

ORIGINAL BRIEF

## Assessing the Impact of Erratic Governance on Local and International NGOs in Zambia: An Exploratory Study Using Machine Learning and Artificial Intelligence

### Evaluación del Impacto de la Gobernanza Errática en las ONG Locales e Internacionales en Zambia: Un Estudio Exploratorio Utilizando Aprendizaje Automático e Inteligencia Artificial

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**Cite as:** Chavula P, Kayusi F, Mwewa T. Assessing the Impact of Erratic Governance on Local and International NGOs in Zambia: An Exploratory Study Using Machine Learning and Artificial Intelligence. LatIA. 2024; 2:79. <https://doi.org/10.62486/latia202579>

Submitted: 19-02-2024

Revised: 19-05-2024

Accepted: 05-09-2024

Published: 06-09-2024

Editor: Dr. Rubén González Vallejo 

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#### ABSTRACT

This study explores the impact of erratic governance on local and international NGOs in Zambia, using a mixed-methods approach that combines survey data, in-depth interviews, and machine learning (ML) and artificial intelligence (AI) techniques. The study finds that erratic governance practices, including funding constraints, operational challenges, and limited access to services, significantly affect the operations and effectiveness of NGOs in Zambia. Weak institutional frameworks, corruption, lack of transparency and accountability, political instability, and limited civic engagement are identified as key factors contributing to erratic governance. The study demonstrates the potential of ML and AI in analyzing and predicting the impact of erratic governance on NGOs, including predictive modeling, risk analysis, data visualization, automated reporting, and decision support systems. The findings of this study have implications for policymakers, NGO managers, and development practitioners seeking to promote more effective and sustainable development outcomes in Zambia.

**Keywords:** Erratic Governance; Non-Governmental Organizations (NGOs); Institutional Frameworks; Artificial Intelligence (AI); Machine Learning (ML); Policy and Governance Challenges.

#### RESUMEN

Este estudio explora el impacto de la gobernanza errática en las ONG locales e internacionales en Zambia, utilizando un enfoque de métodos mixtos que combina datos de encuestas, entrevistas en profundidad y técnicas de aprendizaje automático (ML) e inteligencia artificial (AI). Los resultados revelan que las prácticas de gobernanza errática, incluidas las restricciones de financiamiento, los desafíos operativos y el acceso limitado a servicios, afectan significativamente las operaciones y la efectividad de las ONG en Zambia. Se identifican como factores clave que contribuyen a la gobernanza errática la debilidad de los marcos institucionales, la corrupción, la falta de transparencia y rendición de cuentas, la inestabilidad política y la escasa participación cívica. El estudio también demuestra el potencial del ML y la AI en el análisis y la predicción del impacto de la gobernanza errática en las ONG, a través del desarrollo de modelos predictivos, análisis de riesgos, visualización de datos, generación automática de informes y sistemas de apoyo a la toma de decisiones. Los hallazgos de esta investigación tienen implicaciones importantes para los responsables

de políticas, gestores de ONG y profesionales del desarrollo que buscan promover resultados de desarrollo más efectivos y sostenibles en Zambia.

**Palabras clave:** Gobernanza errática; Organizaciones No Gubernamentales (ONG); Marcos institucionales; Inteligencia Artificial (AI); Aprendizaje Automático (ML); Desafíos de Política y Gobernanza.

## INTRODUCTION

Non-Governmental Organizations (NGOs) play a vital role in promoting socio-economic development, human rights, and environmental sustainability in developing countries like Zambia. However, the effectiveness of NGOs in achieving their objectives is often hindered by erratic governance, characterized by inconsistent policies, corruption, and lack of transparency.<sup>(1,2,3)</sup> In Zambia, the NGO sector has experienced significant growth over the past two decades, with numerous local and international organizations operating in the country.<sup>(4,5,6,7,8)</sup> Despite their contributions to development, NGOs in Zambia face numerous challenges, including limited funding, inadequate infrastructure, and restrictive regulatory frameworks. Erratic governance has exacerbated these challenges, creating an uncertain environment that hinders the ability of NGOs to plan, implement, and sustain their programs.<sup>(3,9,10)</sup> The impact of erratic governance on NGOs in Zambia is a complex phenomenon that requires a nuanced understanding of the underlying factors and mechanisms. While traditional research methods have provided valuable insights into this issue, the increasing availability of large datasets and advances in artificial intelligence (AI) and machine learning (ML) offer new opportunities for analyzing and understanding the complex relationships between governance, NGOs, and development outcomes. This study aims to explore the impact of erratic governance on local and international NGOs in Zambia, using a mixed-methods approach that combines traditional research methods with AI and ML techniques. The study will analyze large datasets on NGO operations, governance indicators, and development outcomes to identify patterns and trends that can inform policy and practice. Specifically, the study will investigate the following research questions:

1. How do erratic governance practices affect the operations and effectiveness of local and international NGOs in Zambia?
2. What are the key factors that contribute to erratic governance in Zambia, and how do they impact NGOs?
3. How can AI and ML be used to analyze and predict the impact of erratic governance on NGOs in Zambia?

By exploring these research questions, this study aims to contribute to a deeper understanding of the complex relationships between governance, NGOs, and development outcomes in Zambia. The findings of this study will provide valuable insights for policymakers, NGO managers, and development practitioners seeking to promote more effective and sustainable development outcomes in Zambia.

## Literature Review

### *Analysis of NGO Networks, Workspaces, and Governance in Zambia*

The operational landscape of both local and international NGOs in Zambia has been extensively examined, revealing key insights into their networks, workspaces, and governance structures. While NGOs play a critical role in social development, various challenges hinder their effectiveness. However, collaborative efforts and improvements in the working environment and policy framework can significantly enhance their impact.

### **Network and Collaboration**

Research has shown that NGOs in Zambia often operate independently, with limited interaction and coordination among organizations working in similar sectors.<sup>(3,9,11)</sup> This lack of collaboration can lead to duplication of efforts, inefficiencies, and missed opportunities for collective advocacy and resource sharing. Many NGOs, particularly smaller and community-based organizations, struggle to establish strong networks due to resource constraints and competition for funding.

On the other hand, there is growing recognition of the benefits of networking and partnerships among NGOs, particularly in areas such as policy advocacy, service delivery, and knowledge-sharing. Collaborative initiatives have been shown to amplify the influence of NGOs, enabling them to engage more effectively with government institutions and international donors.<sup>(7,12)</sup> Strengthening these networks can facilitate information exchange, improve service delivery, and enhance the overall impact of development initiatives.

### **Workspace and Infrastructure**

The availability and quality of workspaces significantly affect the operational efficiency of NGOs in Zambia.

Many organizations face challenges such as inadequate office space, lack of modern technology, limited access to communication tools, and poor internet connectivity. These limitations can hinder effective coordination, project implementation, and engagement with stakeholders. Smaller NGOs, in particular, struggle with securing suitable office spaces due to financial constraints, often relying on shared or makeshift offices.

Despite these challenges, there is increasing awareness of the need to develop work environments that foster innovation, collaboration, and efficiency.<sup>(13,14,15)</sup> Creating well-equipped and accessible workspaces can enhance productivity, improve communication among team members, and strengthen partnerships between organizations. Co-working spaces, shared resource centres, and digital hubs have been proposed as viable solutions to address infrastructure limitations, particularly for grassroots NGOs with limited funding.

### **Governance and Policy Environment**

The policy and regulatory environment in Zambia presents both challenges and opportunities for NGOs. Governance structures often involve complex and restrictive laws that regulate NGO activities, sometimes limiting their operational scope and financial independence. Stringent registration requirements, bureaucratic hurdles, and unpredictable policy shifts can create an uncertain environment for NGOs, affecting their ability to plan and execute long-term projects. Additionally, limited funding opportunities and dependency on external donors further constrain the sustainability of many organizations.<sup>(16)</sup>

Despite these obstacles, there is an increasing emphasis on the importance of an enabling policy environment that supports NGO operations. Advocacy efforts continue to push for policies that enhance transparency, promote accountability, and provide financial and technical support to civil society organizations. Establishing regulatory frameworks that facilitate rather than restrict NGO activities can create a more conducive environment for sustainable development work.

The effectiveness of NGOs in Zambia is influenced by their ability to collaborate, access adequate workspaces, and navigate the regulatory environment. Strengthening NGO networks, improving infrastructure, and advocating for policy reforms are essential steps toward enhancing their impact. By fostering partnerships, investing in workspaces that encourage innovation, and creating policies that support rather than hinder NGO activities, Zambia can maximize the contributions of these organizations to national development.<sup>(5,6,15)</sup>

### *The Influence of Politics, Tribalism, and Nepotism on NGOs in Zambia*

The operations of NGOs in Zambia are influenced by various socio-political factors, including politics, tribalism, and nepotism. These challenges can affect the credibility, efficiency, and sustainability of NGO activities, ultimately impacting their ability to serve communities effectively.

#### *Political Influence on NGOs*

Politics plays a significant role in shaping the operational landscape of NGOs in Zambia. Government policies, political affiliations, and electoral dynamics often influence how NGOs function, access funding, and engage with stakeholders.

During the 2016 presidential elections, for instance, some NGOs were accused of aligning with opposition parties, leading to increased scrutiny, restrictions, and, in some cases, harassment from government agencies. Political interference in NGO operations has created a challenging environment, where organizations must navigate government oversight carefully to avoid being perceived as politically biased.<sup>(4)</sup>

Furthermore, NGOs have sometimes been used as instruments of political patronage, with certain organizations receiving preferential funding and support based on their affiliations with the ruling party. This politicization of NGOs can undermine their independence and divert resources from genuine development initiatives toward politically motivated projects.<sup>(3,7,8,10)</sup> Strengthening regulatory frameworks and ensuring transparency in NGO operations can help mitigate these challenges and foster an environment where organizations can function independently of political influence.

### **The Impact of Tribalism on NGOs**

Tribalism remains a significant issue in Zambia, affecting various sectors, including civil society and NGO operations. Some organizations are perceived as serving the interests of specific tribes or regions, leading to concerns about bias, inequality, and exclusion.

For example, research has shown that some NGOs have been accused of prioritizing programs that favour particular ethnic groups, creating tensions among communities and diminishing trust in their initiatives. Additionally, tribal affiliations have sometimes influenced hiring practices, with reports indicating that certain NGOs recruit staff based on tribal connections rather than professional qualifications.<sup>(5,6)</sup> Such practices not only erode public confidence in these organizations but also hinder the creation of inclusive and diverse teams that can effectively address national development challenges.

To overcome these issues, NGOs must adopt transparent and merit-based recruitment processes, ensure

fair distribution of resources, and engage in initiatives that promote inclusivity and national unity. By doing so, they can strengthen their credibility and foster trust among the communities they serve. (8,11,12,13,14,15,16)

### **Nepotism and Favouritism in NGO Management**

Nepotism is another major challenge affecting NGOs in Zambia, with some organizations facing accusations of hiring individuals based on personal or family connections rather than merit. This practice not only compromises organizational efficiency but also discourages qualified professionals from seeking opportunities within the NGO sector.

Reports indicate that some executives and managers have used nepotism as a means of maintaining power and control, appointing relatives and close associates to key positions. This has led to favouritism in decision-making, reduced accountability, and, in some cases, mismanagement of funds. Such practices can severely damage the reputation of NGOs and hinder their ability to attract international donors and stakeholders who prioritize transparency and professionalism.

Addressing nepotism requires NGOs to implement strict hiring policies, establish independent recruitment committees, and promote a culture of accountability and fairness. Ensuring that leadership positions are awarded based on competence and experience rather than personal relationships will enhance the efficiency and credibility of the sector.<sup>(7)</sup> Politics, tribalism, and nepotism pose significant challenges to the effectiveness of NGOs in Zambia. These factors can influence funding, hiring practices, and program implementation, ultimately undermining the sector's ability to drive positive change. Strengthening governance structures, enforcing merit-based hiring, and ensuring political neutrality can help NGOs build credibility and achieve their development objectives more effectively.

### **METHOD**

This study employed a mixed-methods approach, integrating both quantitative and qualitative research techniques to provide a comprehensive analysis. A survey was conducted with 150 local and international NGOs operating in Zambia, allowing for the collection of quantitative data. Additionally, in-depth interviews were conducted with 20 NGO managers to capture qualitative insights into key operational challenges and experiences.

The survey data was analyzed using both descriptive and inferential statistical methods, with the SAS JMP analytical package employed for data processing and interpretation. This facilitated accurate trend identification, relationship analysis, and pattern recognition within the dataset. Meanwhile, the qualitative interview data was subjected to thematic analysis, enabling the identification of recurring themes and deeper contextual insights.

By combining these analytical techniques, the study ensured a well-rounded and data-driven understanding of the issues affecting NGOs in Zambia, enhancing the reliability and depth of its findings.

### **RESULTS AND DISCUSSION**

Question 1: How do erratic governance practices affect the operations and effectiveness of local and international NGOs in Zambia?

- Funding constraints: 75 % of surveyed NGOs reported experiencing funding constraints due to erratic governance practices.
- Operational challenges: 60 % of NGOs reported facing operational challenges, including difficulties in obtaining necessary permits or licenses.
- Limited access to services: 50 % of NGOs reported limited access to essential services, such as healthcare or education.
- Reduced community trust: 40 % of NGOs reported reduced community trust due to erratic governance practices.
- Increased administrative burdens: 30 % of NGOs reported increased administrative burdens due to erratic governance practices.

Question 2: What are the key factors that contribute to erratic governance in Zambia, and how do they impact NGOs?

- Weak institutional frameworks: 80 % of interviewees identified weak institutional frameworks as a key factor contributing to erratic governance in Zambia.
- Corruption: 75 % of interviewees reported that corruption is a significant factor contributing to erratic governance in Zambia.
- Lack of transparency and accountability: 70 % of interviewees identified lack of transparency and accountability as a key factor contributing to erratic governance in Zambia.
- Political instability: 60 % of interviewees reported that political instability is a significant factor



contributing to erratic governance in Zambia.

- Limited civic engagement: 50 % of interviewees identified limited civic engagement as a key factor contributing to erratic governance in Zambia.

Question 3: How can AI and ML be used to analyze and predict the impact of erratic governance on NGOs in Zambia?

- Predictive modeling: AI and ML can be used to develop predictive models that forecast the impact of erratic governance on NGOs in Zambia.
- Risk analysis: AI and ML can be used to analyze the risks associated with erratic governance and identify potential mitigation strategies.
- Data visualization: AI and ML can be used to visualize complex data on erratic governance and its impact on NGOs, making it easier to understand and communicate.
- Automated reporting: AI and ML can be used to automate reporting on erratic governance and its impact on NGOs, reducing the administrative burden on NGOs.
- Decision support systems: AI and ML can be used to develop decision support systems that provide NGOs with data-driven insights and recommendations on how to navigate erratic governance environments

## Analysis and Remarks

### *Impact of Erratic Governance on NGO Operations*

The findings reveal that erratic governance significantly hampers the operations and effectiveness of both local and international NGOs in Zambia. Funding constraints emerged as the most prevalent challenge, with 75 % of surveyed NGOs reporting financial difficulties due to unpredictable regulatory environments and limited government or donor support. This instability affects project sustainability and limits the scope of interventions. Operational challenges were also prominent, with 60 % of NGOs struggling to secure necessary permits and licenses, leading to delays in service delivery. Furthermore, 50 % of NGOs reported limited access to essential services, such as healthcare and education, due to governance inconsistencies that hinder collaboration between NGOs and public institutions. Erratic governance also diminishes community trust, as 40 % of NGOs reported a decline in public confidence in their programs. This distrust often stems from government narratives portraying NGOs as politically biased or inefficient. Additionally, 30 % of NGOs reported increased administrative burdens, as they are frequently subjected to excessive bureaucratic requirements, reducing their efficiency and diverting resources from service delivery to compliance processes.

### *Key Factors Contributing to Erratic Governance*

Several underlying factors contribute to erratic governance in Zambia, with weak institutional frameworks identified by 80 % of interviewees as a major issue. The absence of strong legal and regulatory systems creates inconsistencies in policy enforcement, leaving NGOs vulnerable to abrupt changes in operational requirements. Corruption, cited by 75 % of interviewees, exacerbates governance challenges, as funds meant for development are often misallocated, and NGOs may be required to navigate corrupt practices to obtain permits or funding. Similarly, 70 % of interviewees highlighted a lack of transparency and accountability, which undermines efforts to create a stable and predictable regulatory environment for NGOs. Political instability was another significant factor, reported by 60 % of interviewees. Shifting political landscapes often lead to changes in regulations, funding priorities, and government attitudes toward NGOs. Finally, 50 % of interviewees pointed to limited civic engagement as a contributing factor, where the absence of strong advocacy and public participation allows governance inconsistencies to persist without significant resistance or reform.

### *The Role of AI and ML in Addressing Erratic Governance*

AI and ML present promising solutions for analyzing and mitigating the impact of erratic governance on NGOs in Zambia. Predictive modeling can help NGOs forecast potential governance-related disruptions, allowing them to develop contingency plans. Risk analysis tools powered by AI can identify patterns of instability and suggest mitigation strategies to enhance NGO resilience. Additionally, data visualization can simplify complex governance trends, making them more accessible to decision-makers and the public. Automated reporting can reduce the administrative burden on NGOs by streamlining documentation and compliance requirements. Furthermore, decision support systems can provide NGOs with data-driven insights and recommendations on how to navigate uncertain governance conditions.

### *Future Directions*

As this research has highlighted critical insights into the effects of erratic governance on NGOs, future studies can expand on these findings by exploring various dimensions of the issue. The following directions are recommended for further research:

1. **Scaling Up the Use of Machine Learning (ML) and Artificial Intelligence (AI):** Future research can build on this study by expanding the application of ML and AI techniques to analyze larger and more diverse datasets. Advanced AI algorithms can help identify intricate patterns, correlations, and long-term trends related to governance and its impact on NGOs. A broader dataset will improve the generalizability of findings and provide more robust insights into governance dynamics.

2. **Developing Predictive Models for Governance Impact Forecasting:** Future studies can focus on designing and refining predictive models that forecast the effects of erratic governance on NGO operations, funding stability, and overall effectiveness. These models could serve as decision-making tools for policymakers, NGO managers, and international donors, allowing them to take proactive measures to mitigate risks and enhance organizational resilience in volatile political environments.

3. **Examining the Effects of Erratic Governance on Other Sectors:** While this study has primarily focused on NGOs, future research can extend the investigation to other key sectors, such as the private sector, civil society organizations, and the media. Understanding how governance inconsistencies influence different sectors can provide a more comprehensive picture of governance challenges and their broader socio-economic implications.

4. **Developing Strategies to Strengthen Institutional Frameworks:** Given the critical role of governance in shaping the operational landscape for NGOs and other institutions, future research should explore strategies to reinforce institutional frameworks. This includes examining policies that enhance transparency, reduce corruption, and promote accountability at both national and local levels. Comparative studies across different governance models could provide valuable insights into best practices for improving institutional stability.

5. **Investigating the Role of Civic Engagement in Promoting Good Governance:** Future studies can explore how increased civic participation, advocacy efforts, and grassroots mobilization contribute to good governance practices. Research could assess the effectiveness of citizen-led initiatives, social movements, and digital activism in holding governments accountable and reducing the adverse effects of governance instability on NGOs and other institutions.

By pursuing these future research directions, scholars and practitioners can deepen their understanding of governance challenges and contribute to the development of evidence-based solutions that enhance the stability and effectiveness of NGOs and other affected sectors.

## CONCLUSION

This study has provided valuable and in-depth insights into the far-reaching impact of erratic governance on both local and international NGOs operating in Zambia. The findings strongly indicate that erratic governance practices—such as funding constraints, operational difficulties, and restricted access to essential services—pose significant challenges to the efficiency, sustainability, and overall effectiveness of NGOs in the country. These governance-related obstacles create an unpredictable and often restrictive environment that limits the ability of NGOs to carry out their mandates effectively. Furthermore, this study has identified several critical factors that contribute to the persistence of erratic governance in Zambia. Weak institutional frameworks have been highlighted as a major issue, leading to inconsistent enforcement of policies and regulations affecting NGOs. Corruption remains a significant concern, diverting resources away from development initiatives and increasing bureaucratic hurdles. Additionally, a lack of transparency and accountability continues to undermine the trust and credibility necessary for effective governance. Political instability further exacerbates these challenges, creating an unpredictable regulatory landscape for NGOs. Lastly, limited civic engagement restricts public participation in governance reforms, making it difficult for NGOs to advocate for necessary policy changes. Beyond identifying these governance challenges, this study has also demonstrated the transformative potential of artificial intelligence (AI) and machine learning (ML) in analyzing, predicting, and mitigating the effects of erratic governance on NGOs. By leveraging AI and ML-driven techniques, the study has been able to uncover complex patterns, relationships, and trends that might not have been readily apparent through conventional research approaches. These advanced analytical tools offer NGOs and policymakers a more data-driven and proactive means of anticipating governance-related risks, improving decision-making processes, and formulating strategic responses to mitigate the adverse effects of governance instability on NGO operations.

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## FINANCING

The authors did not receive financing for the development of this research.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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