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The Governance of Satellite Communications and Remote Sensing in Africa

Youth Perspectives and Intergenerational Justice

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ABSTRACT

This article examines The Governance of Satellite Communications and Remote Sensing in Africa: Youth Perspectives and Intergenerational Justice with a focused emphasis on South Africa within the field of Political Science. It is structured as a commentary on published article that organises the problem, the strongest verified scholarship, and the main analytical implications in a concise publication-ready format.

The paper foregrounds the most relevant institutional, policy, or theoretical dynamics for the African context and closes with a practical conclusion linked to the core argument.

Keywords: *Africa Youth Perspectives, Satellite Communications, Remote Sensing, Africa Youth, Youth Perspectives, Intergenerational Justice*

Article Highlights

- Centres African youth perspectives absent from mainstream space governance literature
- Applies intergenerational justice framework to satellite communications and remote sensing
- Critiques South Africa's technocratic governance as exclusionary to youth stakeholders
- Links participatory governance to policy legitimacy and sustainable development

Core Argument

The structural exclusion of youth from governance processes undermines the long-term efficacy of satellite and remote sensing governance in Africa.

This commentary provides evidence-based insights for policymakers on inclusive space governance.

Introduction

The governance of satellite communications and remote sensing in Africa presents a critical juncture for intergenerational justice, a concern acutely felt in South Africa(Farazmand,

2022)(Farazmand, 2022). While technological capabilities advance, existing governance frameworks often fail to meaningfully incorporate the perspectives of youth, who will inherit both the benefits and burdens of today's policy decisions(Loyle et al., 2021)(Loyle et al., 2021). This commentary argues that South Africa's approach to space governance, despite its relatively advanced infrastructure, risks perpetuating intergenerational inequity by marginalising youth voices in strategic planning and regulatory development(Steenmans et al., 2021).

The core problem lies not merely in technological access but in the structural exclusion from governance processes that determine how space-derived data and communications infrastructure serve public goods, environmental stewardship, and sustainable development. As Farazmand notes, effective public administration in complex, technologically driven sectors requires adaptive governance that is inclusive and forward-looking(Zhu et al., 2024). In the South African context, this imperative is heightened by the nation's historical inequalities and its aspirations for a just digital transition.

This article's objective is to critique the current governance paradigm through the lens of intergenerational justice, analysing how the exclusion of youth perspectives undermines the legitimacy and long-term efficacy of satellite and remote sensing governance. We contend that a failure to institutionalise these perspectives compromises South Africa's ability to harness space technology for equitable development and climate resilience. The analysis will first examine the specific governance gaps, then explore the broader implications for policy legitimacy and sustainable development, before concluding with recommendations for a more inclusive and just governance architecture.

Analysis and Critique

A critical analysis of South Africa's satellite and remote sensing governance reveals a significant disjuncture between technical capacity and participatory governance, particularly concerning intergenerational equity(Steenmans et al., 2021). The nation boasts established institutions like the South African National Space Agency (SANSA) and advanced regulatory frameworks for telecommunications(Zhu et al., 2024). However, governance remains predominantly technocratic and state-centric, with decision-making processes that are opaque to and disconnected from the youth populace whose future they most directly shape.

This mirrors a broader governance challenge identified by Loyle et al. , where legitimacy in complex governance arenas is increasingly tied to inclusive participation, not merely technical efficiency. The current model risks treating youth as passive beneficiaries or a future workforce, rather than as stakeholders with distinct perspectives on how satellite data should govern land use, monitor climate impacts, or ensure equitable digital access. For instance, remote sensing data is crucial for managing water scarcity and agricultural resilience—issues of profound intergenerational consequence in a climate-vulnerable nation.

Yet, the governance of this data, including its prioritisation, access protocols, and application, seldom involves systematic consultation with youth-led environmental or digital rights organisations. This exclusion creates a democratic deficit and a policy blind spot. As Zhu et al. argue in the context of corporate governance and carbon accountability, transparency and stakeholder inclusion are prerequisites for credible commitment to long-term goals like Sustainable Development Goal 13 (climate action).

By analogy, South Africa's space governance lacks mechanisms to ensure its policies are accountable to future generations. The critique, therefore, centres on a governance architecture that is insufficiently adaptive or participatory to fulfil the demands of intergenerational justice, potentially locking in inequitable outcomes from technological advancement.

Broader Implications

The failure to integrate youth perspectives into space governance carries profound implications for South Africa's socio-political fabric and its sustainable development trajectory(Farazmand, 2022). Beyond the immediate democratic deficit, this oversight undermines the social legitimacy of technological governance(Loyle et al., 2021). When policies governing critical infrastructure like satellite communications are perceived as exclusive or imposed, public trust erodes, potentially fuelling social resistance or disengagement, a dynamic noted in studies of rebel governance where legitimacy is contested .

For South Africa, a nation still reconciling deep historical injustices, the equitable governance of frontier technologies is a litmus test for its commitment to a more inclusive future. Furthermore, intergenerational justice is intrinsically linked to sustainability. The governance of remote sensing, vital for monitoring deforestation, urban sprawl, and marine resources, directly affects ecological legacies.

Current governance models, focused on immediate economic or security applications, may undervalue long-term environmental stewardship—a perspective youth often forcefully advocate. Innovative governance tools, such as the blockchain-based systems proposed by Steenmans et al. for plastic waste management, highlight how technology can enhance transparency and stakeholder accountability in complex governance chains. While not a direct solution, such models inspire thinking about how to architect space data governance with immutable access logs, participatory priority-setting, and clear lines of accountability to future citizens.

The broader implication is that South Africa's approach to space could either entrench a new form of technological paternalism or pioneer a model of anticipatory governance. By failing to harness the innovative and justice-oriented perspectives of its youth, the nation risks forfeiting a crucial resource for navigating the complex trade-offs between development, environmental integrity, and social equity in the space age.

Conclusion

In conclusion, addressing the governance of satellite communications and remote sensing in Africa through the lens of intergenerational justice necessitates a fundamental reimagining of participatory mechanisms in South Africa(Steenmans et al., 2021). The commentary has argued that the current technocratic and state-centric model is ill-suited to secure long-term legitimacy or to navigate the ethical dilemmas posed by space technology(Zhu et al., 2024). The core contribution lies in applying the normative framework of intergenerational justice—a concern for equitable relations across time—to the specific, high-stakes domain of space governance, demonstrating how youth exclusion is not merely a participatory gap but a systemic failure of forward-looking accountability.

The most practical implication for South Africa is the urgent need to institutionalise youth engagement beyond tokenistic consultation. This could involve mandating youth advisory panels within

SANSA and the Independent Communications Authority of South Africa (ICASA) with real agenda-setting power, or creating open innovation platforms where youth can co-design applications for remote sensing data addressing community-level challenges. As Farazmand underscores, adaptive governance requires continuous learning and the integration of diverse societal intelligence.

Therefore, the essential next step is empirical research to document and amplify existing youth perspectives on space technology in South Africa, providing an evidence base to catalyse governance reform. Without such deliberate steps, South Africa's advancements in space technology risk being undermined by a governance legacy that fails its future generations.

Contributions

This commentary makes a distinct scholarly contribution by centring the perspectives of African youth, a demographic critically absent from mainstream governance literature on space technologies. It advances the conceptual framework of intergenerational justice within the political science of outer space, applying it specifically to the African context of satellite communications and remote sensing.

Practically, the analysis provides timely evidence-based insights for policymakers in South Africa and across the continent, highlighting how current governance structures may fail to address the long-term interests and equitable inclusion of younger generations in the digital and space economies of the 2020s.

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