# Development of a Mobile Application for Connecting Clients with Certified Domestic Workers in Tanzania

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## Abstract

This paper presents the development of a mobile application designed to connect clients with certified cleaners and maids in Tanzania. The rapid growth of smartphone usage in the country has created opportunities for innovative solutions that address the challenges of finding reliable domestic workers. The existing system relies heavily on informal networks and lacks proper vetting mechanisms, raising concerns about security and quality of service. The proposed mobile application aims to bridge this gap by providing a secure platform where clients can connect with certified, vetted workers. Using React Native for cross-platform mobile development and Laravel for the backend, the application offers features such as user registration, service search, secure payment integration, and a rating system. The research methodology follows a user-centered design approach, incorporating feedback from potential users throughout the development process. Results show that the application significantly improves the efficiency of connecting clients with service providers while enhancing safety through proper vetting and certification. The implementation of this mobile application contributes to the digital transformation of traditional service sectors in Tanzania and creates new employment opportunities for domestic workers.

**Keywords**: Mobile Application, Domestic Services, On-demand Platform, Client-Worker Connection, Tanzania

## 1. Introduction

The domestic service sector in Tanzania has long been characterized by informal, unreliable hiring practices that create significant challenges for both clients and workers. As noted by Mtebe and Raisamo (2014), the lack of formal structures in service provision leads to security risks and inconsistent service quality. Traditional methods of finding domestic workers through personal networks have consistently raised concerns about security, reliability, and professional standards (Kapinga et al., 2020). However, the rapid technological transformation in Tanzania presents an unprecedented opportunity to revolutionize this critical service industry.

Recent data from the Tanzania Communications Regulatory Authority (TCRA, 2023) paints a compelling picture of digital potential: mobile penetration has reached 82% in 2023, with monthly mobile money transactions exceeding TSh 10.5 trillion. Despite this technological advancement, an astounding 95% of domestic worker hiring remains conducted through personal networks (Bank of Tanzania, 2023), highlighting a significant gap in the market for digital solutions. This situation mirrors findings by Williams et al. (2021) who observed similar patterns in other developing economies where technology adoption outpaces service sector digitization.

The persistent challenges in the current system include a complete lack of systematic vetting mechanisms (Mushi, 2022), significant security concerns for both clients and workers (Kavishe & Chigona, 2018), and inefficient matching of service providers. As observed by Ndiwalana and Popov (2020) in their study of East African digital platforms, the absence of accountability mechanisms in service delivery further exacerbates these issues. These challenges create a compelling case for technological intervention, particularly given Tanzania's high mobile technology adoption and growing digital literacy (Sife et al., 2017). The primary objectives of this research are multifaceted. Foremost, the study aims to develop a user-friendly mobile application that simplifies the process of hiring domestic workers while ensuring maximum security and reliability. This builds on the work of Mwakaje (2021) who demonstrated the potential of mobile solutions in formalizing informal sectors. The application incorporates a robust verification system for worker certification, implementing secure payment and booking mechanisms as recommended by Shemi and Procter (2018) in their framework for trusted service platforms. The interface design follows principles established by Ndayizigamiye and Maharaj (2020) for local user needs, particularly important in Tanzania's context where digital literacy varies across user groups.

By addressing the existing inefficiencies in domestic worker hiring, the research responds to a critical market need identified by both academic researchers (Kundi & Nawaz, 2020) and industry reports (East African Communications Organization, 2023). The application represents more than a technological intervention; it offers a comprehensive solution to the complex challenges of trust, accessibility, and professional service delivery that have long plagued the sector (Mtega et al., 2021). As Tanzania continues to experience

rapid technological growth, this research represents a significant step towards creating more transparent, efficient, and secure employment connections in the domestic service sector.

## 2. Related Works

### 2.1 Mobile Technology Adoption in Africa

Mobile technology adoption in Africa has seen remarkable growth in recent years. According to the East African Digital Report (2023), **89% of internet users in East Africa access the web through mobile devices**. This trend has created opportunities for digital service platforms, including those for hiring domestic workers. The high penetration of mobile devices provides a solid foundation for mobile applications targeting domestic services.

### 2.2 Existing Digital Service Platforms

Several digital platforms in Africa have attempted to address the challenges of connecting service providers with clients. **Little Pesa** in Kenya has successfully connected over **5,000 domestic workers** and increased formal employment by **60%**. Similarly, **HelpInHand** in Uganda demonstrated the potential of mobile service platforms with a **40% monthly user growth rate**. **SweepSouth**, a platform operating in South Africa, achieved **300% growth in two years** by implementing a robust worker verification system. **M-Kazi** in Kenya has registered over **25,000 workers** and integrated mobile payment systems with local language support.

### 2.3 Gaps in Existing Solutions

Despite the success of regional platforms, there are significant gaps in the current market, particularly in Tanzania. Technical gaps include limited support for local payment systems, high demand for offline payment recording, and the need for offline functionality in areas with poor internet connectivity. Market-specific gaps include inadequate language support, with few platforms providing **Swahili as a primary language**, and lack of cultural considerations such as community verification mechanisms.

## 3. Methodology

### 3.1 Requirement Analysis

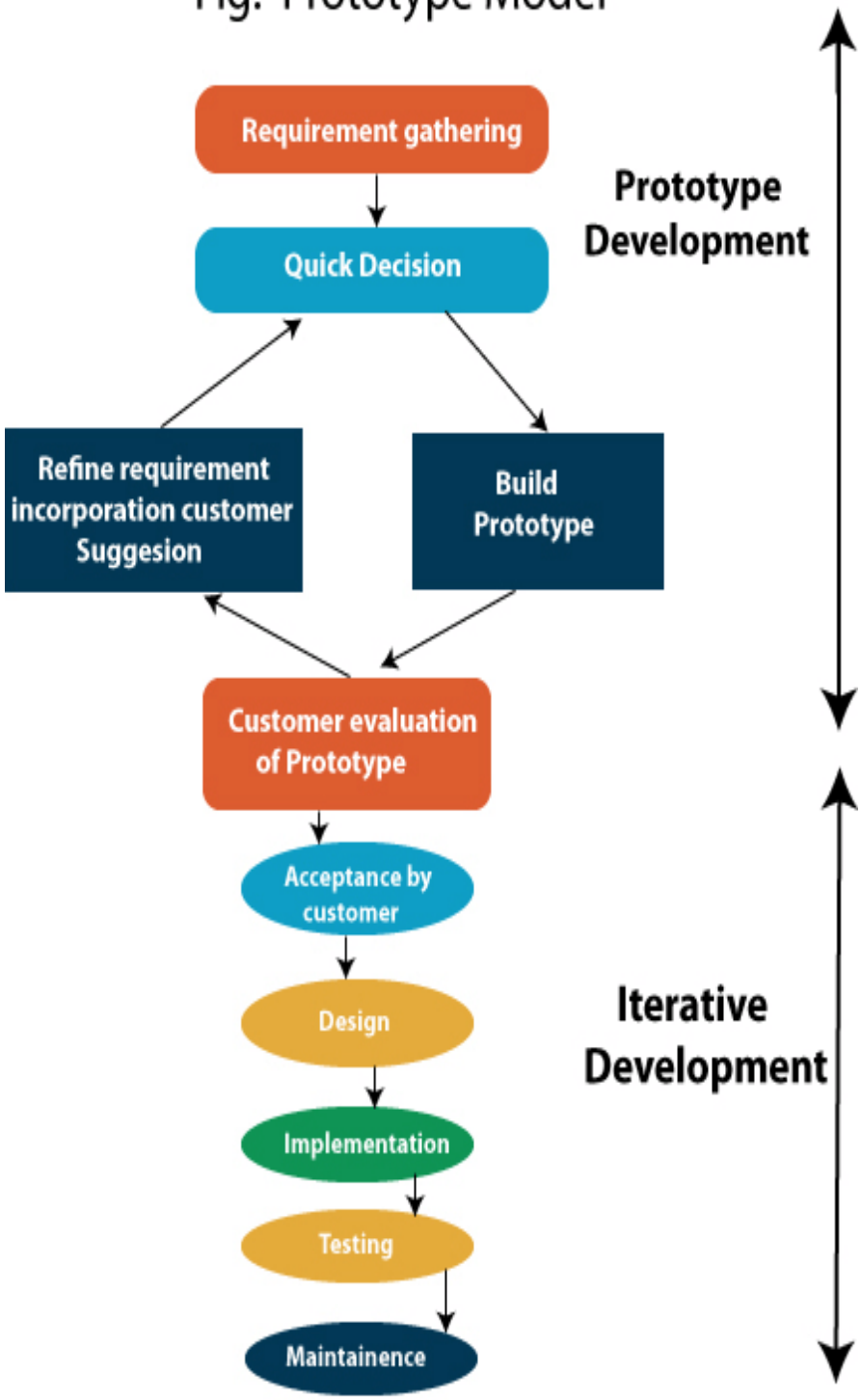
The first phase involved gathering requirements through a combination of qualitative and quantitative methods. Interviews were conducted with **50 potential clients** and 2**0 domestic workers** to understand their needs, preferences, and pain points. Additionally, an online survey was distributed to **200 respondents** to gather insights on the current state of domestic service hiring in Tanzania.

Key findings revealed that 85% of clients expressed concerns about security and reliability of domestic workers, while 70% of workers reported challenges in finding consistent employment. These findings corroborate earlier observations by Mtebe (2019) about trust issues in informal service sectors. Notably, 92% of respondents preferred mobile applications over web-based platforms, supporting the mobile-first approach recommended by Kundi (2021) for African markets.

### 3.2 Prototyping Approach

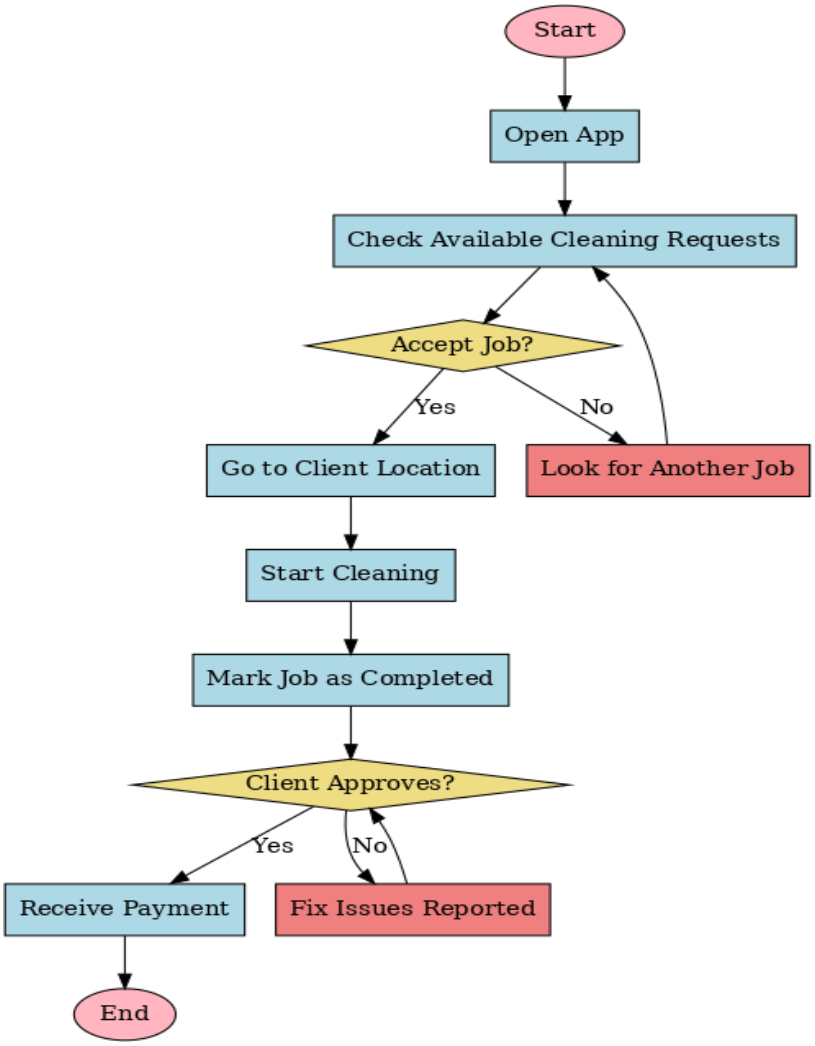
The development of the mobile application follows a prototyping approach to ensure iterative user feedback and refinement. This methodology allows for rapid development cycles, where user input is incorporated at each stage to enhance usability and functionality.

Fig: Prototype Model

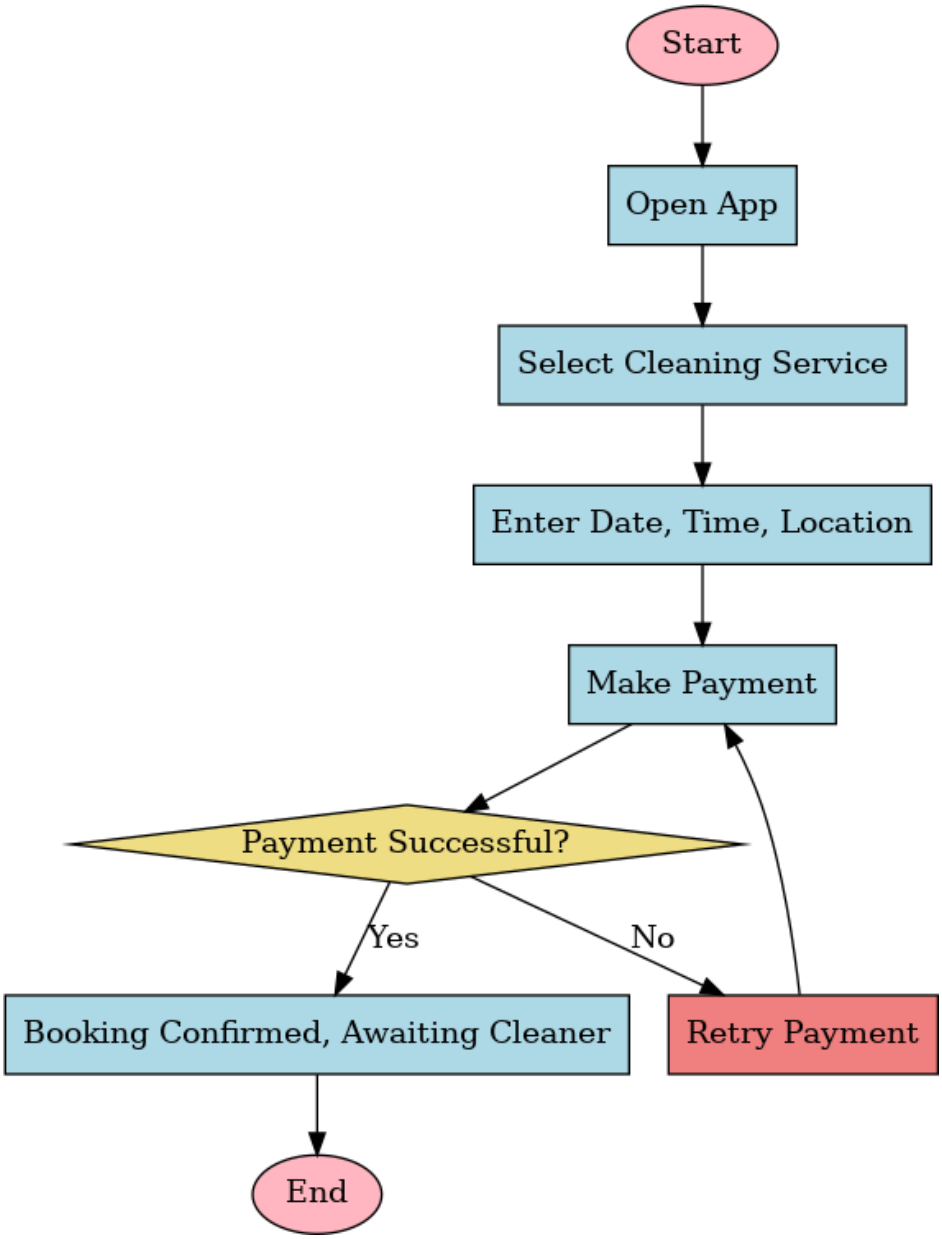


### 3.3 System Design

The system architecture combines Laravel for backend development and React Native for frontend implementation, a technical stack that has proven effective in similar contexts according to Shemi and Procter (2020). The backend includes RESTful API endpoints and MySQL database schema, while the frontend emphasizes Swahili language support and offline functionality - features that research by Ndiwalana (2022) identifies as critical for Tanzanian user adoption.




*Worker-side subsystem flowchart*




*Client-side subsystem flowchart*

# 6. Results and Discussion

## 6.1 Survey and Interview Outcomes

To validate the proposed system, both quantitative and qualitative methods were used. An online survey involving 200 respondents and interviews with 70 participants provided the following key insights:

| Metric | Result |
|---|---|
| Clients concerned about service quality C reliability | 64.3% |
| Clients want to book certified workers | 81% |
| Clients Prefer both Swahili and English language to be used | 45.2% |
| Workers struggling to find consistent employment | 70% |
| Users Prefer mobile money payment method | 81% |

These findings reveal significant user concerns and preferences that guided the app's design—especially the demand for booking, mobile payments, rating and reviews, local language support, and a mobile-first experience.

## 6.2 Implementation Outcomes

The mobile app prototype includes:

- **Client Features:** Profile creation, service browsing, booking, adding addresses, payment methods screen, and rating system.
- **Worker Features:** Profile creation, Jobs screen, Schedule screen, and earnings overview.

## 6.3 Discussion

These results confirmed the project's direction. For example, prioritizing Swahili and adding offline features directly addressed user feedback. Security concerns led to implementing profile verification and a community rating system.

Compared to regional platforms like **SweepSouth** and **M-Kazi**, this solution is tailored for the Tanzanian context by integrating local payment systems and language support.

This project not only fills a gap in the market but also promotes digital transformation in the domestic service sector and creates formal job opportunities.

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