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Service Enablers of Internet Technology Usage in Women-Led Community-Based Organization Projects in Kisumu Central Sub County

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Abstract: *This study examines the service enablers that facilitate Internet Technology (IT) usage among women-led Community-Based Organizations (CBOs) in Kisumu Central, Kenya. As digital transformation accelerates globally, understanding the factors that enable or hinder technology adoption in grassroots organizations becomes crucial for sustainable development. This research identifies and analyzes the key service enablers that influence IT adoption and utilization among women-led CBOs, providing insights for policymakers, development practitioners, and organizational leaders. The findings reveal critical infrastructure, capacity-building, and institutional factors that determine successful technology integration in community development initiatives.*

Keywords: *Internet Technology, Women-led CBOs, Service Enablers, Digital Inclusion, Community Development, Kenya.*

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I. Introduction

The digital revolution has fundamentally transformed how organizations operate, communicate, and deliver services globally (Olawale & Mutongoza, 2021). For Community-Based Organizations (CBOs), particularly those led by women in developing regions, Internet Technology presents unprecedented opportunities to enhance organizational effectiveness, expand outreach, and improve project outcomes. However, the successful adoption and utilization of IT depends significantly on the presence of enabling factors that support technology integration.

In the context of Kisumu Central, Kenya, women-led CBOs operate within a unique socio-economic environment characterized by diverse challenges and opportunities. Understanding the service enablers that facilitate IT usage in these organizations is essential for developing effective strategies that promote digital inclusion and organizational sustainability. This study addresses the critical gap in empirical research on the specific factors that enable successful IT adoption among women-led CBOs in urban Kenya.

II. Literature Review

II.1 Theoretical Framework

The Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) provide foundational frameworks for understanding technology adoption in organizational contexts. These models emphasize the importance of perceived usefulness, ease of use, and facilitating conditions in determining technology acceptance (Venkatesh et al., 2003).

In the context of women-led CBOs, additional factors such as gender-specific barriers, cultural considerations, and organizational capacity become critical determinants of technology adoption. The concept of "service enablers" encompasses the comprehensive set of factors that facilitate or inhibit technology usage, including technological infrastructure, human resources, institutional support, and environmental conditions.

II.II Digital Divide and Gender Disparities

The digital divide remains a significant challenge in developing countries, with women often experiencing greater barriers to technology access and usage (Mariscal et al., 2020). Research indicates that women-led organizations face unique challenges including limited financial resources, inadequate technical skills, and cultural constraints that affect their ability to leverage digital technologies effectively.

II.III Enabling Factors for Technology Adoption

Previous studies have identified several categories of enabling factors for technology adoption in non-profit organizations:

Infrastructure Enablers: Reliable internet connectivity, electricity supply, and telecommunications infrastructure form the foundation for successful IT adoption (ITU, 2021).

Capacity Enablers: Technical skills, digital literacy, and organizational learning capabilities determine how effectively organizations can integrate and utilize technology (UN Women, 2021).

Institutional Enablers: Supportive policies, regulatory frameworks, and institutional partnerships create an environment conducive to technology adoption (World Bank, 2022).

Financial Enablers: Access to funding, affordable technology solutions, and sustainable financing mechanisms enable organizations to invest in and maintain technological infrastructure (African Development Bank, 2021).

III. Methodology

This study employed a mixed-methods approach combining quantitative surveys and qualitative interviews to comprehensively examine service enablers of IT usage among women-led CBOs in Kisumu Central. The research design allowed for triangulation of data sources and provided both breadth and depth of understanding regarding the factors that enable technology adoption.

III.I Study Area

Kisumu Central, located in Kisumu County, Kenya, was selected as the study area due to its concentration of women-led CBOs and its status as a regional urban center with varying levels of digital infrastructure development. The area provides a representative context for understanding IT adoption challenges and opportunities in similar urban settings across Kenya.

III.II Sampling Strategy

The study targeted registered women-led CBOs in Kisumu Central, focusing on organizations that had been operational for at least two years and had some level of IT exposure. A purposive sampling approach was employed to select organizations representing different sectors including health, education, economic empowerment, and environmental management.

III.III Data Collection Methods

Quantitative Component: Structured questionnaires were administered to CBO leaders and members to assess the presence and importance of various service enablers. The questionnaire covered infrastructure availability, capacity levels, institutional support, and financial resources.

Qualitative Component: In-depth interviews were conducted with key informants including CBO leaders, IT service providers, government officials, and development partners to gain deeper insights into the enabling factors and their interactions.

III.IV Data Analysis

Quantitative data was analyzed using descriptive statistics and correlation analysis to identify patterns and relationships among service enablers. Qualitative data was analyzed thematically to identify key themes and provide contextual understanding of the enabling factors.

IV. Findings and Discussion

IV.I Infrastructure Enablers

The analysis revealed that infrastructure enablers play a foundational role in determining IT usage among women-led CBOs in Kisumu Central. The key infrastructure enablers identified include:

Internet Connectivity: Reliable broadband internet access emerged as the most critical infrastructure enabler. Organizations with consistent internet connectivity demonstrated higher levels of IT adoption and more sophisticated usage patterns. However, the study found significant variations in connectivity quality across different areas of Kisumu Central, with some CBOs experiencing frequent disruptions that hindered their technology usage.

Electricity Supply: Stable electricity supply was identified as a prerequisite for sustained IT usage. Power outages and unreliable electricity supply created barriers to consistent technology utilization, particularly for organizations lacking backup power solutions.
Telecommunications Infrastructure: The presence of robust mobile network coverage facilitated IT adoption, particularly for organizations relying on mobile-based solutions for communication and service delivery. The widespread availability of mobile networks in Kisumu Central provided a foundation for technology integration even in areas with limited fixed broadband infrastructure.

IV.II Capacity Enablers
Human resource capacity emerged as a critical determinant of successful IT adoption among women-led CBOs. The key capacity enablers include:
Digital Literacy: Organizations with members possessing basic digital literacy skills demonstrated higher levels of technology adoption and more effective usage patterns. The study found that digital literacy levels varied significantly among CBOs, with younger organizations and those with educated leadership showing higher digital competency.
Technical Skills: The presence of individuals with technical skills within the organization or access to external technical support enabled more sophisticated IT applications. CBOs with technical expertise were better positioned to troubleshoot problems, customize solutions, and integrate technology into their operations effectively.
Training and Capacity Building: Access to ongoing training opportunities and capacity building programs significantly enhanced IT adoption rates. Organizations that had participated in digital literacy programs or received technical training demonstrated more confident and effective technology usage.

IV.III Institutional Enablers
The institutional environment plays a crucial role in facilitating or hindering IT adoption among women-led CBOs. Key institutional enablers include:
Government Support: Supportive government policies and programs that promote digital inclusion and provide resources for technology adoption create an enabling environment for CBOs. The study found that organizations aware of and able to access government support programs showed higher levels of IT adoption.
Partnership Networks: Strong partnerships with development organizations, NGOs, and private sector entities provided CBOs with access to technical resources, training opportunities, and financial support for technology adoption. Organizations with robust partnership networks demonstrated more successful IT integration.
Regulatory Framework: Clear and supportive regulatory frameworks that facilitate technology adoption and protect digital rights create confidence among CBOs to invest in and utilize IT solutions. The study found that regulatory clarity reduced barriers to technology adoption and encouraged innovation.

IV.IV Financial Enablers
Financial resources and access to affordable technology solutions significantly influence IT adoption among women-led CBOs. Key financial enablers include:
Funding Availability: Access to grants, donations, and funding specifically allocated for technology adoption enabled CBOs to invest in necessary hardware, software, and connectivity. Organizations with dedicated technology budgets showed more comprehensive IT integration.
Affordable Technology Solutions: The availability of cost-effective technology solutions, including open-source software, affordable hardware, and flexible payment plans, reduced financial barriers to adoption. CBOs that could access affordable solutions demonstrated higher adoption rates.
Sustainable Financing Models: Organizations with sustainable financing mechanisms for ongoing technology costs, including internet subscriptions, maintenance, and upgrades, maintained more consistent IT usage over time.

IV.V Social and Cultural Enablers
The study identified several social and cultural factors that influence IT adoption among women-led CBOs:
Community Acceptance: Community support and acceptance of technology usage by women-led organizations created a positive environment for IT adoption. Organizations operating in communities with positive attitudes toward women's technology use faced fewer barriers to adoption.
Leadership Commitment: Strong leadership commitment to technology adoption and digital transformation significantly influenced organizational IT usage. Leaders who championed technology adoption and invested in capacity building facilitated more successful integration.

Gender-Sensitive Approaches: Technology solutions and support programs that considered gender-specific needs and constraints enabled more effective adoption among women-led CBOs. Organizations that received gender-sensitive technical support demonstrated better outcomes.

V. Implications and Recommendations

V.I Policy Implications

The findings have significant implications for policy development and implementation:

Infrastructure Investment: Governments and development partners should prioritize investment in digital infrastructure, particularly in underserved areas, to create an enabling environment for technology adoption by women-led CBOs.

Capacity Building Programs: Comprehensive digital literacy and capacity building programs specifically designed for women-led CBOs should be developed and implemented to address skill gaps and enhance technology adoption.

Financial Support Mechanisms: Innovative financing mechanisms, including grants, subsidies, and flexible payment plans, should be developed to reduce financial barriers to technology adoption.

V.II Practical Recommendations

For CBO Leaders:

- Develop organizational technology strategies that align with mission and objectives
- Invest in capacity building and digital literacy training for members
- Build strategic partnerships to access technical resources and support
- Create sustainable financing plans for technology adoption and maintenance

For Development Partners:

- Design gender-sensitive technology support programs
- Provide comprehensive capacity building that goes beyond basic digital literacy
- Facilitate partnerships between CBOs and technology service providers
- Support the development of affordable technology solutions tailored to CBO needs

For Government:

- Develop and implement policies that promote digital inclusion for women-led organizations
- Invest in digital infrastructure development in underserved areas
- Create regulatory frameworks that support technology adoption and innovation
- Establish programs that provide technical and financial support for CBO technology adoption

VI. Conclusion

This study has identified and analyzed the key service enablers that facilitate Internet Technology usage among women-led CBOs in Kisumu Central. The findings reveal that successful IT adoption depends on a complex interplay of infrastructure, capacity, institutional, financial, and socio-cultural factors. While infrastructure and capacity enablers provide the foundation for technology adoption, institutional and financial enablers create the supportive environment necessary for sustained usage.

The study contributes to the growing body of knowledge on digital inclusion and technology adoption in developing countries, particularly focusing on women-led organizations. The identification of specific service enablers provides a framework for understanding and addressing the factors that influence technology adoption in similar contexts.

Moving forward, there is a need for coordinated efforts among governments, development partners, and technology service providers to address the identified barriers and strengthen the enabling environment for IT adoption among women-led CBOs. By addressing these service enablers comprehensively, stakeholders can enhance the ability of women-led CBOs to leverage technology for improved organizational performance and greater impact in their communities.

Future research should explore the dynamic interactions among different service enablers and their relative importance in different contexts. Additionally, longitudinal studies would provide valuable insights into how service enablers evolve over time and their long-term impact on organizational sustainability and effectiveness.

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