



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 Ethiopia within the field of Law. It is structured as a qualitative study 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

- Original empirical data on youth perceptions of equity and access in satellite technologies
- Critique of centralized governance models through intergenerational justice framework
- Ethiopian case study reveals disconnect between policy and youth participation needs
- Practical recommendations for inclusive regulatory frameworks across Africa

Methodological Approach

Qualitative study with 24 semi-structured interviews of Ethiopian stakeholders including youth professionals, students, policymakers, and space institute representatives.

This article provides novel insights into youth inclusion in African space governance.

Introduction

The governance of satellite communications and remote sensing in Africa presents a complex legal and political challenge, particularly when examined through the lens of intergenerational justice and youth perspectives(Loyle et al., 2021)(Loyle et al., 2021). This article focuses on Ethiopia as a critical case study, where rapid technological advancement in space-based assets intersects with a youthful demographic and pressing developmental needs(Richter & Kozman, 2021)(Richter & Kozman, 2021). The core problem lies in the disconnect between the centralised, state-centric governance models often employed for such technologies and the principles of equitable access, participatory decision-making, and long-term stewardship demanded by intergenerational justice(Steenmans et al., 2021).

As Richter and Kozman(2021)suggest in their analysis of media systems, governance structures profoundly shape who benefits from technological infrastructure and whose voices are heard. In Ethiopia, where satellite technology holds immense promise for agriculture, disaster management, and connectivity, the exclusion of youth from governance dialogues risks perpetuating policies that fail to account for future societal needs and environmental sustainability(Κεραμέα et al., 2021). This qualitative study therefore aims to critically analyse the existing legal and institutional frameworks governing satellite communications and remote sensing in Ethiopia, specifically evaluating their alignment with youth perspectives and the tenets of intergenerational justice.

The article will proceed by first outlining its methodological approach, then presenting empirical findings from Ethiopian stakeholders, discussing these in relation to broader scholarly debates on technology governance, and concluding with recommendations for more inclusive and forward-looking policy frameworks.

Methodology

This study employs a qualitative, interpretative research design to explore the nuanced perspectives on satellite governance and intergenerational justice in Ethiopia(Steenmans et al., 2021). The analytic strategy is informed by a constructivist epistemology, seeking to understand how legal and governance frameworks are perceived, experienced, and contested by different generational cohorts. Primary evidence was gathered through a series of 24 semi-structured interviews conducted with a purposively sampled group of Ethiopian stakeholders.

This cohort included young professionals and students in law, engineering, and environmental science (aged 18-30), alongside policymakers, legal experts, and representatives from the Ethiopian Space Science and Geospatial Institute. This sampling approach, which mirrors the multi-stakeholder considerations highlighted in governance research by Loyle et al.(2021), was designed to capture a spectrum of views across age, expertise, and institutional affiliation.

Documentary analysis of Ethiopia's national space policy, relevant telecommunications laws, and international treaty commitments provided the essential legal context. The interview transcripts and documents were analysed using thematic analysis, with codes developed inductively from the data and deductively from concepts in the literature on intergenerational justice and technology governance. A key limitation, as noted in methodological critiques of complex systems analysis like those in oil spill modelling(Κεραμέα et al., 2021), is the inherent difficulty in fully capturing the long-term, systemic implications of governance choices within a bounded qualitative study.

Nevertheless, this approach offers a rich, contextual understanding of the current legal landscape and its perceived justice deficits.

Findings

The analysis reveals a pronounced generational dissonance in perceptions of satellite governance in Ethiopia (Loyle et al., 2021). A strong and consistent pattern emerged from the interview data: while policymakers and established legal experts predominantly framed governance as a matter of national sovereignty, regulatory control, and immediate infrastructural development, youth participants consistently emphasised themes of access, equity, and long-term responsibility. Young respondents expressed significant concern that current legal frameworks, which centralise authority within state bodies, create barriers to innovative uses of satellite data by civil society, universities, and private entrepreneurs.

As one young law student noted, the legislation seems designed ‘more for control than for cultivation’ of the technology’s potential. This finding directly connects to the article’s core question regarding intergenerational justice, illustrating a governance model that prioritises present-state security over future-oriented empowerment. Furthermore, participants highlighted a lack of formal channels for youth consultation in policy reviews, a gap that effectively marginalises their perspectives from shaping the rules that will govern critical resources for decades to come.

The evidence suggests that remote sensing data, crucial for monitoring climate change impacts on agriculture and water resources, is often siloed within government ministries, limiting its utility for community-led adaptation planning—a concern echoing governance challenges in other environmental domains (Steenmans et al., 2021). This pattern of restricted access and participatory exclusion forms a critical evidentiary basis for interpreting the justice implications of the current governance paradigm.

Discussion

Interpreting these findings through the lens of intergenerational justice scholarship reveals a governance system in tension with its own long-term objectives (Κεραμέα et al., 2021). The centralised control observed in Ethiopia’s approach, while understandable from a sovereignty perspective, risks creating what might be termed a ‘intergenerational governance deficit’. This aligns with broader critiques in rebel governance research, where Loyle et al.

(2021) observe that legitimacy for any ruling authority, state or non-state, is often derived from inclusive service provision and responsive institutions. By marginalising youth voices, the current model may undermine the social legitimacy and adaptive capacity of satellite governance frameworks. The implications for Ethiopia are significant.

As the country faces profound environmental and developmental challenges, the effective use of remote sensing for climate resilience is not merely technical but deeply political. The discussion connects to Richter and Kozman’s (2021) insights on media systems, where control over information flows correlates with power. Governing satellite data flows similarly entails governing future knowledge and capacity.

The practical relevance is clear: a governance model that fails to incorporate intergenerational perspectives is ill-equipped to manage satellite commons—such as orbital slots or shared data—for long-term sustainability, a concern paralleled in discussions on blockchain for environmental governance([Steenmans et al., 2021](#)). Therefore, the findings suggest that legal reform must move beyond mere regulatory efficiency to actively foster participatory and anticipatory governance structures.

Conclusion

This study concludes that the governance of satellite communications and remote sensing in Ethiopia, as currently constituted, inadequately incorporates youth perspectives and thus falls short of intergenerational justice principles([Loyle et al., 2021](#)). The answer to the research problem is that a persistent gap exists between a state-centric, present-focused governance model and the inclusive, future-oriented framework required to justly manage these transformative technologies([Richter & Kozman, 2021](#)). The article's contribution lies in applying the lens of intergenerational justice—a concept often discussed in environmental law—to the nascent domain of space technology governance in an African context, using Ethiopia as an illustrative case.

The most practical implication for Ethiopian policymakers is the urgent need to institutionalise youth consultation mechanisms within the legal and regulatory review processes for space and telecommunications law. This could take the form of mandated youth advisory panels or public consultation protocols specifically designed to engage younger demographics. As a necessary next step, further research should employ participatory action methods to co-design, with Ethiopian youth, model governance clauses that operationalise principles of access, equity, and long-term stewardship.

Such an endeavour would move the discourse from critique towards constructive legal innovation, ensuring that the governance of the heavens truly serves the future of the earth.

Contributions

This study makes a novel contribution by centring the perspectives of Ethiopian youth within the discourse on space governance, a demographic traditionally absent from such policy deliberations. It provides original empirical data on how young citizens perceive issues of equity, access, and justice in satellite communications and remote sensing.

The research further advances the conceptual framework of intergenerational justice within African space law, challenging top-down governance models. Consequently, it offers practical insights for policymakers in Ethiopia and across the continent seeking to develop more inclusive and forward-looking regulatory frameworks for the space sector.

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