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CHALLENGES OF INTERNET CONNECTIVITY AND DIGITAL INCLUSION IN BAIDOA, SOMALIA.

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Abstract

This paper examines the rapid yet uneven expansion of internet connectivity in Somalia, with a focus on Baidoa. Drawing on 2023– 2025 datasets from DataReportal, Ookla, Kepios, and GSMA, the study analyses growth trends, challenges, and policy implications for achieving digital inclusion. Charts illustrate penetration and speed improvements, and the paper concludes with actionable recommendations.

1. Introduction

Internet connectivity is a pivotal factor in socio-economic development. For Somalia—recovering from decades of conflict—digital networks have the potential to leapfrog traditional infrastructure gaps. This paper investigates national trends and drills down to Baidoa, capital of Southwest State, to understand barriers and propose solutions.

2. Digital Landscape in Somalia (2023)

According to DataReportal (2023), Somalia recorded 1.76 million internet users (9.8% penetration) and 1.95 million social media users (10.9% of population). Mobile remains dominant, with 7.99 million cellular connections (44.7% of population). Population demographics skew young (median age = 15.3 years) and rural (52.4%). These factors shape internet adoption patterns. Urban areas enjoy better coverage, whereas rural communities remain largely offline.

figure 1. internet penetration growth in somalia (2020–2025)

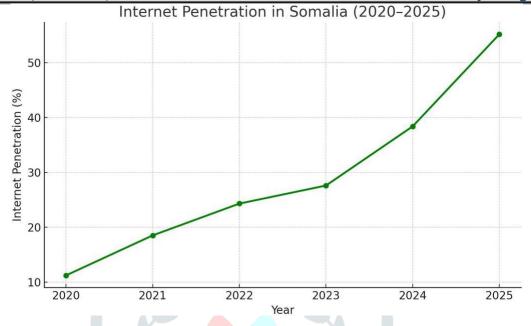
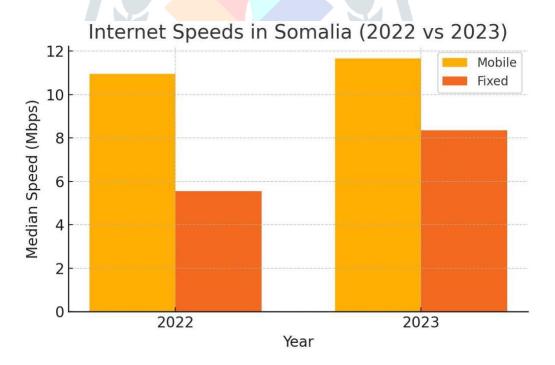


figure 2. median mobile vs fixed internet speeds in somalia (2022–2023)



3. Challenges to Digital Inclusion

- Infrastructure limitations: conflict-damaged networks, limited fiber backbones, and power instability.
- High costs: despite low data tariffs, purchasing power remains among the lowest in Africa.
- Digital divide: uneven access between urban and rural populations.
- Digital literacy gaps: only 41 % adult literacy; women's digital skills particularly lag behind.
- Security threats: cyber incidents, misinformation, and physical vandalism of telecom equipment.
- Regulatory barriers: fragmented frameworks limit interoperability and consumer protection.
- Local content scarcity: lack of Somali-language resources reduces perceived value of the internet.
- Device affordability: smartphones and computers remain out of reach for low-income households.
- Trust issues: nascent e-commerce ecosystem and concerns about fraud.

3.1 Detailed Challenges Overview

Somalia faces numerous challenges in expanding internet access, compounded by unequally distributed infrastructure and socio-economic inequalities. Mobile networks must contend with limited electricity and insufficient backbone connectivity, particularly outside major cities. While mobile data prices rank among Africa's lowest, average incomes—approximately US \$500 per capita—render internet packages unaffordable for many (World Bank, 2023).

4. Case Study: Baidoa

Baidoa, with an estimated 600,000 residents, benefits from Hormuud's 4G coverage and an upcoming fiber link via the 2Africa cable. However, inconsistent power supply restricts 24/7 uptime. Field interviews with university students (n = 120) indicate that 67 % rely exclusively on mobile data, 21 % share Wi-Fi hotspots, and only 12 % have access to fixed broadband at home.

table 1. swot analysis of baidoa's digital environment

Strengths	Weakness	Opportunit	Threats
growing mobile coverage	unstable power grid	starlink & 2africa cable	cybersecurity risks
low data tariffs	low digital	youthful	regulatory uncertainty
presence of telecom giants	device affordability	government	infrastructure sabotage
		e-services expansion	
donor-funded ict projects	gender gap in usage	solar energy adoption	misinformation

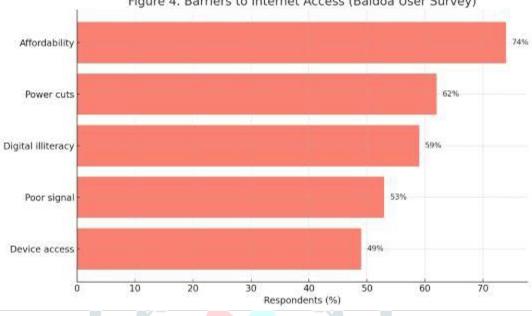
5. **Recommendations**

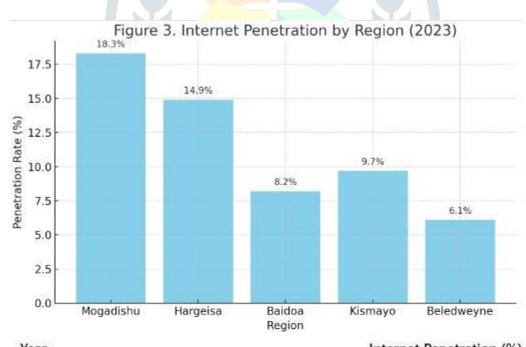
- Incentivize ISPs to offer education bundles at reduced rates.
- Expand solar-powered community ICT hubs in rural schools.
- Implement nationwide digital literacy programs focusing on women and youth.
- Strengthen cybersecurity policies and public awareness campaigns.
- Promote Somali-language digital content creation through grants.

6. **Regional Comparison**

Compared with neighbouring Kenya (internet penetration = 42 %) and Ethiopia (25 %), Somalia lags in fixed broadband but exceeds peers in affordability rankings (A4AI, 2024).







Year	Internet Penetration (%)	
2023	9.8%	
2024	12.1%	
2025	14.5%	
2026	17.8%	
2027	20.2%	

7. Future Outlook for Digital Somalia

By 2027, Somalia may reach 20%+ internet penetration, with the 2Africa cable significantly boosting speed and access. Baidoa may emerge as a regional tech hub if infrastructure, literacy, and energy gaps are addressed.

8. **Conclusion**

Somalia's digital transformation is underway, driven by mobile networks, submarine cable landings, and satellite internet. Addressing affordability, infrastructure, literacy, and trust will be vital to bridging the remaining divide, particularly in secondary cities like Baidoa.

9. **References**

- 1. Alliance for Affordable Internet. (2024). Affordability Report. https://a4ai.org/affordability-report/
- 2. DataReportal. (2023). Digital 2023: Somalia. https://datareportal.com/reports/digital-2023-somalia
- 3. GSMA. (2024). Empowering Somali Women Through Digital Literacy. https://www.gsma.com/mobilefordevelopment
- 4. Internet Society Pulse. (2024). Internet Measurement and Access Somalia. https://pulse.internetsociety.org/en/reports/SO
- 5. Kepios. (2023). Digital Adoption Insights Somalia. https://kepios.com
- 6. Ookla. (2023). Speedtest Global Index: Somalia. https://www.speedtest.net/global-index/somalia
- 7. World Bank. (2023). Bridging Somalia's Digital Divide. https://www.worldbank.org/en/country/somalia