Biometric ID Technology in Elections: Waste or Worthwhile Investment?

Alan Gelb

Presentation to ID4Africa 2018
Abuja, Nigeria

Center for Global Development

Why should we care about election technology?

- Over 38 low- and middle income countries use or have used biometric technology to enroll voters uniquely and/or to authenticate them at the polls
- At least USD 140 million committed to biometric identification technology in elections by donors (UNDP + bilaterals)
- Part of the problem of proliferating IDs: Nigeria has spent around $2 billion over the last 10 years on IDs and still has limited NID coverage

Outline

- Biometric elections have been supported in many countries despite high costs and variable effectiveness
- They often leave no permanent identity assets behind
- One reason for support is the very high potential costs of violently disputed elections
- Under certain conditions, better identity management can support fairer elections and reduce disputes – but not always

Two steps towards better resource management

- Screen cases carefully before committing to technology
- Ensure that voter registration strengthens permanent ID systems rather than weakens them and integrate the systems

High cost of elections and technology

Country	Year	Registered voters	Election cost	Biometric technology cost	Per voter election cost	Per voter biometric cost
Benin	2011	3,630,000	$51,134,548	$12,152,000	$14.1	$3.4
Burkina Faso	2012	4,365,000	?	$23,000,000	?	$5.3
Cape Verde	2011	304,000	?	$1,400,000	?	$4.6
Cote d'Ivoire	2010	5,780,000	$330,000,000	$266,000,000	$57.1	$46
DRC	2011	32,000,000	$360,000,000	$64,084,575 (?)	$11.3	$2
Ghana	2012	14,031,793	$124,000,000	$70,000,000	$8.8	$5.4
Guinea	2010	4,200,000	$29,232,464	$6,800,000	$7	$1.6
Kenya	2013	14,350,000	$325,000,000	$93,800,000	$22.6	$6.6
Mali	2013	6,800,000	$50,000,000	$14,300,000	$7.4	$2.1
Nigeria	2015	70,000,000	$603,000,000	?	$8.6	?
Sierra Leone	2012	2,700,000	$40,000,000	$18,000,000	$14.8	$6.7
Togo	2010	3,281,000	$16,900,000	?	$5.2	?
Zambia	2011	5,167,000	$67,600,000	$14,700,000	$13.1	$2.8

Costs high: often $15 - $20 per voter. May not be sustainable.
Technology around one third of total

The other side: costs of violently disputed elections

Acceptance of results

Quality of elections	Results accepted, election not disputed	Somewhat disputed; acceptance later or none by some players	Results Disputed	Total
Free and fair	11 91.70%	1 8.30%	0 0%	12 100%
Free and fair with some irregularities	69 47.30%	58 38.70%	19 13%	146 100%
Irregularities affected the results	2 2.30%	37 42.50%	48 55.20%	87 100%
Not at all free and fair	0 0%	1 9.10%	10 90.90%	11 100%
Total	82 32%	97 37.90%	77 30.10%	256 100%

Free Fair per assessment of independent observers

Data source: Lindberg

“Free and fair” elections are rarely disputed but many elections not free and fair

- Lindberg: serious disputes usually for elections with serious irregularities

1. An election that was largely free and fair was 10 times as likely to be **eventually accepted** by the opposition as one that wasn't.

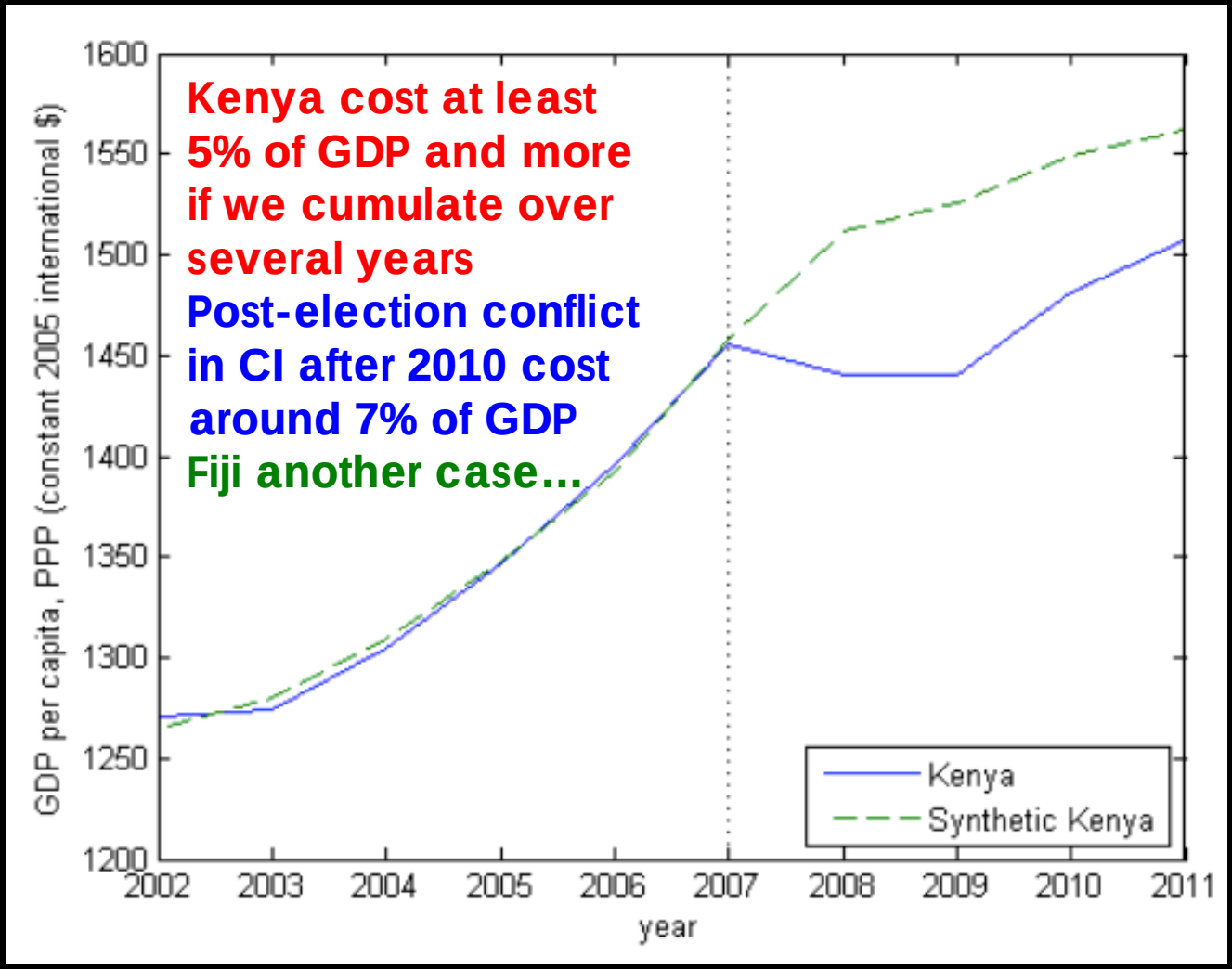
2. An election that was largely free and fair was 49 times as likely to be **fully accepted** (not disputed) by the opposition from the beginning than one that wasn't.

- Hafner-Burton: both pre-election violence and repression and election fraud predict post-election protest

Post-election violence can be costly: example Kenya

- Disputed presidential election of 2007
- Over two months of violence
- 1,200 people killed; 500,000 displaced
- Tourism revenue down by 50% in Q1 of 2008
- Flower exports down by over 30%
- Lost production, revenue, livelihoods
- Losses not rapidly recovered

Costs of post-election violence can extend many years



Source for Kenya: Guibert and Perez-Quiroz

Experiences with biometric voter registration and verification

Mixed bag of successes and failures:

- Registration can cover a high share of the voting population in a short time: 14 million voters registered in 40 days in Ghana; 26 million in 4 months in Tanzania….
- At times provides first and only ID
- Failure to register fingerprints can be a problem: over 10% in Zambia….
- Verification problems: 41% failure rate reported in Nigeria during pre-election testing; only 0.25% reported failure on Election Day
- Nevertheless: technology credited with making Nigeria's 2015 election the freest and fairest yet:

"Fortune favours the bold. Deciding to go hi-tech was absolutely the right thing to do,"
- U.S. Ambassador James Entwistle after the Nigerian poll.

Costs/Benefit of Biometric Elections:
Break-even at even a modest desrease in probability of post-election conflict

Country	Cost of biometric technology	Break-even reduction in probability of post-election conflict (percentage points) By expected cost of post-election conflict (as a share of GDP)			
		1%	**5%**	10%	105%
Benin	$12,152,000	16.67	**3.33**	1.67	0.16
Burkina Faso	$23,000,000	21.44	**4.29**	2.14	0.2
Cape Verde	$1,400,000	7.49	**1.5**	0.75	0.07
Cote d'Ivoire	$266,000,000	No break-even	**21.38**	10.69	1.02
DRC	$64,084,575	24.8	**4.96**	2.48	0.24
Ghana	$76,000,000	18.21	**3.64**	1.82	0.17
Guinea	$6,800,000	14.35	**2.87**	1.43	0.14
Kenya	$93,800,000	16.98	**3.4**	1.7	0.16
Mali	$14,300,000	13.07	**2.61**	1.31	0.12
Nigeria	?	?	**?**	?	?
Sierra Leone	$18,000,000	50.99	**10.2**	5.1	0.49
Togo	?	?	**?**	?	?
Zambia	$14,700,000	6.2	**1.24**	0.62	0.06

It does not have to work every time. But: will there be benefits?

- In what circumstances is the approach more likely to increase acceptance of results?

- How can voter enrollment strengthen permanent identity assets and support sustainable elections?

The limits of technology

Nature of problems

Pre-Election

- Voter intimidation/bribery ✗
- Suppression of the opposition ✗
- Disputed voter eligibility ✗
- Multiple registration ✓
- Non-existent persons on voter roll ✓

Election Day

- Multiple voting ✓
- Impersonating another voter ✓
- Ballot stuffing ?

Post-Election

- Votes mis-counted ✗
- Vote tally altered ✗

Even if well-implemented, technology cannot create a credible election in a seriously repressive country

Need to screen cases carefully

From Voter Rolls to Permanent Registration

$$** Even if Successful these are wasteful exercises! **$$

Kenya 2013 election

$22 per voter. Technology $8 per voter

- Involved 15,000 biometric enrollment kits
- Typical price is $3000 per kit (UNDP)
- Typically deteriorate in warehouses after election
- And are not compatible with equipment used for regular registration

Population registration

$3 - $6 per person +20% maintenance (Atick 2015)

- India Aadhaar enrollment $1.16 per head
- Continuous civil registration costs comparable or less

Yet voter registration can galvanize enrollment !

Policy Recommendations

- **Support continuous registration not one-off elections**
  - South Africa bases voter roll on population register and saves a great deal

<u>If providing election support:</u>

- Screen countries carefully
  - Don't waste resources where elections cannot be credible
- Ensure that technology is compatible with registration needs and transfer to civil registration after the elections
  - A huge boost to technology capacity
- Set standards for biographic and biometric data that are compatible with NID
  - Even if not all fields are completed.
  - Merging the datasets may require legislative approval
- Plan for NID as primary ID for next election with only supplementary enrolment as needed
  - Positive examples in process include Malawi, Zambia
- Consider autonomous ID agency to improve perceptions of political independence
  - Examples: Peru, Pakistan…..

Thank You