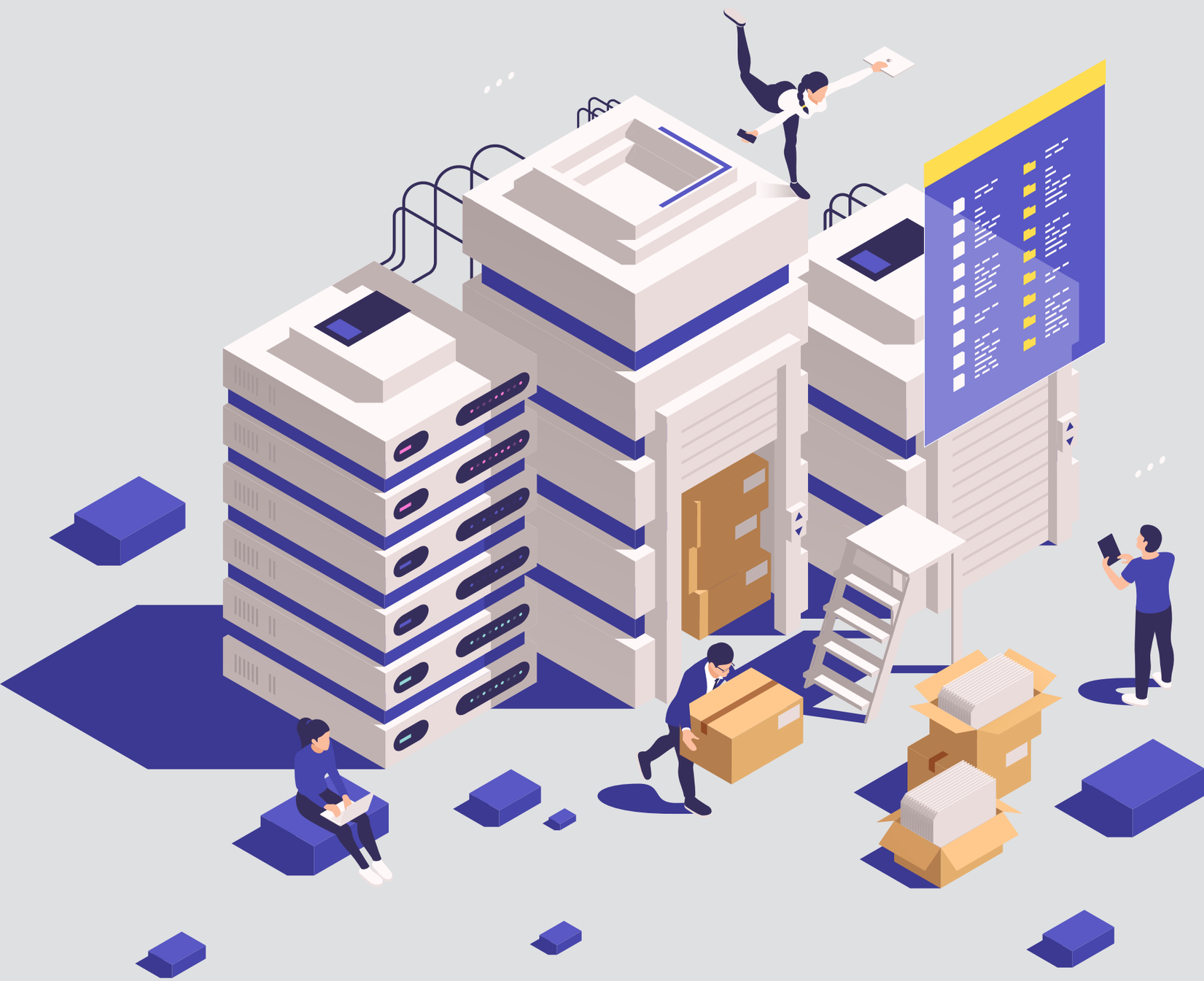
Towards Effective Data Governance in Africa

progress, initiatives & challenges



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Executive Summary

This desk review report provides an overview of data governance in Africa, exploring policy frameworks, implementation challenges, regional collaborations, capacity building, governmental initiatives, civil society engagement, and academia's role. The continent's increasing reliance on digital systems has spurred a surge in data production, necessitating robust governance frameworks. While progress is evident with the enactment of data protection laws and establishment of regulatory bodies, implementation challenges persist due to resource constraints and political complexities.

Regional collaborations within Africa, particularly among East African Community (EAC), Southern African Development Community (SADC), and Economic Community of West African States (ECOWAS), manifest a collective recognition of the importance of data governance. These collaborations offer guidance and promote policy enactments, shaping data protection laws and enhancing responsible data practices across member states.

Amidst the evolving data governance landscape, capacity building emerges as a critical aspect, spotlighting the need for nurturing skills in data management, analysis, and ethics. Challenges within educational infrastructure and workforce training gaps present barriers in fostering a skilled workforce capable of effective data governance practices.

Initiatives on data governance take on several forms notably through government endeavours such as the implementation of pivotal systems like the Health Management Information System, Integrated Revenue Administration System and Labour Market Information System among others. Furthermore, Civil Society Initiatives, including efforts from various organisations advocating for data privacy and open data, and initiatives in academia, such as Education Management Information Systems, significantly contribute to advancing ethical data practices and transparent data access.

Initiatives spearheaded by governments, civil society, academia, and regional collaborations showcase proactive efforts, emphasising the transformative potential of robust data governance policies and practices. Addressing challenges through focused capacity building and stakeholder engagement holds the key to unlocking data's full potential for informed decision-making across the continent.

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List of Abbreviations

AU:	African Union
AUDPC:	African Union Convention on Cyber Security and Personal Data Protection
CSOs:	Civil society organisations
DHIS2:	District Health Information System 2
DPA:	Data Protection Act
DPO:	Data Protection Office
DPPOs:	Data Protection and Privacy Offices
EAC:	East African Community
ECOWAS:	Economic Community of West African States
EITI:	Extractive Industries Transparency Initiative
EMIS:	Education Management Information System
HMIS:	Health Management Information System
ICT:	Information Communications Technology
IRAS:	Integrated Revenue Administration System
KLMIS:	Kenyan Labour Market Information System
NDPC:	National Data Protection Commission
ODC:	Open Data Charter
SADC:	Southern African Development Community
URA:	Uganda Revenue Authority
VHT:	Village Health Team

Introduction & Background

As African governments increasingly rely on digital systems to deliver better services to citizens, from healthcare and education to governance and commerce, the volume and complexity of data generated have surged.[1] This surge in data production, while reflective of a more interconnected and technologically -driven society, has brought to the forefront the pressing challenge of how to govern this wealth of data effectively. The ever increasing quantity of data being generated has posed challenges related to storage, security, and ethical use, necessitating robust data governance frameworks.

Data governance refers to the formulation and implementation of policies, procedures, and standards that govern how data is collected, stored, processed, accessed, shared, and protected.[2] A data governance framework is a set of policies, processes, and roles that define how an entity manages and controls its data. Data governance frameworks ensure the availability, integrity, quality, and security of data, while maximising its value and usefulness for organisations as well as promoting effective data utilisation and compliance with relevant regulations and policies.[3]

In Africa, data governance frameworks are still in their early stages of development.[4] The adoption rate of laws on data protection and privacy by countries in the African region stands at 61 percent, although it remains lower compared to other global regions such as the Americas at 74 percent and Europe which is at 98 percent.[5] A number of African countries have enacted data protection laws, and frameworks. As of February 2023, 36 out of 54 African nations had established laws or regulations dedicated to safeguarding data.[6] Furthermore, 16 countries had endorsed the African Union Convention on Cyber Security and Personal Data Protection (AUDPC), commonly known as the "Malabo Convention," which was adopted on 27th June 2014. Among these signatories, 13 countries, including the latest addition of Niger, have ratified this convention.[7] The Malabo Convention stands as a testament to the collective determination of African countries to align data protection efforts.[8] While Uganda has signed the Malabo Convention, the process of ratification remains pending. To achieve this, Uganda would need to enact legislation that aligns with the convention's provisions.[9] The implementation of the Malabo Convention faces various challenges that span legal, regulatory, technical, infrastructural, capacity building, and harmonisation aspects.[10] The continent's diverse legal systems and traditions, encompassing civil, common, customary, and religious laws, present a labyrinth of approaches to data privacy and protection.[11] This diversity complicates the harmonisation of data protection laws across nations, necessitating the reconciliation of national laws with the provisions of the Malabo Convention.

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[1] Denis, B. (2021). The rise of Africa's digital economy. European Investment Bank. https://www.eib.org/attachments/thematic/study_the_rise_of_africa_s_digital_economy_en.pdf

[2] Abraham, R., Schneider, J., & Vom Brocke, J. (2019). Data governance: A conceptual framework, structured review, and research agenda. International journal of information management, 49, 424-438.

[3] Stedman, C. (2022, May). What Is Data Governance and Why Does It Matter? SearchDataManagement.https://www.techtarget.com/searchdatamanagement/definition/data-governance#:~:text=Data%20governance%20(DG)%20is%20the

[4] Ndemo, B., & Thegeya, A. (2023). A Prototype Data Governance Framework for Africa. Springer EBooks, 9–29. https://doi.org/10.1007/978-3-031-24498-8_2

[5] UNCTAD. (2023). Data Protection and Privacy Legislation Worldwide | UNCTAD. Unctad.org; United Nations Conference on Trade and Development. https://unctad.org/page/data-protection-and-privacy-legislation-worldwide#:~:text=137%20out%20of%20194%20countries

[6] Sylla, H. L.-A. (2023, February 24). Recent developments in African data protection laws - Outlook for 2023. Lexology. https://www.lexology.com/library/detail.aspx?g=baef72ee-10bd-4eb9-a614-a990c236bb45#:~:text=To%20date%2C%20thirty%20six%20out

[7] Sylla, H. L.-A. (2023, February 24). Recent developments in African data protection laws - Outlook for 2023. Lexology. https://www.lexology.com/library/detail.aspx?g=baef72ee-10bd-4eb9-a614-a990c236bb45#:~:text=To%20date%2C%20thirty%20six%20out

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[9] Unwanted Witness. (2021, November 17). Malabo Convention: African Data Regulators call for Action. Unwanted Witness. https://www.unwantedwitness.org/malabo-convention-african-data-regulators-call-for-action/

[10] Aly Bouke, M., Alshatebi, S., Abdullah, A., Cengiz, K., & Atigh, H. (n.d.). African Union Convention on Cyber Security and Personal Data Protection: Challenges and Future Directions. Retrieved September 27, 2023, from https://arxiv.org/ftp/arxiv/papers/2307/2307.01966.pdf

[11] Ibid

The African Union (AU) has also set forth a transformative vision through the Digital Transformation Strategy for Africa (2020-2030).[12] A cornerstone of this strategy, the AU's Data Policy Framework 2022, serves as an instrumental guidepost for fostering comprehensive data governance and management practices across the continent.[13] The AU Data Policy Framework 2022 outlines principles and best practices for data collection, storage, sharing, and utilisation to ensure data is utilised responsibly and ethically.[14] Notably, the prevailing data governance frameworks lean more towards promoting safeguards such as data protection and privacy, with less emphasis on enabling aspects like data portability and localization, both of which are integral.[15] However, implementing these frameworks poses a significant challenge. Regulatory institutions tasked with overseeing data governance have not adapted sufficiently to the evolving demands of the digital landscape.[16] The prevailing regulatory inertia and capacity limitations, common in broader governance structures across Africa, are vividly reflected in the implementation of data governance frameworks.[17] This challenge is compounded by the constraints in human and financial capacity within regulatory agencies.

Additionally, the complex political economy of individual African states remains the biggest challenge for the implementation of the data governance policy frameworks at country level. Issues of data governance and data protection and democratisation of data have become highly contentious of late.[18] Many AU Member States still have challenges with political democracy. Many have shut down the internet, for example, during presidential elections.[19] Such nations might find some of the progressive pronouncements and recommendations of the Policy Frameworks such as the Africa Data Policy Framework a bit too much of an ask.

Domestic funding for data and digital infrastructure is also limited in most African countries and any prioritisation of fiscal spending at national level has not put data governance and the digital ecosystems at the top.[20] All these have left digital regulators, data protection authorities, national statistics agencies, revenue and border authorities, data rights and privacy advocates, with less resources at their disposal to use to adapt to, and adopt the data governance frameworks.

Additionally, many African nations still lack comprehensive legal structures for data protection. Even in cases where such frameworks exist, enforcing them can be quite challenging.[21] Still, it's common for technology to outpace regulations, resulting in harm to communities before legal intervention.[22]

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[12] African Union. (2022). AU DATA POLICY FRAMEWORK An Integrated, Prosperous and Peaceful Africa. https://au.int/sites/default/files/documents/42078-doc-AU-DATA-POLICY-FRAMEWORK-ENG1.pdf

[13] Collaboration on International ICT Policy for East and Southern Africa (CIPESA). (2022). The Africa Union Data Policy Framework published in July 2022 is one of the most significant instruments on data governance on the continent. Developed by the African Union (AU) Commission in consultation with partners inside and outside the AU ecosystem, the Policy Framework was endorsed by the AU Executive Council in February. https://cipesa.org/wp-content/files/briefs/Five_Takeaways_From_the_2022_African_Union_Data_Policy_Framework_Brief.pdf

[14] AU. (2022). AU DATA POLICY FRAMEWORK An Integrated, Prosperous and Peaceful Africa.https://au.int/sites/default/files/documents/42078-doc-AU-DATA-POLICY-FRAMEWORK-ENG1.pdf

[15] Adeniran, A. (2022, March 21). Developing an effective data governance framework to deliver African digital potentials. Brookings. https://www.brookings.edu/articles/developing-an-effective-data-governance-framework-to-deliver-african-digital-potentials/#:~:text=State%20of%20data%20governance%20in%20Africa&text=Between%202012%20and%202021%2C%20the

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[17] Adeniran, A. (2022, March 21). Developing an effective data governance framework to deliver African digital potentials. Brookings. https://www.brookings.edu/articles/developing-an-effective-data-governance-framework-to-deliver-african-digital-potentials/#:~:text=State%20of%20data%20governance%20in%20Africa&text=Between%202012%20and%202021%2C%20the

[18] CIPESA. (2022). Five key takeaways from the The Africa Union Data Policy Framework. In Collaboration on International ICT Policy for East and Southern Africa. https://cipesa.org/wp-content/files/briefs/Five_Takeaways_From_the_2022_African_Union_Data_Policy_Framework_Brief.pdf

[19] Stremlau, N., & Dobson, N. (2022). Information Controls and Internet Shutdowns in African Elections: The Politics of Electoral Integrity and Abuses of Power. Journal of African Elections, 21(2), 1–22. https://doi.org/10.20940/jae/2022/v21i2a1

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[21] Bryant, J. (2021) Africa in the Information Age: Challenges, Opportunities, and Strategies for Data Protection and Digital Rights. 24 STAN. TECH. L. REV. 389 https://law.stanford.edu/wp-content/uploads/2021/05/BryantAfricaInTheInformationAge.pdf

[22] Muthoni, K, (2018) Blow to CA Court Blocks Plan to Snoop into Mobile Phones Conversations, STANDARD (Apr. 20, 2018), https://perma.cc/66PA-S5JW.

Regional Collaborations

Regional collaborations have emerged as pivotal frameworks fostering collective efforts among neighbouring nations to address data governance common challenges and pursue shared objectives. For instance the Southern African Development Community (SADC) which encompasses sixteen countries across southern and central Africa, including Indian Ocean states, eleven of these nations have already established data protection laws. These include Angola, Lesotho, Tanzania Madagascar, Mauritius, Seychelles, South Africa, Zambia, Botswana, Eswatini and Zimbabwe, while two have ongoing Bills (Namibia, Malawi).[23] Efforts have been initiated towards formulating SADC-wide data protection laws and policies. The SADC Model Law on Data Protection serves as a foundational step in this endeavour. This law emerged from the necessity to create unified policies within the Sub-Saharan region.[24] Notably, this legislation, while not legally binding on member states, serves as a guiding framework for data protection legislation. It mandates data transfers only between SADC members or non-members with adequate data mechanisms but does not detail the criteria for assessing such adequacy.[25] Additionally, the law lacks specific definitions crucial to data protection such as pseudonymization, data subject, access, and request.[26]

Regarding the Economic Community of West African States; ECOWAS, it was formed to foster regional collaboration among member states, primarily focusing on economic advancement.[27] In 2010, the Supplementary Act A/SA.1/01/10 was introduced within ECOWAS to regulate data protection across these member states.[28] However, this Act also lacks crucial terminologies such as processing, pseudonymization, personal data breach, cross-border transfer, and rights regarding complaints to regulators or data portability. This absence could pose significant challenges when resolving issues related to cross-border data processing and conflicts between decisions made by different national Data Protection Authorities (DPAs). Additionally, the Act limits the transfer of personal data beyond the ECOWAS sub-region only to countries that guarantee an adequate level of fundamental protection, potentially impacting data exchange beyond this area. Nevertheless, member states that have adopted data protection laws include Benin, Burkina Faso, Cape Verde, Ghana, Ivory Coast, Niger, Nigeria, Senegal and Togo.

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[23] UNCTAD. (2023). Data Protection and Privacy Legislation Worldwide | UNCTAD. Unctad.org; United Nations Conference on Trade and Development. https://unctad.org/page/data-protection-and-privacy-legislation-worldwide#:~:text=137%20out%20of%20194%20countries

[24] Ferreira, C. (2021). Harmonisation of Data Protection Regimes in the Southern African Development Community: Considering the influence of the SADC Model Law on Data Protection and the European Union on data protection laws in SADC (Master's thesis, Faculty of Law).

[25] Ibid

[26] Babalola, O. (2022). . Context Legal regime of data protection and data governance in Africa POLICY BRIEF Data Protection Legal Regime and Data Governance in Africa: An Overview. https://africaportal.org/wp-content/uploads/2023/06/DG003.pdf

[27] Aworawo, F. (2020). Economic Community of West African States: A Trajectory in Regional Integration. Ihafa: A Journal of African Studies, 11(1), 24-43.

[28] Agelebe, D. (2020). Implementation of the ECOWAS supplementary act on personal data protection: Lessons from the EU GDPR. Journal of Data Protection & Privacy, 4(1), 34-51

In the East African region, governments are recognizing the importance of robust data governance frameworks to effectively manage data, protect privacy, and foster responsible data use by increasingly enacting data protection laws. The East African Community (EAC) also embarked on establishing a Legal Framework for Cyber laws in 2008, aiming to foster collaborative policies among its member states.[29] This initiative sought to enhance cooperation and alignment in navigating the complexities of cyber-related regulations and data governance within the region. While acknowledging its progressive stance on data protection, it's important to note that these provisions are not binding on member states, offering only guidance. This framework, albeit indirectly, influenced subsequent data protection legislation in Kenya, Uganda, Tanzania and Rwanda, inspiring these countries to pass their own legislations on the subject. For instance, countries like Kenya enacted the Data Protection Act of 2019 to regulate the processing of personal data and ensure transparency in data handling practices.[30] This has not only enhanced Kenyan citizens' confidence in how their personal data is handled but has also fostered trust between consumers and businesses. However, numerous entities in Kenya have not yet initiated the implementation of the Data Protection Act (DPA) of 2019. Many local entities are facing data protection laws for the first time and lack sufficient financial, human resources, and technical capabilities to ensure compliance and establish effective data protection compliance frameworks.[31]

In Tanzania, the Personal Data Protection Act 11 of 2022 came into effect in May 2023, marking a significant step forward for data protection.[32] This signifies a noteworthy stride in data protection in that businesses in Tanzania have began fine-tuning their data management systems, prioritising privacy controls, thereby creating a conducive atmosphere for business growth while ensuring individuals' data remains safeguarded.[33] Nevertheless, Tanzania grapples with limited capacity within law enforcement agencies, particularly concerning the protection of data in the digital realm.[34]

Other East African countries like Rwanda also gazetted Law No 058/2021 of 13/10/2021 relating to the protection of personal data and privacy on October 15th, 2021.[35] Rwanda, through its Law No 058/2021, has significantly strengthened personal data protection and privacy of individual users, encouraging greater participation in digital services and fostering increased trust between consumers and companies.

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[29] Greenleaf, G., & Cottier, B. (2022). International and regional commitments in African data privacy laws: A comparative analysis. Computer Law & Security Review, 44, 105638.
[30] One Trust DataGuidance . (2023, March 8). Kenya - Data Protection Overview. DataGuidance. https://www.dataguidance.com/notes/kenya-data-protection-overview
[31] Soko. (2022, February 2). Capacity Challenges Hindering Implementation Of Data Protection Law. Soko Directory. https://sokodirectory.com/2022/02/capacity-challenges-hindering-implementation-of-data-protection-law/
[32] Kitcat, R., and Mmasi, C. F., (2023) Tanzania: Regulations Made Under The Personal Data Protection Act 2022. https://bowmanslaw.com/insights/data-protection/tanzania-regulations-made-under-the-personal-data-protection-act-2022/
[33] Ibid
[34] CIPESA, (2022) Data Governance Regulation in Tanzania: Gaps, Challenges and Opportunities https://cipesa.org/wp-content/files/documents/Data-Governance-Regulation-in-Tanzania-Gaps-Challenges-and-Opportunities.pdf
[35] Greenleaf, G., & Cottier, B. (2022). International and regional commitments in African data privacy laws: A comparative analysis. Computer Law & Security Review, 44, 105638.

Data Governance, data security, privacy concerns and ethical considerations in Uganda

As a developing nation embracing the digital era, Uganda has recognized the transformative potential of data in driving economic growth, informed decision-making, and social development.[36] This recognition has been reflected in the increasing prominence of data governance policies within the country. For instance, Uganda enacted the Data Protection and Privacy Act of 2019, which regulates the collection, processing, storage, and sharing of personal data.[37] This legislation ensures that data is managed ethically, transparently, and in compliance with international best practices, fostering an environment of trust and responsible data usage.[38] Additionally, Uganda established the Data Protection and Privacy Regulations (2021) to complement the Data Protection and Privacy Act of 2019, by providing detailed guidelines and mechanisms for its implementation, further enhancing data protection measures.[39]

Uganda has also taken significant strides in establishing an array of data governance policies including the Computer Misuse Act (2011 & Amendment of 2022), that addresses electronic security, and the National Open Data Policy (2015) that promotes transparency through open data formats. Other policies include the National Information Security Framework that mandates cybersecurity measures and the Uganda Electronic Transactions Regulations (2013) that reinforces electronic transaction integrity. These polices collectively exemplify Uganda's commitment to robust data governance, encompassing privacy, security, transparency, and responsible data use.

While data governance policies have gained prominence in Uganda, their effective implementation and enforcement remain a pressing concern. Despite the enactment of the Data Protection and Privacy Act of 2019, public entities and private entities in Uganda are facing challenges in implementing data protection laws.

In the public entities, their fragmented nature has often led to a lack of standardised data management practices, which has made it difficult to ensure consistent data protection across different departments and agencies.[40] Public institutions often operate under tight budget constraints, making it challenging to allocate sufficient resources for implementing and maintaining data protection infrastructure and expertise. The failure to effectively implement data protection laws in Uganda can also be attributed to the limited awareness among the public institutions leading to inadequate understanding for enforcing regulations.

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[36] Komakech, M. (2023). The Role of ICT in the Economic Development of Uganda. Www.linkedin.com. https://www.linkedin.com/pulse/role-ict-economic-development-uganda-moses-komakech

[37] Blazevic, A. N., Mugalula, P., & Wandera, A. (2021). Towards Operationalizing the Data Protection and Privacy Act 2020: Understanding the Draft Data Protection and Privacy Regulations, 2020. Available at SSRN 3776353.

[38] CIPESA. (2019). The Highs and Lows of Uganda's Data Protection and Privacy Act. https://cipesa.org/wp-content/files/reports/Highs-and-lows-of-Data-Protection-in-Uganda.pdf

[39] Blazevic, A. N., Mugalula, P., & Wandera, A. (2021). Towards Operationalizing the Data Protection and Privacy Act 2020: Understanding the Draft Data Protection and Privacy Regulations, 2020. Available at SSRN 3776353.

[40] Mayega, J., Ssuuna, R., Mubajje, M., I Nalukwago, M., & Muwonge, L. (2019). How clean is our taxpayer register? Data management in the Uganda revenue authority.

Several private institutions are also falling short in adequately safeguarding personal data and implementing effective data governance policies and practices. For instance private entities such as telecommunication companies in Uganda, despite adopting proactive measures like encryption protocols and access controls, often face challenges in maintaining consistent adherence to these safeguards.[41] The sheer volume and sensitivity of customer data pose a significant hurdle in ensuring the effectiveness of these measures. Moreso, financial institutions in Uganda, while adhering to data classification and secure retention practices, have faced difficulties in keeping pace with the rapid digitization of financial transactions.[42] The growing popularity of online banking and mobile payment platforms in Uganda has introduced new vulnerabilities and complexities, making it difficult to consistently enforce data protection measures across diverse channels and transaction types. Regarding E-commerce platforms, while emphasising encryption and secure payment gateways, they grapple with the challenges of cross-border data transfers and diverse payment methods.[43] The complexities of international data protection regulations and the complexities of managing customer consents across multiple jurisdictions pose significant hurdles.[44] In other sectors like academia, civil society organisations too face various challenges in the realm of data protection and privacy including technological, regulatory and organisational considerations. Lack of comprehensive data protection laws, outdated regulations that do not adequately address current challenges in the digital age, insufficient technological infrastructure, absence of clear regulations on cross border data transfers as well as issues of data ownership and intellectual property rights all make these sectors vulnerable to data breaches and inability to protect subjects data.[45]

[41] Muhangi, K. (2018e, May 13). The Implications of granting Telecommunications companies access to the National Identity Card Database. KTA Advocates. https://www.ktaadvocates.com/the-implications-of-granting-telecommunications-companies-access-to-the-national-identity-card-database/
[42] Romaniuk, S. N., & Omona, D. A. Uganda's cyber security capacities and challenges. Companion to Global Cyber-Security Strategy, 573.
[43] UNCTAD. (2020). Ugandan e-commerce platforms power recovery from COVID-19 crisis | UNCTAD. Unctad.org. https://unctad.org/news/ugandan-e-commerce-platforms-power-recovery-covid-19-crisis
[44] UNCTAD. (2020). Ugandan e-commerce platforms power recovery from COVID-19 crisis | UNCTAD. Unctad.org. https://unctad.org/news/ugandan-e-commerce-platforms-power-recovery-covid-19-crisis
[45] Tomusange, I., Yoon, A., and Mukasa, N. (2017) The Data Sharing Challenges and Practices in Uganda

Capacity Building

Capacity building within data governance is a pivotal aspect ensuring individuals and organisations possess the requisite knowledge and skills for efficient data management.[46] In data governance, the capacity to understand, analyse, and act upon data is imperative. Building this capacity involves nurturing skills in data management, analysis, and interpretation. However, African nations face significant challenges in effectively harnessing data as a resource such as scarcity of resources, and limited technical expertise creates a significant capacity building gap that needs to be bridged. Many African countries face limitations in educational infrastructure, hindering the development of a skilled workforce in data science, data analysis, and data management.[47] Educational curricula often lack comprehensive modules dedicated to data governance and management, leaving a substantial knowledge gap among graduates entering the workforce.[48]

Furthermore, the existing workforce within governmental bodies, regulatory agencies, and even private sectors in Africa often lacks the necessary training and exposure to handle the complexities of data governance. Stakeholders often lack the necessary implementation skills required for effective monitoring, evaluation, and feedback mechanisms in data governance policies.[49] This shortfall hampers the ability to oversee and assess outcomes adequately, hindering the refinement and improvement of data governance policies. This necessitates building their capacity not only for technical training but also instilling a culture of data ethics, understanding data privacy laws, and embracing best practices in data management.

The gap in capacity building has far-reaching consequences. Without effective data governance, entities struggle to collect, store, and utilise data efficiently, leading to data fragmentation, inconsistency, and poor data quality. This, in turn, hinders evidence-based decision-making and innovation.

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[46] Abraham, R., Schneider, J., & Vom Brocke, J. (2019). Data governance: A conceptual framework, structured review, and research agenda. International journal of information management, 49, 424-438.

[47] Eke, D., P. Ochang, A. Adimula, F. Borokini, S. Akintoye, R. Oloyede, L. Sorborikor, M. Adeyeye, B. Wale-Oshinowo, T. Ogundele. 2022. Responsible Data Governance in Africa: Institutional Gaps and Capacity Needs. Centre for the Study of African Economies (CSEA)

[48] Ibid

[49] Aaronson, S. A., & Leblond, P. (2018). Another digital divide: The rise of data realms and its implications for the WTO. Journal of International Economic Law, 21(2), 245-272.

Initiatives on Data Governance

Government Initiatives

Government bodies play a pivotal role in effective data governance by allocating essential resources, expertise, and technology to enhance data handling capabilities within government agencies and relevant institutions. Recognizing the potential of data to transform their societies, African governments are undertaking a range of initiatives to strengthen data governance frameworks and promote responsible data practices. Dedicated data regulatory bodies have been established across various African nations, entrusted with overseeing policy implementation, granting data licences, and investigating breaches. These entities, such as Nigeria's National Data Protection Commission (NDPC),[50] South Africa's Information Regulator,[51] Uganda's Personal Data Protection Office[52] and Mauritius's Data Protection Office (DPO)[53] among others, play pivotal roles in upholding data governance standards.

However, not all African countries have established Data Protection and Privacy Offices or comprehensive data protection policies due to the low levels of technological infrastructure, varying degrees of awareness about data privacy concerns, competing policy priorities, and varying regulatory frameworks.[54] Most countries on the continent are also on their journey to transition into middle income economies and have limited available resources that are allocated hunched on prioritisation.[55] Despite the importance of data, it is rarely seen as a priority when placed against food security, education and health. Where data is prioritised, only a small fraction of national budgets is allocated to research and development, data and technology financing.[56]

It is worth noting that African Governments have also launched open data initiatives, unlocking government -held data for public accessibility and reuse. Initiatives like Kenya's Open Data Initiative,[57] South Africa's Open Data Portal,[58] and Uganda National Statistical Office Open Data Portal[59] exemplify efforts to promote transparent data access. Furthermore, local governments have joined in, establishing their portals to offer more detailed, location-specific data. Initiatives like the City of Cape Town in South Africa or Edo State in Nigeria provide thematic data for their regions.[60] Nevertheless, determining the custodian of national data portals in Africa's open data landscape remains a challenge. While government institutions typically oversee these portals, there's no consensus on which specific body holds this responsibility.[61] National Statistics Offices often aren't the sole custodians, with various ministries, like ICT/Communications or Finance, taking charge in different countries like Ghana, Kenya, or Tanzania.

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[50] https://ndpc.gov.ng/

[51] https://inforegulator.org.za/#:~:text=The%20Information%20Regulator%20(South%20Africa)%20is%2C%20among%20others%2C,provisions%20of%20the%20POPIA%20Act.

[52] https://www.pdpo.go.ug/home

[53] https://dataprotection.govmu.org/SitePages/Index.aspx

[54] Collaboration on International ICT Policy for East and Southern Africa (CIPESA). (2022, November 4). Key Takeaways From the 2022 African Union Data Policy Framework. Collaboration on International ICT Policy for East and Southern Africa (CIPESA). https://cipesa.org/2022/11/key-takeaways-from-the-2022-african-union-data-policy-framework/

[55] Ibid

[56] Ibid

[57] https://www.opendata.go.ke/

[58] https://data.openup.org.za/

[59] https://ubos.org/nso-open-data/

[60] Mutuku, L., & Tinto, T. I. (n.d.). Open Data Around the World - Sub-Saharan Africa. Stateofopendata.od4d.net. https://stateofopendata.od4d.net/chapters/regions/sub-saharan-africa

[61] Mutuku, L., & Tinto, T. I. (n.d.). Open Data Around the World - Sub-Saharan Africa. Stateofopendata.od4d.net. https://stateofopendata.od4d.net/chapters/regions/sub-saharan-africa

Health Management Information System (HMIS)

In Uganda's health sector, the Health Management Information System (HMIS) stands as a pivotal data governance initiative, streamlining healthcare delivery and enhancing public health outcomes. Acting as an integrated reporting system, HMIS collates crucial data from diverse stakeholders including the Ministry of Health, Development Partners, and healthcare units, ensuring patient-level information is captured, aggregated, and reported through different healthcare levels up to the National Health Databank/Resource Centre.[62] Uganda's HMIS empowers data subjects through its structured process outlined in the procedure manual.[63] The manual comprises seven technical modules; Planning, Outpatient Services, Preventive and Curative Activities, Management of Resources, Inpatient and Specialty Services, Community Health, and Information Systems and Routine Reporting.[64] Each module contains specific forms and tables guiding the collection, use, and reporting of health-related data. Guided by seven technical modules and dedicated forms, the system ensures transparency in data collection and utilisation. This allows users to access, rectify, or remove their information, fostering trust and control over their health data in every interaction. However, there are issues surrounding data quality, delayed reporting, and the inability to capture comprehensive data from private healthcare providers and community levels which directly impact the system's ability to provide accurate and timely information.[65] This inaccuracy can impede the ability to access reliable health information, rectify any inaccuracies, or remove outdated or incorrect data.

Another influential system, the District Health Information System 2 (DHIS2), collects, manages, and visualises health data, ensuring comprehensive data collection through collaborations with Village Health Teams (VHTs), fostering community inclusivity and data ownership.[66] The DHIS2 system utilises a manual that explicitly outlines procedures for data collection, entry, security, and accuracy protocols outlined in the ministry's DHIS2 procedure manual.[67] This manual ensures patients' informed consent, data security, accuracy, and integrity, respecting data subjects' rights to privacy and accurate health information representation. The manual explicitly outlines procedures for data collection, entry, and reporting, emphasising the importance of obtaining informed consent from patients. This process aligns with the fundamental right of data subjects to be informed about the collection and use of their data. Additionally, the manual addresses the security and confidentiality of health data. It emphasises the need to protect sensitive patient information from unauthorised access, use, or disclosure. By establishing protocols for data security and access control, the manual safeguards data subjects' right to privacy and data protection.[68]

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[62] Kaggwa, G. (2020, February 12). HEALTH MANAGEMENT INFORMATION SYSTEM IN UGANDA. The International Agency for the Prevention of Blindness. https://www.iapb.org/news/health-management-information-system-in-uganda/

[63] https://www.gou.go.ug/sites/default/files/media-files/THE%20HEALTH%20MANAGEMENT%20INFORMATION%20SYSTEM_0.pdf

[64] Ibid

[65] Bogere, J., Balaba, Mulira, H., & Munyambabaz, E. (2018). Health Management Information System (HMIS) in Uganda | Mets. METS. https://mets.or.ug/health-management-information-system-hmis-in-uganda/

[66] Chikwado. (2023, June 29). Strengthening routine data collection with DHIS2 to boost education data use in four Ugandan districts. DHIS2. https://dhis2.org/uganda-education-data-use/

[67] https://www.cphl.go.ug/sites/default/files/2022-12/DHIS2%20USER%20MANUAL%20UGANDA.pdf

[68] AFEX. (2023, July 21). Technology and Health Data Governance in Africa: The Case of Uganda. African Freedom of Expression Exchange. https://www.africafex.org/country-highlights/technology-and-health-data-governance-in-africa-the-case-of-uganda-2

However, the effective implementation of data governance policies and practices in Uganda's Health Management Information System (HMIS) and District Health Information System 2 (DHIS2) faces numerous challenges. Technical infrastructure deficiencies, particularly in rural areas, hinder data collection, storage, and transmission due to limited internet connectivity and outdated computer hardware and software.[69] These limitations impede data dissemination, collaboration, informed decision-making, and exacerbate knowledge gaps. Additionally, the shortage of trained healthcare personnel and ICT experts, coupled with resistance to adopting modern technologies in healthcare, restricts effective data processing and implementation of data-driven practices.[70]

Moreover, resistance to change within the Ugandan health industry, often rooted in preferences for traditional paper-based records, limits the transition to electronic health systems. Factors like limited IT knowledge, funding constraints, privacy concerns, and interoperability challenges further contribute to this resistance. Fragmentation of data exacerbates these issues, with multiple health information systems operating independently, leading to data silos and hindering seamless data sharing and patient outcome tracking.[71] This fragmented landscape compromises holistic patient care and impedes accurate analysis of healthcare trends due to the lack of integrated data.

Integrated Revenue Administration System (IRAS)

The Uganda Revenue Authority's (URA) Integrated Revenue Administration System (IRAS) stands as a laudable data governance initiative in Uganda, which was introduced to enable local governments and cities collect revenue through registration, assessment, billing, payment awareness raising for taxpayers, and connecting residents to local governments.[72] The IRAS is a web-based system that can be accessed by taxpayers using any internet-connected device. The system allows taxpayers to register, file their taxes, and make payments online. The system also provides taxpayers with access to a range of information and services, such as tax rates, due dates, and payment options.[73] Additionally, the IRAS has automated many previously manual processes within tax administration, substantially boosting efficiency of the users.

Nevertheless, IRAS has grappled with several challenges such as the lack of taxpayer awareness about the system, resulting in slow adoption rates and a persistent reliance on conventional tax payment methods like cash transactions.[74] Moreover, inadequate technical expertise among local government staff has contributed to delays in efficient utilisation of the tax system highlighting a crucial skill gap.[75] Additionally, Local governments in Uganda face financial constraints, hindering investments in crucial hardware, software, and digital literacy training. Moreover, internet connectivity services to local governments are strained by the inability to pay for needed services amidst limited funds.[76]

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[69] Gillwald, A., Mothobi, O., Ndiwalana, A., & Tusubira, T. (2019). THE STATE OF ICT IN UGANDA. In Research ICT Africa. https://researchictafrica.net/wp/wp-content/uploads/2019/05/2019_After-Access-The-State-of-ICT-in-Uganda.pdf

[70] Umezuruike, C. & Nwankwo, W. M, & Kareyo, M. (2017). Implementation Challenges Of Health Management Information Systems In Uganda: A Review. Journal of Multidisciplinary Engineering Science and Technology (JMEST). 4. 2458-9403.

[71] Dehnavieh, R., Haghdoost, A., Khosravi, A., Hoseinabadi, F., Rahimi, H., Poursheikhali, A., ... & Aghamohamadi, S. (2019). The District Health Information System (DHIS2): A literature review and meta-synthesis of its strengths and operational challenges based on the experiences of 11 countries. Health Information Management Journal, 48(2), 62-75

[72] https://iras.go.ug/

[73] Junquera-Varela, R. F., Awasthi, R., Balabushko, O., & Nurshaikova, A. (2019). Thinking strategically about revenue administration reform: The creation of integrated, autonomous revenue bodies.

[74] Ibid

[75] Wales, C., & Lees, A. (2020). Report on the tax policy-making process in Uganda. https://www.ldpg.or.ug/wp-content/uploads/2021/03/Uganda-tax-policy-making-process-ODI-Mar2020.pdf

[76] Parliament of Uganda . (2022). Report Of The Committee On Information, Communication Technology And National Guidance On The Ministerial Policy Statement and Budget Estimates For FY 20.22123. https://parliamentwatch.ug/wp-content/uploads/2022/04/ICT2-22-Report-on-Ministerial-Policy-Statement-and-Budget-Estimates-for-FY-202223.pdf

The Kenya Labour Market Information System

The Kenyan Labour Market Information System (KLMIS) serves as a vital repository of labour market intelligence aimed at providing comprehensive information on employment, earnings, and in-demand skills within the country.[77] The system focuses on key labour market indicators crucial for various stakeholders such as students, job seekers, and educational institutions. By offering data on employment statuses, types of occupations available, job vacancies, and required skill sets, KLMIS addresses skill gaps and mismatches, aiding in the reduction of unemployment and enhancing workforce productivity. This web-based portal falls under the Ministry of Labour and Social Protection and is managed by the Labour Market Information and Analysis Unit, contributing to better human capital planning and effective labour market policy formulation.[78]

KLMIS implements robust measures to ensure proper data governance practices in its operations. Access to the portal and its services is contingent upon users' adherence to the stipulated terms and conditions, binding them to comply with applicable laws and regulations during their interactions with the system.[79] The KLMIS maintains public accessibility while monitoring user visits and enforcing regulations against hacking or content modification that may breach copyright laws. Specific terms for job seekers mandate that only Kenyan citizens above 18 years can post profiles, agreeing to share their information with registered employers. For employers, registration and verification are prerequisites for access, while details of posted vacancies are visible to all visitors.[80] The Ministry ensures data security measures and is empowered to oversee posted information and retain discretion to modify or restrict access to KLMIS content when necessary.

However, KLMIS encounters substantial challenges that threaten its efficacy. A primary challengeis the absence of a robust information-sharing framework, impeding its intended function of providing comprehensive labour market insights for informed policy-making.[81] Despite its development to counteract the longstanding issue of insufficient labour market information, the system grapples with redundancy risks owing to inadequate collaboration among institutions for information sharing. This issue is compounded by insufficient budget allocation and a lack of necessary equipment, hindering the effective implementation of the system.[82]

Civil Society Initiatives

Civil society organisations (CSOs) in Africa are recommended to actively advocate for data privacy protection and ethical data practices. Their role as champions of data privacy is essential in maintaining ethical data governance. They serve as champions of ensuring that data practices align with the interests of the broader population, acting as watchdogs to ensure ethical standards and data subjects' rights are upheld. civil society organisations actively advocate for data privacy protection and push for the inclusion of perspectives from marginalised groups in data-driven policymaking. Their active engagement and advocacy help uphold transparency, accountability, and ethical data practices.

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[77] KLMIS. (n.d.). KLMIS KLMIS - Kenya Labour Market Information System. Labourmarket.go.ke. Retrieved October 22, 2023, from https://labourmarket.go.ke/about/

[78] Ibid

[79] KLMIS . (n.d.). KLMIS - Kenya Labour Market Information System Terms and Conditions. Labourmarket.go.ke. https://labourmarket.go.ke/terms/

[80] Ibid

[81] Ministry Of Labour and Social Protection. (2018). Strategic Plan 2018 - 2022. State Department for Labour. https://www.labour.go.ke/sites/default/files/law/State-Department-for-Labour-Strategic-Plan-2018-2022-COVER-PAGE-merged.pdf

[82] Ibid

Civil Society Organizations also play a crucial role in advancing African open data ecosystems, focusing on implementing initiatives and building capacity for open data utilisation, ultimately enhancing information accessibility for advocacy and service delivery. Prominent bodies like Open Knowledge International, the Open Data Institute, and the World Wide Web Foundation have spearheaded initiatives, collaborating with grassroots communities, providing expertise, resources, and capacity building for government champions and civil society, alongside supporting annual Open Data Day events.[83] Additionally, institutions like the International Budget Partnership, Extractive Industries Transparency Initiative (EITI), and Development Initiatives have championed thematic open data access, focusing on budgets, extractive industries, and poverty.[84] CSOs have also spurred the demand for open data, particularly in fostering technological innovations, with initiatives like Code for Africa developing citizen-focused applications and platforms. Collaborations such as the Africa Open Data Collaboratives have facilitated gatherings of civic hackers, data journalists, and stakeholders through conferences like the Africa Open Data Conference, fostering a vibrant open data community both offline and online.

Financial constraints often limit their scope and scale, hindering widespread outreach and the execution of ambitious projects. Additionally, there's a persistent struggle in maintaining sustained engagement and interest among citizens, governments, and other stakeholders, which is crucial for the success and impact of open data initiatives. Moreover, data quality and availability inconsistencies across various sectors and regions present a substantial challenge, impacting the reliability and usefulness of the data being advocated for and utilised. Despite these challenges, CSOs continue to be influential in advocating for increased transparency, accountability, and accessibility through open data initiatives, striving to navigate these hurdles to foster a more robust and inclusive open data ecosystem across the continent.

Initiatives in the Academia

Academic institutions contribute to effective data governance through their engagement in data discussions with government entities, sharing knowledge and best practices.[85] Academic institutions should consider participating in partnerships with government entities and other stakeholders to pool data resources. This aims to create more comprehensive datasets that can inform evidence-based policy formulation. Such partnerships also foster an inclusive data governance ecosystem, benefiting from the expertise and insights of academic institutions.

Education Management Information System (EMIS) Uganda

In Uganda's education sector, the Education Management Information System (EMIS) stands as a robust decision support platform, collecting, storing, and disseminating crucial data for education planning and management.[86] EMIS integrates various educational data, facilitating evidence-based decision-making, policy formulation, resource allocation, and program evaluation within the education and sports sectors.[87] Its main features encompass data collection, handling, analysis, and dissemination, aligned with broader education policies and planning frameworks. Through transparent data processing practices and a comprehensive Privacy Policy,[88] EMIS strives to maintain users' autonomy and privacy, providing clear information on data handling practices, users' rights, and prohibited activities.[89]

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[83] Mutuku, L., & Tinto, T. I. (n.d.). Open Data Around the World - Sub-Saharan Africa. Stateofopendata.od4d.net. https://stateofopendata.od4d.net/chapters/regions/sub-saharan-africa

[84] Ibid

[85] Perez Jr., Z., & von Zastrow, C. (2023). POLICY BRIEF. Lessons in Data Governance for State Education Leaders. https://files.eric.ed.gov/fulltext/ED628555.pdf

[86] Asio, J. M. R., Leva, E. F., Lucero, L. C., & Cabrera, W. C. (2022). Education Management Information System (EMIS) and Its Implications to Educational Policy: A Mini-Review. International Journal of Multidisciplinary: Applied Business and Education Research, 3(8), 1389-1398.

[87] Ibid

[88] https://emis.go.ug/privacy-policy

[89] Sparks, J. (2021). Strengthening Education Management Information Systems (EMIS) and Data for Increased Resilience to Crisis. COUNTRY CASE STUDY: UGANDA Background document. https://www.educationcannotwait.org/sites/default/files/2022-03/Strengthening%20Education%20Management%20Information%20Systems%20%28EMIS%29%20and%20Data%20for%20Increased%20Resilience%20to%20Crisis_%20country%20case%20study_%20Uganda.pdf

While the Education Management Information System (EMIS) in Uganda represents a significant stride in data governance, its effective implementation faces substantial challenges. These include issues with data quality stemming from inconsistent collection protocols and delayed reporting, undermining the accuracy and reliability of information.[90] Additionally, there's a lack of awareness among stakeholders regarding data protection rights, potentially leading to unwitting consent for data collection and misuse.[91] For instance, students and parents might unknowingly consent to data collection without a comprehensive understanding of how their information could be utilised.[92] Moreover, resource constraints, both financial and technical, limit the system's potential impact on informed decision-making and educational improvements, compromising the quality and effectiveness of the education sector.[93]

Education Management Information Systems (EMIS) South Africa

The Education Management Information System in South Africa functions under the Department of Basic Education (DBE), tasked with the development and maintenance of an integrated education information system. Its primary responsibility involves acquiring, processing, disseminating, and reporting high-quality education data.[94] Through this comprehensive approach, EMIS ensures the management of education across various levels. The system demonstrates a commitment to safeguarding privacy, ensuring a secure online experience. EMIS collects both personally identifiable information, such as names and addresses, and anonymous demographic data like age and interests. While ensuring data security and privacy, EMIS employ automated collection of computer-related information for operational purposes and statistical analysis, maintaining a user's anonymity when applicable.

The system's focus on security measures like encryption and its commitment to periodically updating their privacy policies exhibit a dedication to protecting personal information.[95] EMIS uses cookies to personalise user experiences and streamline the provision of services and upholds user choices regarding cookies, allowing individuals to decline them, albeit with potential limitations on the interactive aspects of the service.[96] The system's stringent data security measures aim to protect personal information from unauthorised access or disclosure.

However, Integrating data from diverse sources, such as schools, districts, and provincial departments in South Africa, poses a significant challenge. The lack of standardisation and interoperability among these systems results in data silos that limit the comprehensive analysis of education trends.

[90] Ibid
[91] Angoda, E. (2022) Universities, schools should always ensure data privacy. The Daily Monitor. https://www.monitor.co.ug/uganda/oped/letters/universities-schools-should-always-ensure-data-privacy--3747548
[92] UNESCO (2022) Minding the data: protecting learners' privacy and security. ISBN: 978-92-3-100525-1 https://unesdoc.unesco.org/ark:/48223/pf0000381494
[93] Ibid
[94] https://www.education.gov.za/Programmes/EMIS.aspx
[95] Ibid
[96] https://www.education.gov.za/terms.aspx

Conclusion

While the African continent has witnessed strides in enacting data protection laws, establishing regulatory bodies, and initiating collaborative frameworks, substantial hurdles persist. The evolving digital landscape demands robust data governance frameworks, yet resource limitations, educational gaps, and workforce skill deficiencies pose formidable challenges. These challenges impede effective implementation, hindering the harnessing of data's transformative potential across sectors. Moreover, the complex political economies within individual African states create complexities in aligning data governance policies, hindering integration and enforcement. Addressing these challenges demands concerted efforts in bolstering capacity building, enhancing educational curricula, and fostering skilled workforces equipped with adept data management and ethical practices.

However, amidst the challenges, promising initiatives spearheaded by governments, civil society, academia, and regional collaborations signal a proactive stance towards fostering ethical data practices and transparent access. Systems like the Health Management Information System, Integrated Revenue Administration System, and the Kenyan Labour Market Information System exemplify substantial governmental efforts towards efficient data governance. Additionally, civil society organisations champion data privacy advocacy, while academia contributes through initiatives like Uganda's Education Management Information System. These endeavours reveal the potential for transformative change through collaborative and innovative approaches. Despite the hurdles, continued emphasis on capacity building, resource allocation, and stakeholder engagement remains pivotal in realising the full potential of data as a catalyst for sustainable development and informed decision-making across Africa.

Next Steps

Our journey of exploring data governance doesn't stop here. We are excited to share that our upcoming report will dive deep into the economic and labour sector in Uganda. We've conducted a research study to understand how data governance policies and practices are working in the economic and labour sector in eight cities Uganda. We're focusing on both public and private players in Uganda to see how they are contributing to the data governance landscape. What's even more intriguing is how these players are fostering civic engagement and making sure that gender inclusivity is part of the data governance picture. By digging into these aspects, we aim to uncover valuable insights that can help make data governance more fair, inclusive, and effective.

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