

# A Cooperative Transport Framework

*Theorising Bicycle Ambulances for Emergency Obstetric Access in Rural Rukwa*

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## ABSTRACT

Emergency obstetric care access in remote sub-Saharan Africa remains a critical challenge, with geographical and financial barriers leading to high maternal mortality. The Rukwa Region exemplifies this, where dispersed settlements and poor road infrastructure severely limit timely referral to health facilities. This article develops a novel theoretical framework to analyse the potential impact of community-owned bicycle ambulance cooperatives on emergency obstetric access. It aims to conceptualise the socio-economic and operational mechanisms through which such cooperatives could function and theorise their systemic effects. The framework is constructed through a synthesis of social practice theory, cooperative economics, and health geography. It integrates concepts of community resource pooling, gendered labour, and spatial negotiation to model the cooperative's operation within existing village transport ecosystems. The framework posits that a successful cooperative model requires a minimum threshold of community participation, theorising that engagement from over 60% of village households is critical for financial viability and social legitimacy. It highlights the reconfiguration of gendered care labour as a central, under-theorised mechanism for sustaining the service. The Cooperative Transport Framework provides a robust theoretical lens for understanding how community-managed transport interventions can mitigate spatial inequities in healthcare. It moves beyond technocratic solutions to centre social organisation and collective ownership as foundational to sustainable access. Future empirical research should apply this framework to evaluate existing bicycle ambulance projects. Policymakers should integrate cooperative principles and gendered labour analysis into the design and funding of community transport solutions for maternal health. maternal health, transport cooperatives, spatial equity, social practice theory, rural accessibility, community health systems This article provides the first theoretical framework specifically designed to analyse bicycle ambulance cooperatives as integrated socio-technical systems, offering a new model for conceptualising community-driven transport solutions in African development studies.

**Keywords:** *Emergency obstetric care, sub-Saharan Africa, community-based cooperatives, transport intervention, maternal mortality, rural health systems, Tanzania*

### Article Highlights

- Integrates social practice theory, cooperative economics, and health geography.
- Centers community resource pooling and gendered labour as key mechanisms.
- Models cooperative operation within existing village transport ecosystems.
- Moves beyond technocratic solutions to centre social organisation.

### Core Theoretical Contribution

The Cooperative Transport Framework provides the first theoretical lens designed specifically to analyse bicycle ambulance cooperatives as integrated socio-technical systems.

*This article develops a novel theoretical framework for analysing community transport interventions.*



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