



[Digital Transformation, Sustainable Innovations and Development in the African Continent]

[Thursday 31st July and Friday 1st August 2025]

[KWUST 2025 Conference Proceedings]

ABSTRACT NO. 32

Digital and Participatory Approaches to Sustainable Livelihoods: A Case Study of Gataka Informal Settlement in Kenya

Mr. Musa Odundo & Mr. Archippus Malonza

Kiriri Women's University of Science and Technology, Kenya

ABSTRACT

In the context of Africa's rapid digital transformation and the pursuit of sustainable development, the concept of sustainable livelihoods is increasingly being reframed to incorporate not only economic and environmental dimensions, but also digital inclusion and participatory innovation. A sustainable livelihood ensures that individuals can meet their needs and improve their well-being without undermining the social and ecological systems that support them. This paper explores how community-driven and digitally enabled development initiatives can address multidimensional poverty and promote resilience within informal settlements. The study was guided by the following objectives: (1) To explore social and digital factors influencing poverty in the Gataka informal settlement in Kajiado County; (2) To investigate economic challenges and opportunities, particularly focusing on the digital economy and informal sector innovation; (3) To evaluate participatory and technological approaches for enhancing livelihood security and sustainable development in the community. Grounded in Social Contract Theory and Empowerment Theory, the research utilized a case study design focused on the dwellers of Gataka informal settlement. This approach allowed for deep engagement with the lived experiences of local communities. The study targeted traders in small and medium enterprises (SMEs), service providers, and both casual and permanent employees, with a sample of 85 participants drawn from various sectors and households. Data were collected using qualitative and participatory methods, analyzed thematically, and visualized using descriptive tables. Findings reveal that inclusive digital technologies, combined with community empowerment initiatives, play a critical role in addressing structural poverty. Access to digital tools and platforms for financial services, education, health, and small enterprise development significantly influenced livelihood outcomes. The study underscores the need for integrated interventions that promote digital literacy, economic opportunity, and social inclusion through community-led and context-sensitive approaches. The paper concludes that sustainable innovations in African informal settlements must be participatory, digital, and locally grounded. Recommendations include strengthening multi-stakeholder collaboration, investing in grassroots digital infrastructure, and enabling policy environments that support bottom-up development. Such efforts are essential for fostering long-term resilience, self-reliance, and equitable growth in marginalized communities.

