Computer-Assisted Personal Interviewing in African Censuses: Observed Opportunities and Challenges

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Presentation Overview

- U.S. Census Bureau's International Programs Center
- PAPI vs CAPI
- Challenges to implementing successful CAPI censuses and potential solutions
  - Shifting timelines
  - Cost of mobile devices
  - National infrastructure
  - NSO infrastructure
  - Technical skills and capacity building

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U.S. Census Bureau's International Programs Center

- Promotes international development and capacity strengthening through:
  - **Training and technical assistance** to National Statistical Offices in all aspects of census and survey taking
  - **Demographic, geographic, and economic research** to encourage informed decision making
  - **Software and methodological tools development** to facilitate the census and survey-taking process for counterpart agencies and the global statistical community

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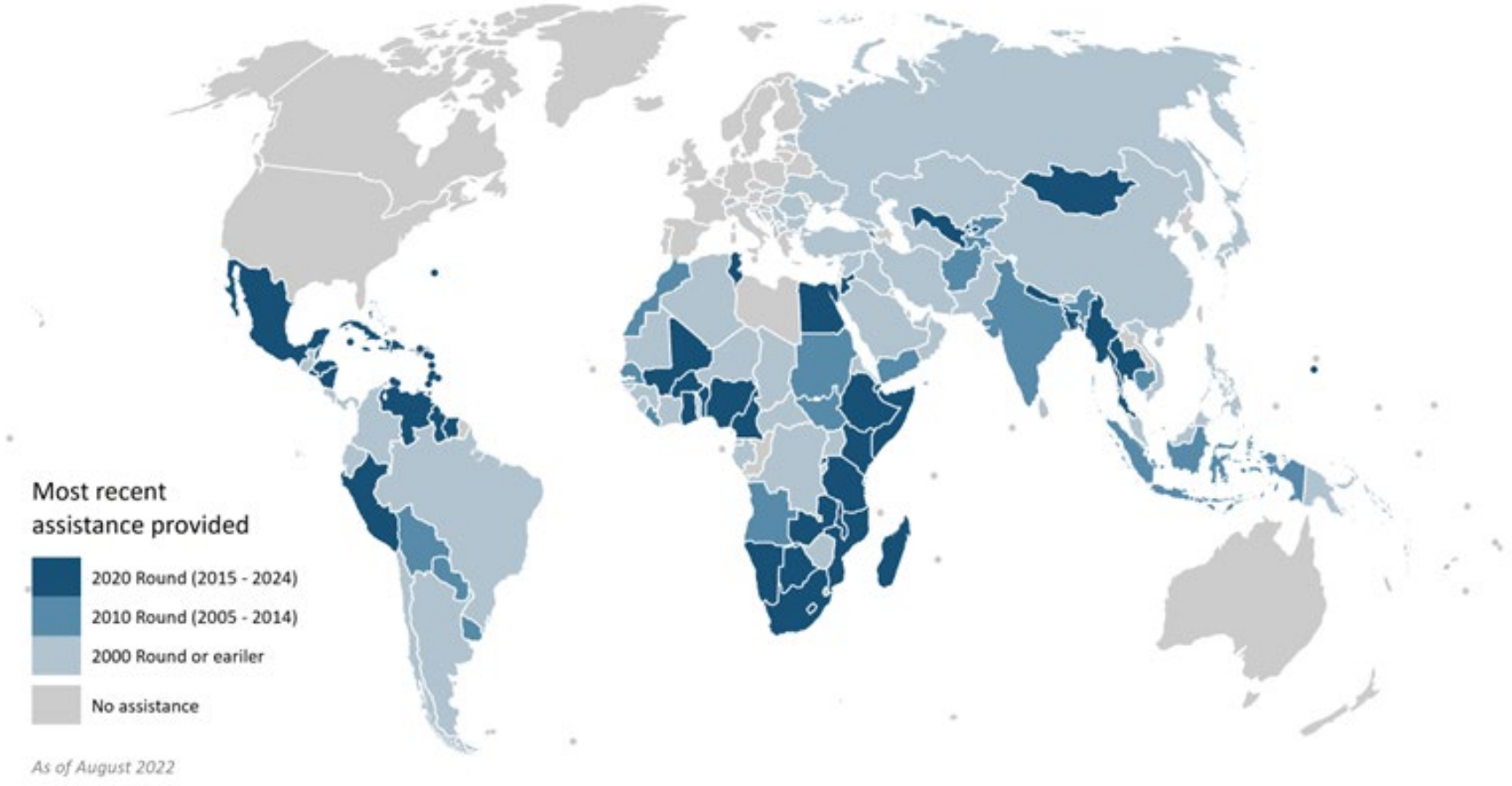
Where We Have Worked



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Census and Survey Processing System

What does CSPro do?

- Data entry, including CAPI (Android and Windows)
- Data editing and imputation
- Data tabulation
- Data dissemination
- Data manipulation utilities

CSPro Experience

- Censuses
  - Over 40 countries committed to using CSPro Android for 2020 round
  - Over 620M million people will be counted for 2020 round
- Surveys
  - Demographic, labor force, income and expenditure surveys
  - Solution of choice for DHS and MICS

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PAPI vs CAPI

Paper-and-Pencil Personal Interviewing (PAPI)

- Interviewer-administered paper questionnaire
- Following the enumeration period, paper questionnaires are sent to a data processing facility where coding and capture operations occur
- Following data capture, data cleaning operations are performed

Computer-Assisted Personal Interviewing (CAPI)

- Interviewer-administered questionnaire loaded onto a handheld device (tablet, smartphone, laptop)
- Coding and the majority of cleaning operations implemented as part of data capture application prior to enumeration
- Data collection and capture are simultaneous
- Following the interview, the data are sent to a central computing network electronically via the internet for other means

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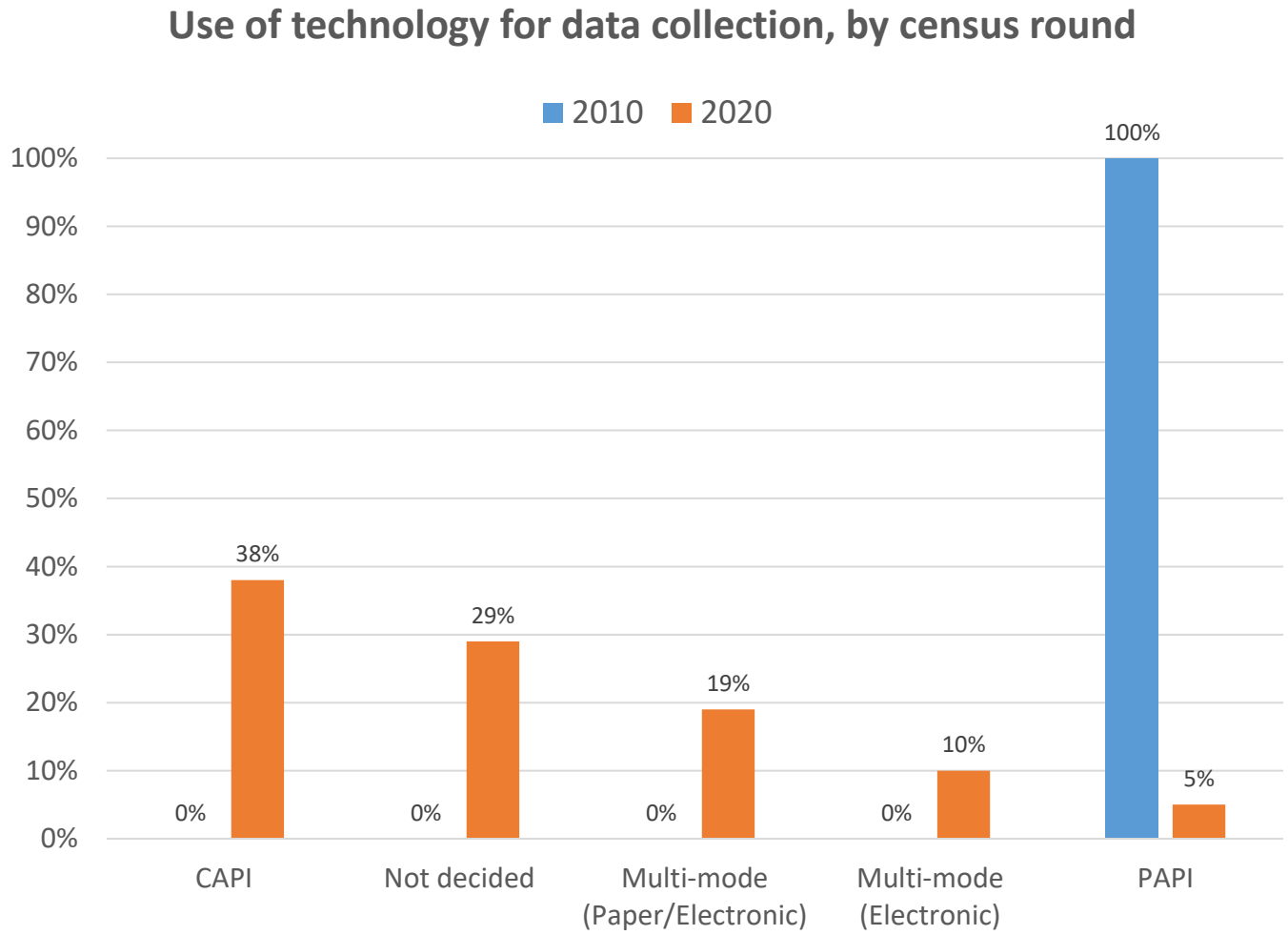
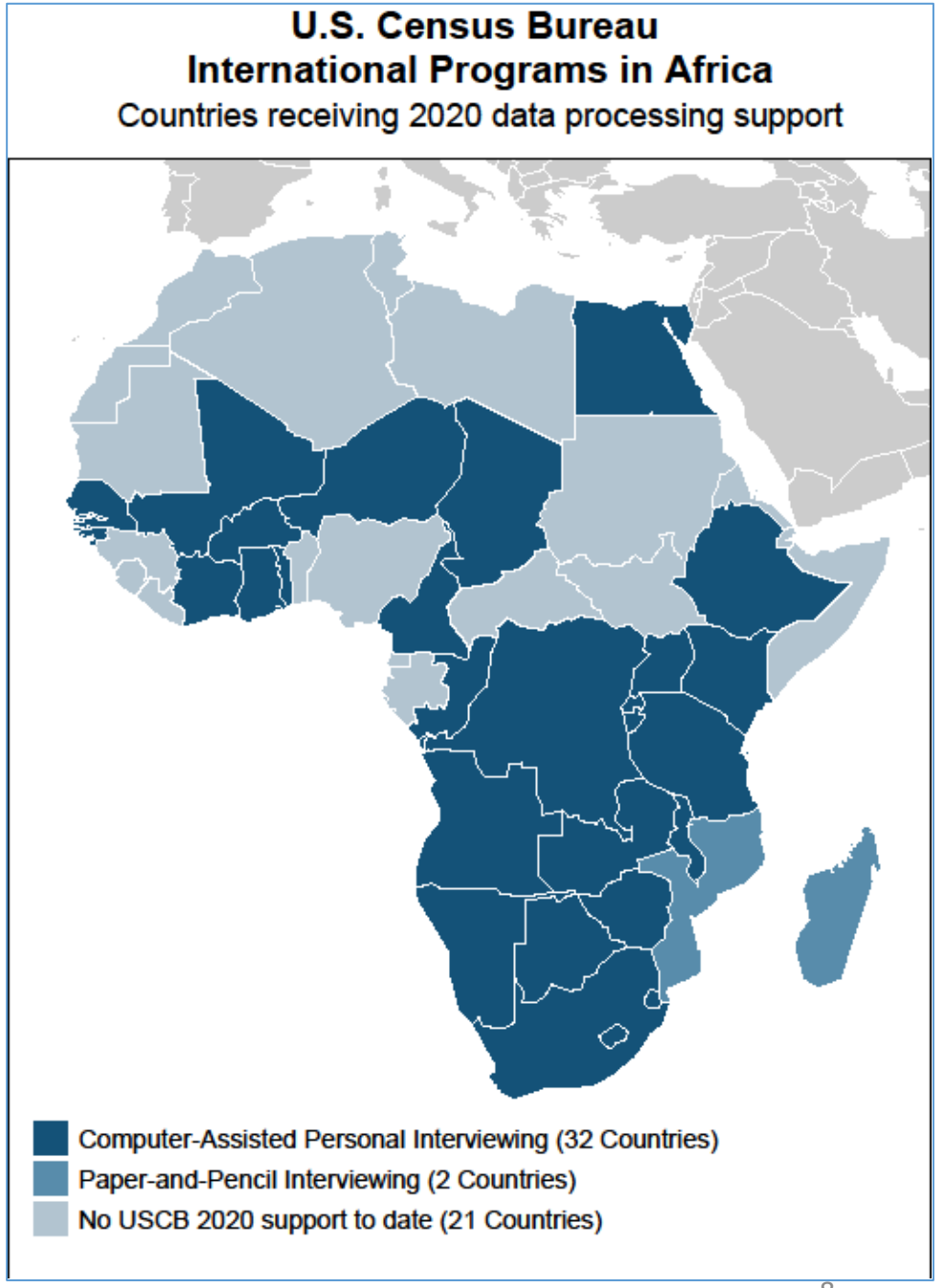
Trend towards CAPI use in Africa for 2020



Source: https://unstats.un.org/unsd/statcom/51st-session/documents/BG-Item3j-Survey-E.pdf

2020 Census Data Collection Technology in Africa

- Of the 34 African NSOs we have provided technical support to, 32 are committed to implementing CAPI censuses
- The majority of these countries will implement a mixed-mode approach, with CAPI as the primary data collection method and PAPI as a back-up method
- The adoption of CAPI as a data processing solution for the 2020 census in Africa is being implemented faster than anticipated



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Observed Challenges and Potential Solutions to Implement Successful CAPI Censuses

Challenge 1: Shifting Timelines

Challenge

CAPI adoption shifts a large share of the workload earlier in the census life cycle

Potential Solutions

- Avoid having CAPI census be the first CAPI experience
- Make decision to adopt CAPI early in the planning phase
- Involve IT and data processing staff early in the planning phase
- Take the pilot census seriously

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Challenge 2: Cost of Mobile Devices

Challenge

A census employs a large number of field staff and purchasing a mobile device for each is costly

Potential Solutions

- Tablet sharing between regional NSOs
- Partnering with other Government Ministries
- Tablet buy-back option for census field staff
- Purchase smartphones instead of tablets
- Rent devices in place of purchasing
- Bring your own device (BYOD)

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Challenge 3: National Infrastructure

Challenge

Infrastructure issues such as availability of electricity and Internet can affect the success of a CAPI census

Potential Solutions

- Coordinate with power company providers to estimate coverage and assess the need for alternative solutions
- Collaborate with telecommunications companies to estimate cellular network coverage

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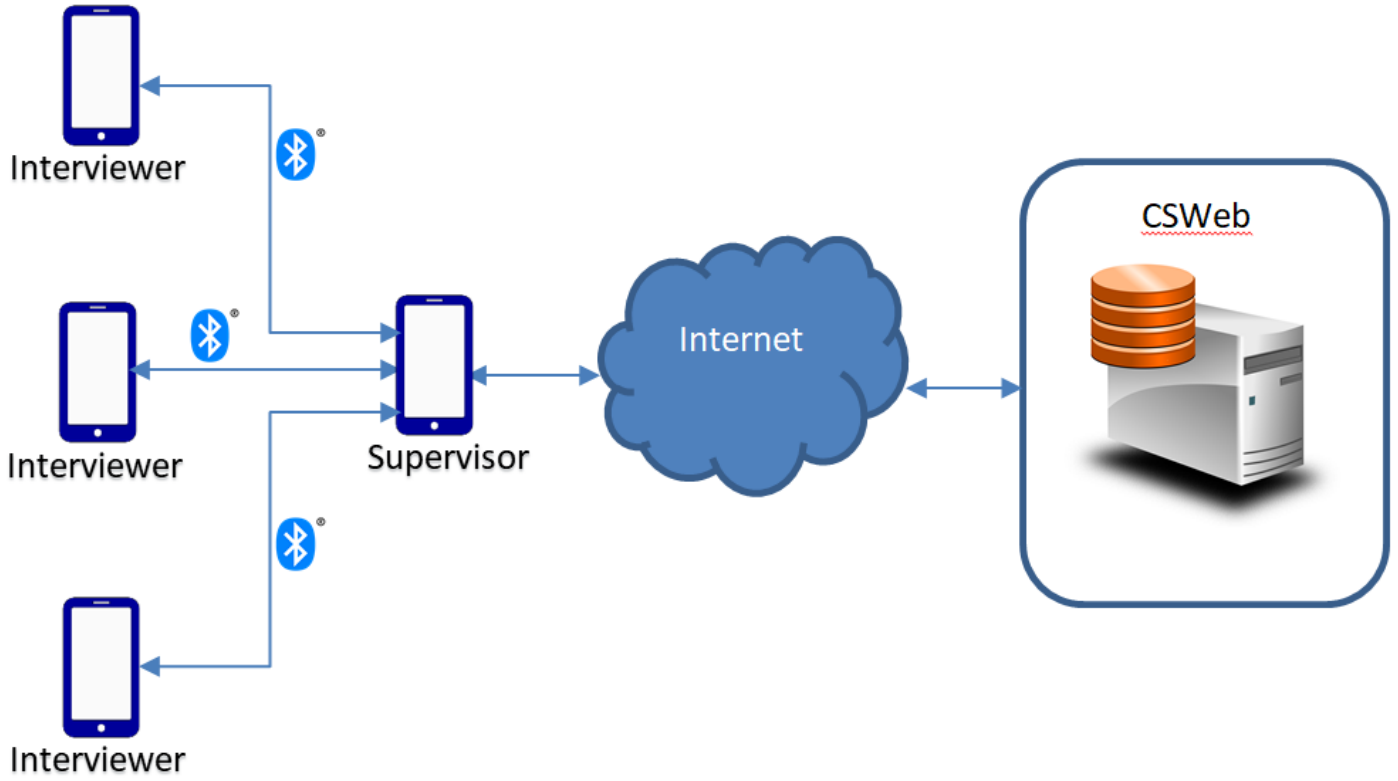
Challenge 3: National Infrastructure (cont)



Synchronization between interviewers, supervisor and central server over the internet

Challenge 4: NSO Infrastructure

Challenge

Many African NSOs are unable to conduct CAPI censuses with existing infrastructure

Potential Solutions

- Study tour to neighboring NSOs who have completed a CAPI census to identify infrastructure needs and solutions
- Outfitting dedicated NSO space to house server
- Rent server space from outside organization

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Challenge 5: Technical Skills and Capacity Development

Challenge

The technical skills necessary for implementing a CAPI census are significantly different from those needed for PAPI censuses

Potential Solutions

- Avoid having CAPI census be the first CAPI experience
- Secure capacity strengthening oriented training from organizations experienced with CAPI censuses

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Conclusion

- CAPI has become the preferred data processing solution in the 2020 round of African censuses. Lessons from these implementations hold insights for countries considering transitioning from PAPI to CAPI.
- The technology holds great potential for providing high-quality data to decision makers in a fraction of time experienced just a decade ago
- However, there are a number of challenges associated with the adoption of this new technology that NSOs new to CAPI may not have experience with
- Study visits to neighboring NSOs that have recently conducted successful CAPI censuses is recommended to learn about context specific challenges and innovative solutions to overcome them

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Thank You

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