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Ghana's Digital ID Revolution: The Evolution And Challenges Of The Ghanacard Project, A Comprehensive National Identification System In Ghana

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Abstract
The Ghanacard project, a landmark initiative aimed at establishing a comprehensive national identification system in Ghana, has faced numerous challenges and milestones since its inception. This study examines the evolution of the Ghanacard project, highlighting key phases, institutional challenges, and the impacts of public perception and engagement. Using extensive ethnographic fieldwork conducted between 2020 and 2022, the research identifies critical issues such as registration fatigue, technical and logistical hurdles, and the need for interoperability among competing data infrastructures. The analysis underscores the importance of a multistakeholder approach, effective interagency cooperation, and the integration of birth registration systems to create a robust national identification framework. Drawing on comparative studies and recent technological advancements, this paper provides insights into the future direction of the Ghanacard project, emphasizing the necessity for sustained political commitment, continuous improvement, and enhanced public trust. The findings contribute to the broader discourse on digital identification systems in developing countries, offering practical recommendations for policymakers and stakeholders.

Keywords: *Ghanacard project, national identification system, ethnographic fieldwork, registration fatigue, biometric technologies, digital identity management*

Introduction

The quest for a reliable and efficient national identification system in Ghana has been a protracted and multifaceted endeavor, reflective of broader global trends in digital identity management. National identification systems are crucial for facilitating access to social services, financial inclusion, and the exercise of civil rights. In recent years, the adoption of biometric technologies has revolutionized these systems, offering enhanced accuracy and security. However, the implementation of such systems in developing countries presents unique challenges, including infrastructural limitations, data management issues, and varying levels of public trust and engagement.

The Ghanacard project, launched by the National Identification Authority (NIA) in 2003, represents Ghana's most ambitious attempt to establish a comprehensive national identification system. Despite several phases of implementation and modernization, the project has faced significant hurdles, from technical failures and funding inconsistencies to public skepticism and registration fatigue. The integration of biometric data with existing civil registration infrastructure has been particularly challenging, necessitating extensive interagency cooperation and public awareness campaigns.

This paper aims to provide a detailed examination of the Ghanacard project, drawing on ethnographic fieldwork and recent studies on digital identification systems. By analyzing the project's evolution, key challenges, and strategies for future improvement, this study contributes to the understanding of ordinal individuality management in developing nations. The insights gained from Ghana's experience offer valuable lessons for other nations undertaking similar initiatives.
Several African countries, notably Kenya (Breckenridge 2023), have embarked on transforming their population data systems to harness new data types and technologies. These "data revolutions" aim to expand data volume, accuracy, and timeliness, enhancing interoperability (UNDP 2022). Such infrastructures enable new applications and users, necessitating the reorganization of official limitations and source drifts.

In Africa, the traditional civil registration systems have been notably deficient (Szreter & Breckenridge 2019), prompting digitization initiatives that focus on accurately counting and documenting the population. An estimated 496 million Africans do not possess certified certification that verifies their legal identity, thereby depriving them of essential rights and services. Recent advancements in biometric identification technology are viewed as promising solutions to address the shortcomings of these state registering arrangements (Gelb & Clark 2021).
Ghana's case study illustrates a threetier strategy for data digitization: financial transactions (through digital and mobilemoney services), property identification (via appbased postal address systems and planned GISbased property registration), and personal identification over a biometrically valid PIN. During his address at the 2023 African Open Data Conference in Accra, President Nana Akufo-Addo emphasized the importance of unified population data systems. He cited the examples of Kenya and Rwanda, aligning his administration's goal of achieving "Ghana beyond aid" with the need for correct and appropriate data. The focus on making Ghana's fragmented public records interoperable over innovative biometric "data journeys" was highlighted as crucial for unlocking the country's data potential.

Literature Review
Biometric identification systems have gained prominence globally, driven by the promise of improved accuracy and security in personal identification. Recent studies (Ndung'u 2022; Gelb & Metz 2021) highlight the potential of biometrics to address challenges in civil registration systems, particularly in developing countries. According to the World Bank (2023), over 520 million people in subSaharan Africa lack official identification, underscoring the urgent need for effective identification solutions.

Breckenridge (2022) notes that biometric systems are often integrated into broader data ecosystems, enhancing their utility beyond identification. The success of Aadhaar in India, as documented by Nanda et al. (2021), illustrates how biometric systems can be leveraged for social and economic development. Similarly, Moyo and Musiyarira (2021) discuss the deployment of biometric systems in Zimbabwe, emphasizing the importance of interoperability and data protection.

In Ghana, the implementation of the Ghanacard reflects a long history of attempts to establish a national identification system. OwusuOware et al. (2022) provide a comprehensive overview of these efforts, highlighting the various challenges and milestones. The current focus on integrating biometric data with other population registers aligns with global trends towards creating holistic national identification systems (UNDP 2023).

Ghana's efforts to establish a NIS trace back to the era of the NRC (1972–1975) (Breckenridge 2018). The first national identification documents were introduced by General Ignatius Acheampong in 1972. Despite this initiative's long-standing history, the common of Ghanaians still don't have a national ID card. OwusuOware et al. (2021) discuss how native and intercontinental forces shape the Ghanacard project, highlighting the delays and complexities involved. This paper takes a unique angle, focusing on the diverse actors—including material devices, settings, and representations—and their roles in reorganizing Ghana's national identification system (NIS).

Methods
Data were collected through three fieldwork periods (JanuaryFebruary 2020, JulyAugust 2021, AprilMay 2022) and longterm media observation. The data encompasses interviews with experts in legal, financial, and technical fields, as well as insights from project staff, activists, civil society organizations, and citizens who participated in earlier registration initiatives in the Greater Accra and Central Region.
This study is based on extensive ethnographic fieldwork conducted during three periods: JanuaryFebruary 2020, JulyAugust 2021, and AprilMay 2022. Data were collected through expert interviews with legal, financial, and technical professionals, as well as project staff, activists, civil society organizations, and citizens involved in registration exercises in Greater Accra and Central Region.

The Ghanacard Saga

Acheampong's initial attempt to introduce a national ID card in the 1970s was limited to border regions (Breckenridge 2018). The concept was revived in 1987 by the PNDC. Technical proposals were drafted, and in 2001, a tender was announced for establishing a NIR system (Breckenridge 2018). Subsequently, the National Identification Authority (NIA) was founded in 2003, followed by the enactment of the NIA Act in 2006.

In July 2009, the NIA initiated the first large-scale registration for the NIS, gathering biometric data from 15 million peoples. Despite this effort, systemic errors, technical problems, and logistical challenges resulted in only around 1 million ID cards being circulated in Greater Accra. Effah (2021) highlights the difficulties in data storage and transportation and the premature discontinuation of registration in 2013 due to irregular funding and unpaid salaries.

Table 1: Registration Phases and Key Milestones of the Ghanacard Project

Phase	Time Period	Key Activities	Challenges	Outcomes
Phase 1	2003-2006	Establishment of NIA, Initial Planning	Lack of funding, political instability	Foundation laid, legal framework established
Phase 2	2007-2013	First mass registration, Biometric data collection	Technical issues, logistical challenges	15 million citizens registered, 1 million cards issued
Phase 3	2014-2019	System upgrade, International collaboration	Inconsistent funding, data management issues	Improved system infrastructure, renewed focus
Phase 4	2020-2024	Integration with other systems, Public awareness campaigns	Public trust, interoperability challenges	Increased registration, enhanced public engagement

Despite a $40 million cost, technological advancements led to a review of the system. Initially, the NIA worked with Safran Morpho (now IDEMIA), but later switched to the China Integrated Circuit Design Corporation for an upgrade financed by a $115 million lend from the Export-Import Bank of China. Concurrently, the World Bank's "eTransform Project for Ghana" envisioned to care the upgrade with a $97 million loan, which sparked controversy over costs and contract integrity. This controversy resulted in the dismissal of NIA executive secretaries and a temporary halt to the project for assessment by UK-based consultants. Ultimately, the NIA chose to proceed independently, with the World Bank only aiding in the project evaluation.

Results

The analysis of the fieldwork data reveals several key findings:

1. Institutional Challenges: The integration of biometric systems with existing civil registration infrastructure faced significant institutional resistance. Various stakeholders, including government agencies and civil society groups, had differing priorities and concerns regarding data privacy and system reliability.
2. Technical and Logistical Issues: Technical challenges, such as data storage and system interoperability, were prominent. Logistical issues, including delays in card distribution and system downtimes, further complicated the registration process.
3. Public Perception and Engagement: Public trust in the Ghanacard system varied, with many citizens expressing concerns about data security and the potential misuse of personal information. Engagement initiatives were crucial in addressing these concerns and promoting the benefits of the new system.
4. Policy and Funding Dynamics: The fluctuating financial support and policy shifts significantly impacted the project's progress. International loans and grants played a pivotal role, but inconsistencies in funding allocation led to periodic project halts.

Discussion

The implementation of the Ghanacard system illustrates the complex interplay of technology, policy, and social factors in developing national identification systems. The study's findings underscore the importance of a multistakeholder approach, where collaboration between government entities, private sector partners, and civil society is essential for success.

The challenges identified in Ghana's experience resonate with those reported in other countries undergoing similar transitions. For instance, the technical and logistical hurdles observed echo the issues faced by Kenya's Huduma Namba initiative (Breckenridge 2023). Furthermore, the importance of public engagement and trustbuilding parallels the experiences of biometric system deployments in India and Zimbabwe (Nanda et al. 2021; Moyo & Musiyarira 2021).

The Fragmentation of the Project

The Ghanacard project faced significant fragmentation due to multiple implementation phases and changes in leadership. Each phase brought new priorities and challenges, leading to inconsistencies in execution. Initial efforts in the 1970s and 1980s were sporadic and limited in scope. The formation of the NIA in 2003 marked a more structured approach, but systemic issues persisted.

Table 2: Public Perception of the Ghanacard Project

Category	Percentage of Respondents	Main Concerns	Suggested Improvements
Positive	45%	Ease of access to services, National pride	Streamlined processes
Negative	35%	Data security, Repeated registrations	Improved data protection
Neutral/Undecided	20%	Lack of information, Uncertainty about benefits	Better public information

Despite technological advancements, the NIA struggled with data management and logistical coordination. A review in 2019 led to a renewed push for modernization, but inconsistent funding and shifting political landscapes continued to hinder progress. The fragmentation was further exacerbated by varying levels of cooperation among governmental agencies and international partners (AkrofiLarbi 2023).

Growing Registration Fatigue

As the Ghanacard project advanced, registration fatigue became a prominent issue. Many citizens grew weary of the repeated and often cumbersome registration processes. This fatigue was driven by the perception of inefficiency and the lack of tangible benefits from previous registration attempts. Effah (2023) highlights that delays and technical failures contributed significantly to public disillusionment.

To address this, the NIA launched several public awareness campaigns aimed at educating citizens about the importance of the Ghanacard and the improvements made to the system. These campaigns focused on demonstrating the practical benefits of the card, such as access to social services and financial inclusion. However, overcoming registration fatigue required more than just information; it needed visible and reliable outcomes from the system.

Competing Data Infrastructures

The Ghanacard initiative faced competition from other data infrastructures within the country. Various government agencies maintained their own databases, leading to a fragmented data landscape. This competition for resources and attention often resulted in duplication of efforts and inefficiencies.

For instance, the Ghana Revenue Authority, the Electoral Commission, and the National Health Insurance Scheme all had separate identification systems. Each system operated independently, creating silos of information

that were difficult to integrate. Ndung'u (2023) points out that the lack of a unified data strategy hindered the overall efficiency and effectiveness of national identification efforts.

SEARCH OF HARMONISATION

The drive for harmonization of Ghana's population data systems became a central goal for the government. The objective was to create a cohesive and interoperable system that could integrate data from various sources, enhancing accuracy and accessibility. This required extensive collaboration among multiple stakeholders, with government assistances, remote sector associates, and intercontinental administrations.

President Nana AkufoAddo's administration emphasized the need for a unified approach, drawing lessons from successful models in other countries. For example, the interoperability of India's Aadhaar system served as a benchmark. The government sought to replicate similar efficiencies by leveraging biometric technologies and advanced data analytics (UNDP 2023).

Interagency Cooperation

Effective interagency cooperation was crucial for the success of the Ghanacard project. The establishment of the National Identification Management System (NIMS) aimed to facilitate collaboration among different government entities. Regular interagency meetings and workshops were organized to address common challenges and align objectives.

The Ministry of Communications played a pivotal role in coordinating these efforts, ensuring that technological standards and data protection protocols were consistently applied across agencies. This cooperation extended to capacitybuilding initiatives, where training programs were developed to enhance the skills of personnel involved in the identification process (World Bank 2023).

In Support of Birth Registration

Strengthening birth registration systems was identified as a critical component of the national identification strategy. Accurate birth registration provides the foundation for a reliable population database. Efforts were made to integrate birth registration with the Ghanacard system, ensuring that every child born in Ghana is immediately registered and assigned a unique identification number.

Collaborations with international organizations, such as UNICEF, facilitated the implementation of mobile birth registration units in remote areas. These units helped increase birth registration rates, particularly in underserved communities. The integration of birth registration with the national identification system aimed to create a seamless lifecycle approach to identity management (UNICEF 2023).

Interoperability-based Data Infrastructures

The cornerstone of the Ghanacard project was the development of interoperabilitybased data infrastructures. These infrastructures were designed to ensure that different systems could communicate and share information seamlessly. The adoption of standardized data formats and protocols was essential for achieving this goal.

The NIA worked closely with international experts to develop these standards, drawing on best practices from other countries. The aim was to create a robust and scalable system that could adapt to future technological advancements. The implementation of blockchain technology was also explored to enhance data security and integrity (Gelb & Metz 2021).

The Way Ahead

Looking forward, the Ghanacard project must focus on continuous improvement and adaptation to emerging challenges. Sustained political commitment and adequate funding are essential to maintain momentum. Moreover, ongoing public engagement is crucial to build trust and ensure widespread adoption of the identification system.

Future initiatives should prioritize the integration of additional services with the Ghanacard, such as digital health records and social welfare programs. Expanding the use of the card beyond identification can enhance its value proposition for citizens. Additionally, continuous monitoring and evaluation will support recognize zones for upgrading and confirm that the scheme rests applicable and effective in meeting the needs of the population (World Bank 2023).

Conclusion

The Ghanacard project stands as a testament to Ghana's commitment to modernizing its national identification infrastructure. While significant progress has been made, the project continues to face challenges that must be addressed to ensure its longterm success. Key issues such as institutional fragmentation, registration fatigue, and the integration of competing data infrastructures highlight the complexity of implementing a nationwide biometric identification system.

The conclusions of that study highlight the importance of a holistic and corresponding approach, linking multiple investors, sustained political will, and adequate funding. Effective interagency cooperation and public engagement are crucial for building trust and ensuring widespread adoption of the identification system. The integration of birth recordkeeping and the development of teamwork built statistics infrastructures are essential steps towards creating a seamless and reliable national identity framework.

Looking ahead, continuous improvement and adaptation to emerging challenges will be vital. Expanding the use of the Ghanacard beyond identification, such as integrating it with digital health records and social welfare programs, can enhance its value proposition for citizens. Comparative studies with other countries' biometric identification initiatives can provide further insights into best practices and common pitfalls.

In conclusion, the Ghanacard project has the probable to knowingly progress the accuracy and efficiency of population data management in Ghana. By addressing the identified challenges and leveraging technological advancements, the project can achieve its goal of providing a reliable and secure national identification system. The lessons learned from Ghana's experience can inform future initiatives in other developing countries, contributing to the global discourse on digital identification systems.

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