

Review of National ID Programs in Developing Countries

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12 December 2016

Overview

Background

Overview of Select National ID Programs

Personal Identification Information

Linking ID Programs With Services

Background

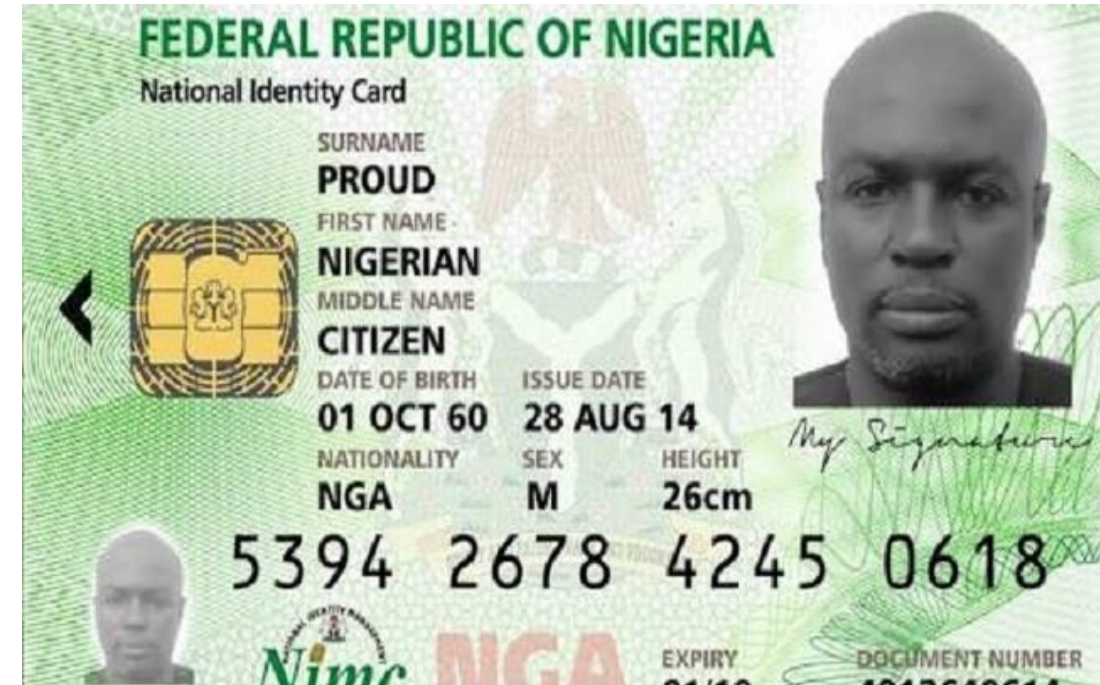
Defining National Identity Programs; Spread of National Identity Programs;
Goals of National Identity Programs; Technological Advances

What are National Identity Programs?

- Government-initiated programs
- Operate at the national level
- Assign a unique identification number to each eligible participant, used for identification verification
- Serve at least one functional authentication purpose:
 - e.g., voter verification, government transfers, accessing financial services, etc.

Spread of National Identity Programs

- Long history in high-income countries, often introduced for surveillance and security purposes (e.g., passports)
- Expanding in developing countries:
 - 34 of the 42 identity programs we reviewed were introduced since 2000, including 17 since 2010
 - 6 programs in planning stages or beginning enrollment
- Sustainable Development Goal 16.9:
 - “By 2030, provide legal identity for all, including birth registration”



<https://www.360nobs.com/wp-content/uploads/2016/03/nimc-640x431.jpg>

Goals of National Identity Programs

- Civic participation
- Surveillance and security
- Government administration and public service provision
- Inclusion: access of populations to services
- Foster national unity



 alamy stock photo

FN691C
www.alamy.com

<http://c8.alamy.com/comp/FN691C/flood-victims-show-their-national-identity-cards-as-they-register-FN691C.jpg>

Technological Advances

- Incorporating electronic and biometric information into ID cards
 - As of 2012, over 1 billion people in developing countries had biometrics captured
- Electronic IDs support growth of electronic government (e-government) and can provide links to both public and private services
- Can also reduce costs and human error and increase administrative efficiency

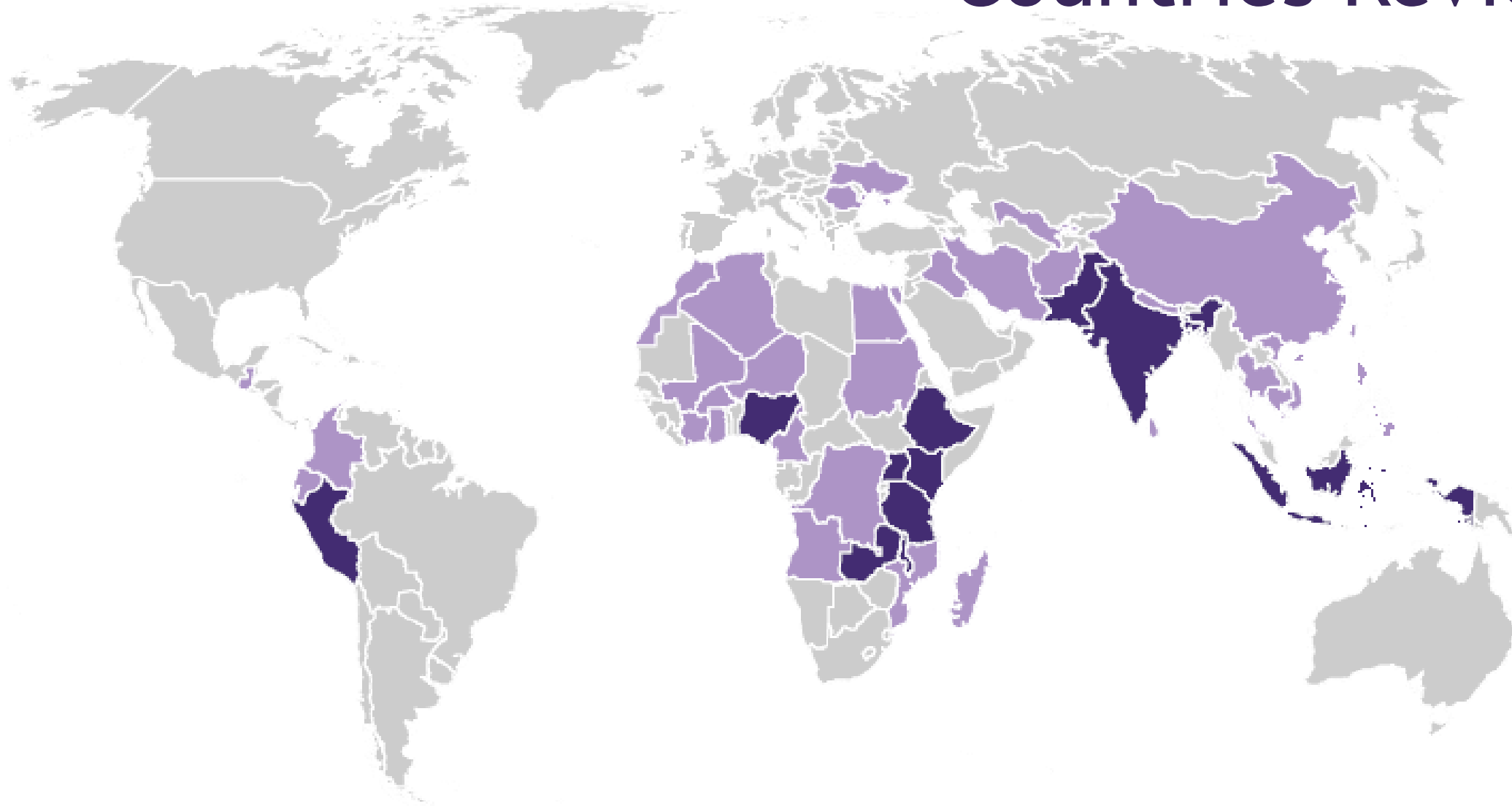


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Overview of Select National ID Programs

Countries Reviewed; Types of National ID Programs;
Program Management and Funding;
Target Populations; Electronic vs. Paper-Based Cards

Countries Reviewed



Reviewed national ID program

Case study for national ID program

Types of National ID Programs

- General-purpose national IDs are the most common form of national identity program (38 of 42 programs reviewed)
- 4 countries have ID programs linked to one specific function, such as elections (voter's cards) or surveillance and security (passports)
- Many countries have multiple forms of national ID, but are working to replace these with a unified national ID program

Program Management

- A variety of government agencies are involved in ID program management
- In many cases, there is a specific National Identification or Civil Registry Office/Agency tasked with ID program management
- Other managing bodies include departments/agencies in the Ministry of the Interior and national elections/voting, security, and statistics agencies



NADRA



National Database and Registration Authority
Pakistan

<http://www.funvilla.pk/wp-content/uploads/2015/05/NADRA-National-Database-and-Registration-Authority.jpg>

Private Management Support

Private firms are involved in enrollment, card production, authentication and/or database maintenance

- Gemalto (Algeria, Cameroon, Nigeria)
- Safran Morpho (Colombia, Egypt, India, Mali, Nepal)
- Thales (Morocco, Uzbekistan)
- Others: Semlex, HID Global, MasterCard, Iris Crop. Berhad, Smartmatic, Dermalog, etc.



http://www.safran-usa.com/sites/safran_usa/files/ajaris/SAF2013_0124354_0.JPG

Program Funding

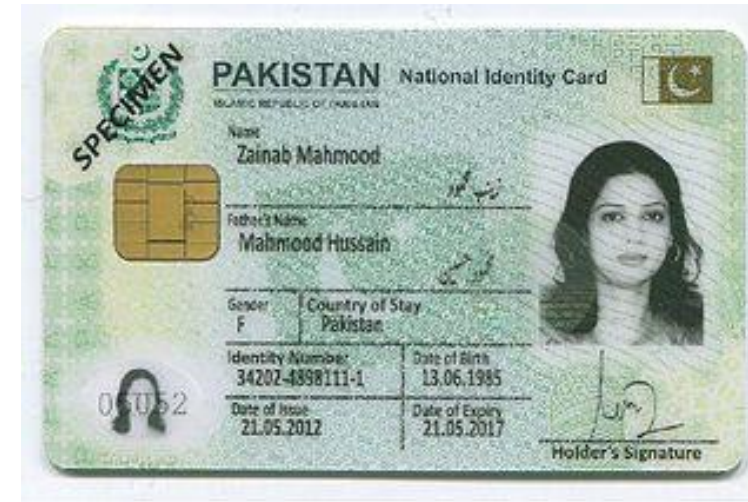
- Nearly all national ID programs receive government funding
- 8 programs receive funding from donors, including UNDP, USAID, IDB, ADB, and others
- Private firms provide some funding for 3 programs, aiming to recover investments through fees for card distribution
- Many programs also receive partial funding from fees for card distribution

Target Populations

- All of the national identity programs reviewed aim to enroll all citizens in the country
- 7 national identity programs also issue national identity cards to residents living in their countries even if they are not citizens:
 - Ghana, Nepal, Nigeria, Sudan, Tanzania aim to enroll all residents
- The target age of enrollment ranges from birth to age 18
 - In some cases, enrollment takes place at birth and cards are issued later on

Electronic vs. Paper-Based

- All but two programs issue a physical credential/card,
 - India's Aadhaar and Yemen's Biometric Voter Registration assign a unique ID number but do not issue cards
- 26 programs include an electronic component, such as "smartcard" microchips, machine readable barcodes, or RFID chips
- Electronic IDs can improve accuracy and security, facilitate fast data processing and collection, and create auditable transaction records
- 19 programs have implemented new electronic ID programs in the past 5 years, often replacing previous programs



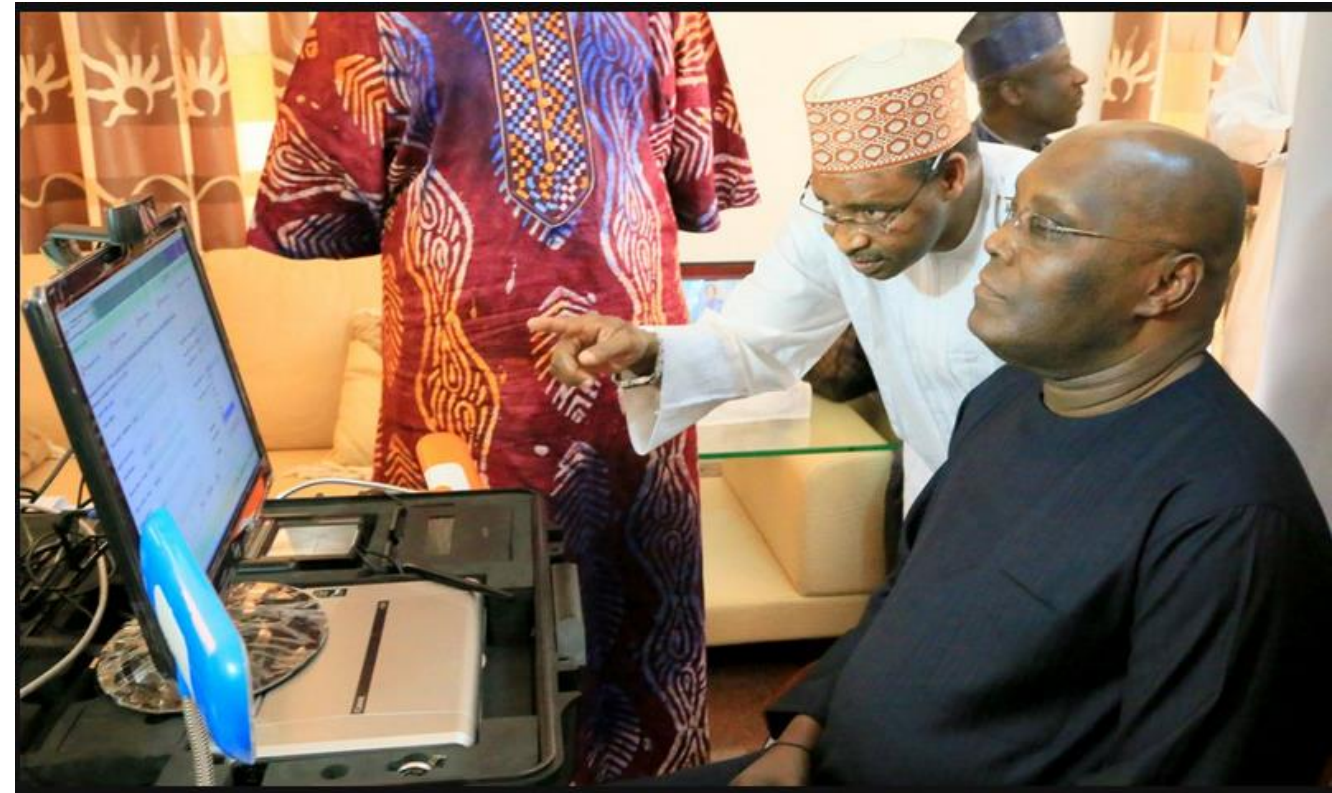
https://en.wikipedia.org/wiki/National_Database_and_Registration_Authority

Personal Identification Information

Recording Personal Information; Sensitive Information;
Personal Biometric Information; Costs of Biometric Authentication;
Using Biometric Information

Recording Personal Information

- Most ID programs record an individual's name, date of birth, gender, residence/location information, and take a photograph
- Many programs assign a number/unique identifier
- Additional information recorded varies by country
 - Privacy concerns over how much information to include



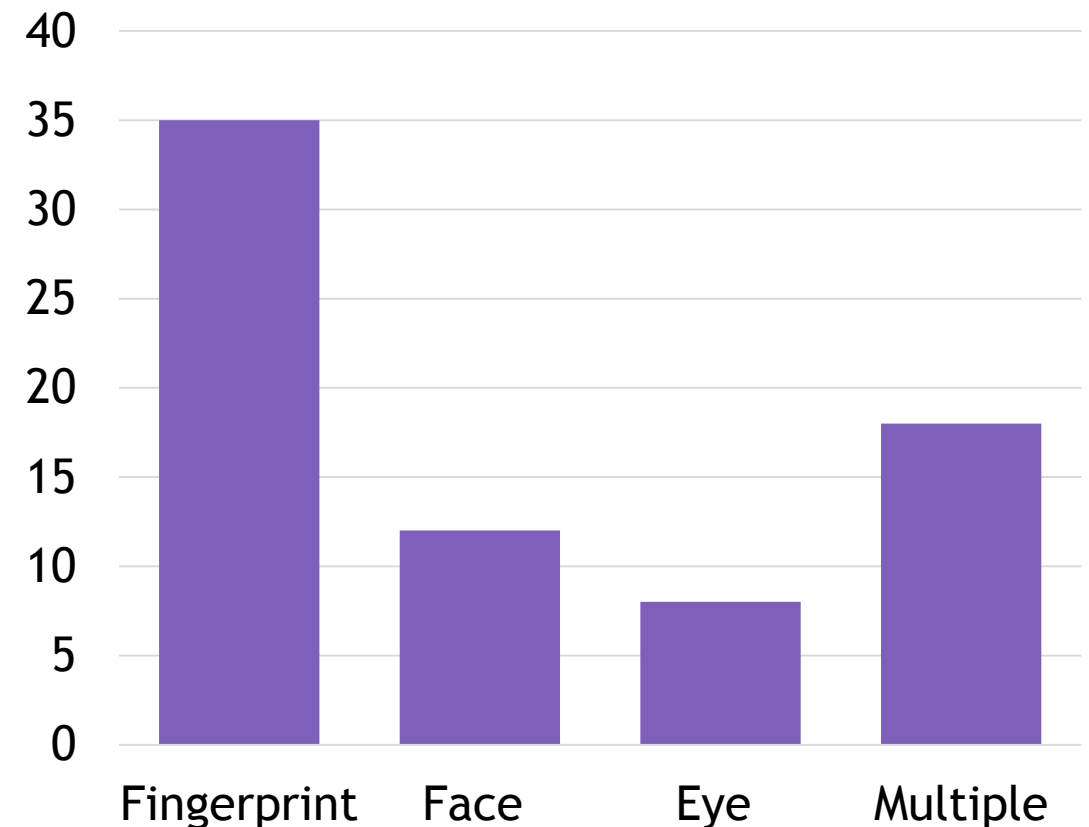
Sensitive Information

- Including certain categories of information creates a fear of abuse by governments or other third parties
- Evidence of challenges with ethnic or religious minorities in 10 countries
 - Afghanistan: implementation of ID program stalled by concerns of minority groups about including ethnicity on ID cards
 - Egypt and Indonesia: concerns about discrimination from including religion on ID cards
 - Egypt and Iraq: concerns over how religion is registered
- Concerns over gender identity

Personal Biometric Information

- 35 programs collect some kind of biometric information for identification and authentication - all include fingerprints
- 18 programs use more than one type of biometric information

Programs Capturing Different Biometric Information



Challenges of Biometric Authentication

- Modern biometric technologies can increase confidence in authentication, but this is costly
 - Portable fingerprint scanners can be less cost effective than traditional means of verification (e.g., presenting a physical ID)
- Few programs possess equipment to verify citizens on site for financial/social transfers, elections, or other functions
- Issues with scanning fingerprints of rural residents also limit their usability

Linking ID Programs With Services

Potential Benefits of Service Linkages; Example of Benefits - Aadhaar;
Service Linkages in Reviewed Programs; Types of Functional Linkages;
Characteristics of Programs with Functional Linkages;
Barriers to Service Linkages

Potential Benefits of Service Linkages

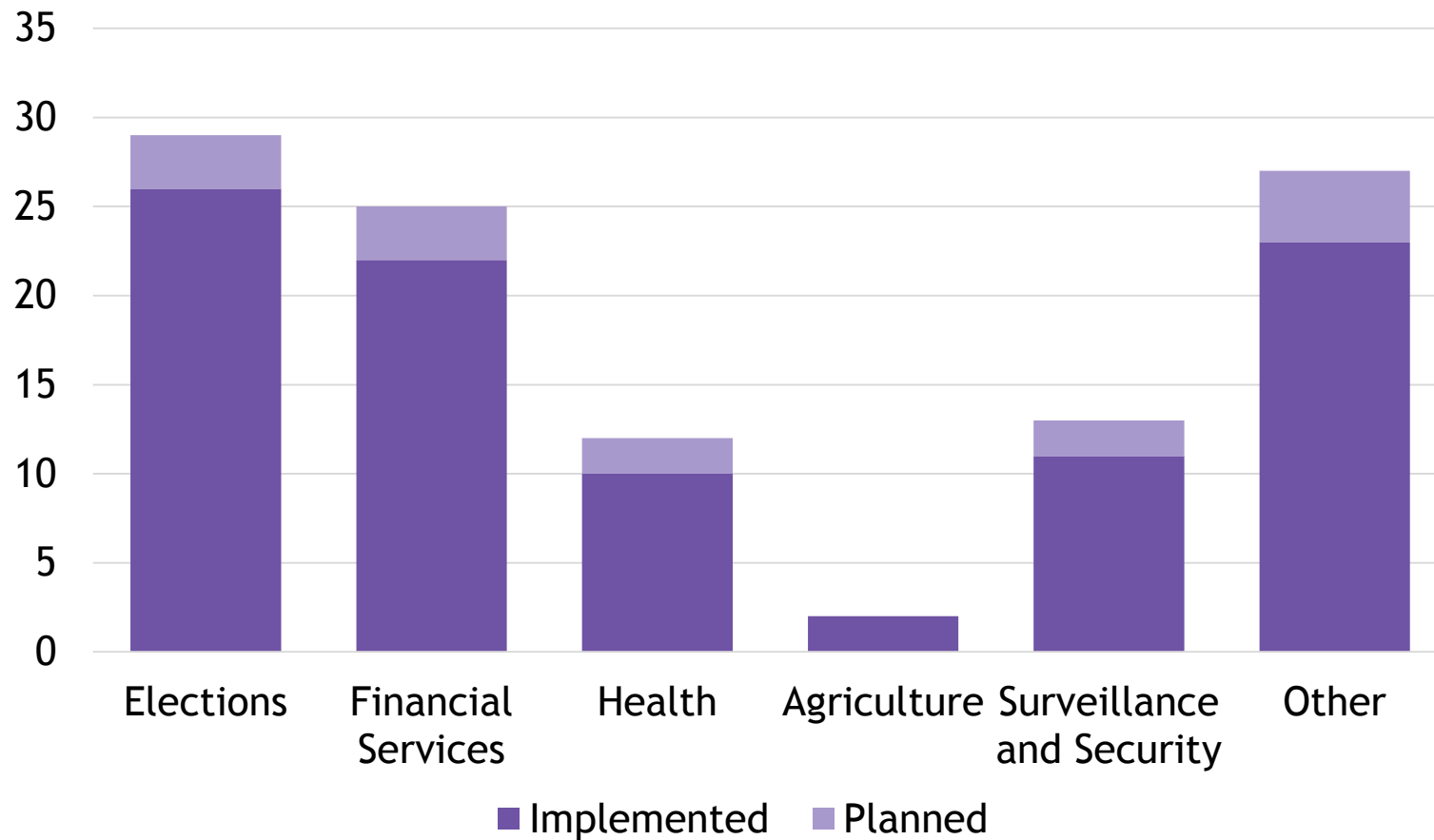
- Better targeting of services
 - Eliminate duplicates and verify identity of beneficiaries
- Automate service provision
- Generate disaggregated data to inform planning on service provision
- Track service delivery
 - Identify unserved and underserved populations
 - Reduce opportunities for corruption: leakages and misreporting

Example of Benefits - India's Aadhaar

- Connected Aadhaar numbers with bank accounts for government transfers
 - Automated electronic benefit transfer for 45 million individuals through National Rural Employment Guarantee Scheme (NREGS)
 - Automated government pension payments to 500,000 beneficiaries in Jharkhand
 - Millions of previously unbanked wage seekers gained access to mainstream financial services
- Reduced losses in liquid petroleum gas (LPG) delivery
 - Over 100 million customers now authenticated delivery with ID
 - 30 million duplicate or fraudulent LPG connections removed

Service Linkages in Reviewed Programs

Functional Links of the 42 ID Programs



- **Programs connected with four or more categories of functions:** Bangladesh, Egypt, India, Indonesia, Nigeria, Pakistan, Peru, Tanzania, Thailand, and Zambia
- **No evidence of explicit linkages:** Malawi, Mozambique, the Ukraine, and Vietnam

Election Linkages

- Elections are the most common service function of ID programs
- 12 ID programs are used for voter registration
- In five countries, ID programs are used to de-duplicate voter registries or authenticate voters
- IDs from 23 programs are accepted as identification at polling stations
- We find no evidence of countries having devices available for on-site biometric verification during elections



http://tehelka.com/wp-content/uploads/2013/05/photo_1368246912843-1-0.jpg

Financial Linkages

- Know Your Customer (KYC) - 25 programs are used to verify customer identities when accessing financial services
- Six programs (Ghana, India, Kenya, Nigeria, Pakistan, Zambia) are linked to digital banking
- Four (DRC, Egypt, India, Kenya) have mobile money applications
- Another 12 are linked with social transfers, such as government relief, social security, welfare, and other cash transfer programs



<http://atlantablackstar.com/2014/08/30/nigerians-transition-national-electronic-id-card/>

AFP

Health Linkages

- Six programs require IDs to access hospital or other health care system services
- Four programs track services and treatment using national identifications registries
 - India and Pakistan track immunizations, and Thailand and Uganda's national ID's facilitate patient management and tracking at hospitals
- Five programs assist with verification of eligibility / coverage / benefits (Egypt, India, Nigeria, Thailand, Uganda)

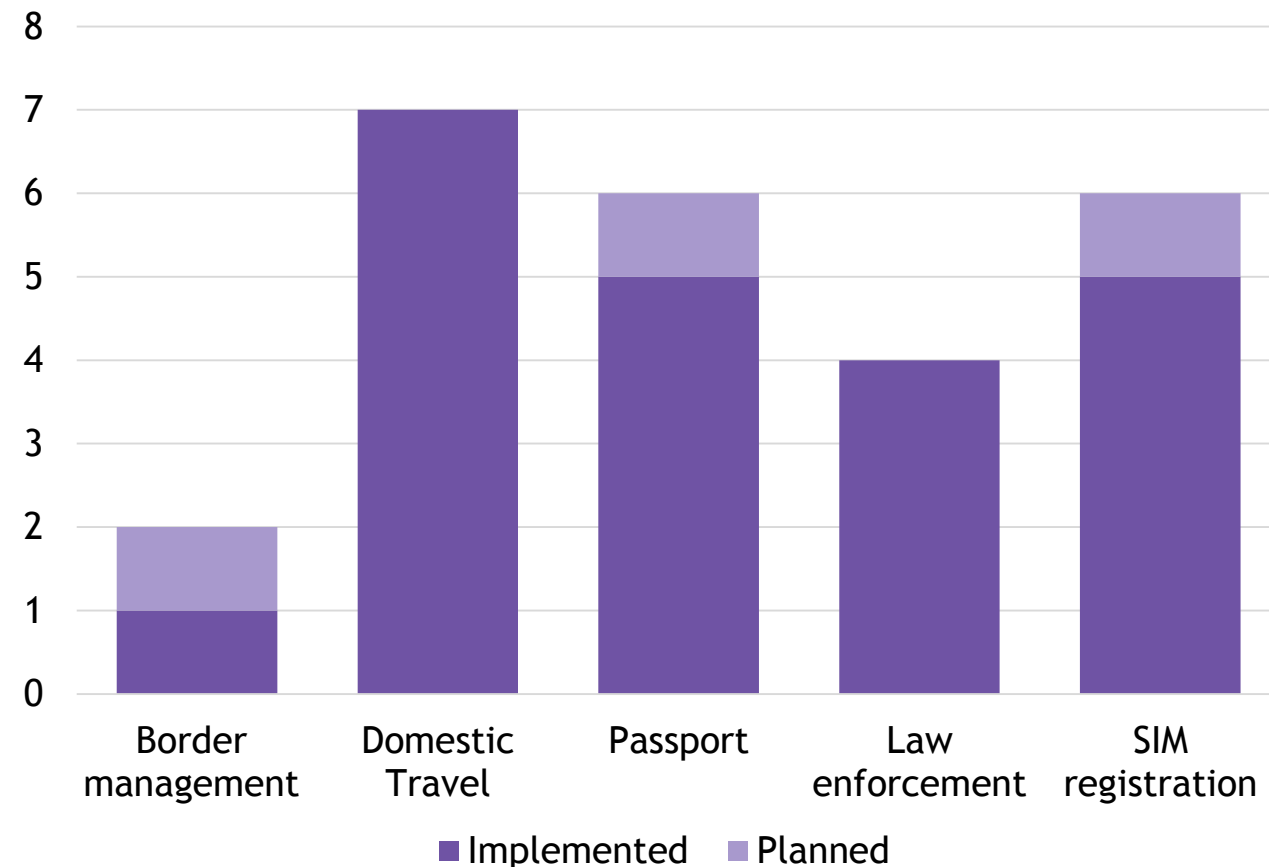
Agriculture Linkages

- We find agricultural connections in Nigeria (monitoring subsidies) and Thailand (delivery of extension services)
- ID links to agriculture may be limited by lack of digital infrastructure in rural areas
 - Nigeria uses tablets that can process subsidy transactions offline
 - Thailand uses a network of community ICT centers

Surveillance/Security Linkages

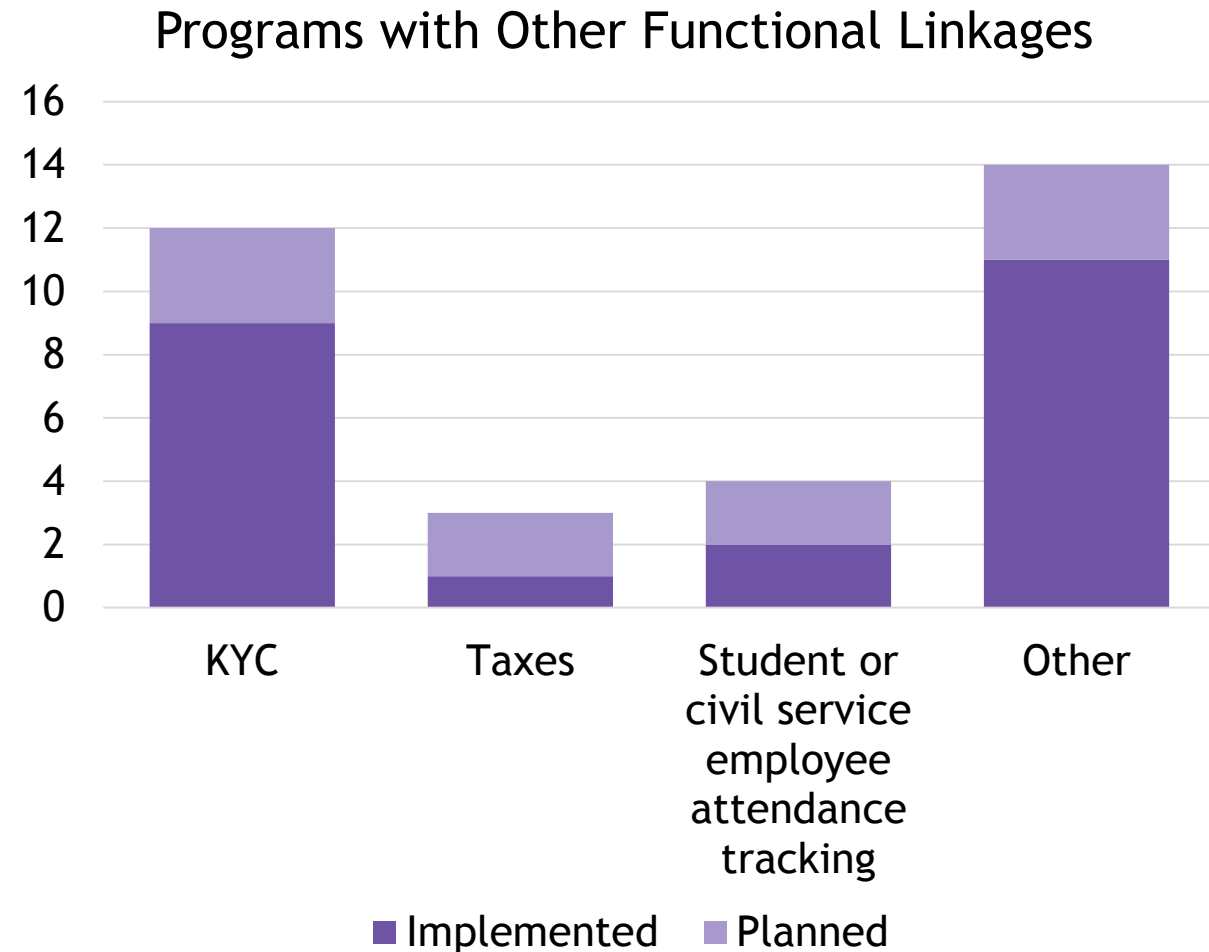
- National IDs may help track travel and movements across borders
- Identity cards are increasingly required for mobile phone SIM card registration
- We find no evidence indicating major violations of individual privacy, although concerns are prevalent

Surveillance and Security Connections to ID Programs



Other Functional Linkages

- KYC: ID used as a verification document for individuals to receive access to services
 - Many government services require national ID
- ID systems are leveraged to ensure that government employees and students attend work or school
- Many other linkages: tax payment, school enrollment, applying for work, etc.



Characteristics of Programs with Functional Linkages

- Difficult to assess extent of connection between ID programs and different services
 - Small sample size
 - Limited data on depth or impact of connections
- Programs that incorporate cards with **electronic components or biometrics** are connected to a higher mean number of different service functions overall

Technical Features	Number of Programs	Mean Number of Service Linkages
Electronic	26	4.5
Non-Electronic	16	1.5
Biometrics	34	3.8
Non-Biometrics	8	2.3

Characteristics of Programs with Functional Linkages

- We find no association between **region** and functional linkages
 - National ID programs in South Asia have the highest mean number of categories of service connections, driven by well-integrated programs in India and Pakistan
- We also find no association with the **year** a program is introduced
 - But programs that are still actively enrolling members appear to be linked to more types of services
- Significant scope to expand functional linkages

Barriers to Service Linkages

- In many countries, separate ID cards already exist for different systems and services
 - Government agencies with different ID programs may compete in order to preserve existing powers or oversight (e.g., India, Nigeria, Pakistan)
 - Maintaining status-quo operations may be more convenient given the political will and effort that can be required to overhaul existing systems
- Concerns about privacy
- Many countries are still developing their systems or enrolling eligible populations

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Please direct comments or questions about this research to Principal Investigators C. Leigh Anderson and Travis Reynolds at epar.evans.uw@gmail.com.