

MICS Plus: a longitudinal household phone survey

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OUTLINE

- Methodology
- Validation
- Moving forward

Initiated in 2019, MICS Plus is a longitudinal, representative household survey tool with interviews conducted over the phone

Builds on the 25 years of experience of the MICS programme

Collects data on the situation of children, families, and households on a frequent basis, and with near real-time reporting

1



MICS - Household sample frame

Any household sample frame with phone numbers, preferably a MICS

2



Representative (sub)sample

Representative (sub)sample selected from the frame

3



Call center, data management system

Infrastructure for data management system.

4

FIRST WAVE of direct calls & data entry
 Direct calls to households (~15 minutes)
 - CATI data entry - Data transfer to cloud, captured by the data management system



4a

Substitution
Conditional substitution using Euclidean distance analysis



4b

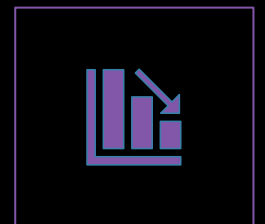
Complete FIRST WAVE
Direct calls to substitute households



MICS Plus sample established
Households responding in [4] and [4b]

5

FIRST WAVE Analysis & reporting
 Data exported to SPSS, analyzed and tabulated - Results presented as a statistical snapshot or through a dashboard



Monthly or bi-monthly calls to the same households

4

SECOND WAVE of direct calls & data entry

Direct calls (~15 minutes) to households
- CATI data entry - Data transfer to cloud, captured by the data management system

4

Combine rigor AND agility

Flexibility

Household survey that can capture rapid changes/shocks

4

FOURTH WAVE of direct calls & data entry

Direct calls (~15 minutes) to households - CATI data entry - Data transfer to cloud, captured by the data management system

5

SECOND WAVE Analysis & reporting

Data exported to SPSS, analyzed and tabulated - Results presented as a statistical snapshot or through a dashboard

5

Controlling for seasonality

Various purposes: Crisis monitoring, opinion polling ...

5

FOURTH WAVE Analysis & reporting

Data exported to SPSS, analyzed and tabulated - Results presented as a statistical snapshot or through a dashboard

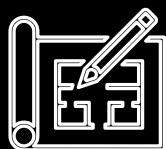
Repeated for a period of ~12 months

MICS Plus Response Rates

	Wave 1*	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7
Mongolia 2020-22 (completed)	97.3	92.2	90.8	91.0	87.2	84.7	78.0
Georgia 2021-22 (completed)	86.7	87.1	83.7	80.5	81.3	82.0	na
Mongolia 2022-23 (completed)	97.2	91.2	79.6				
Nigeria 2023-25 (ongoing)	60.2	70.4	74.4				

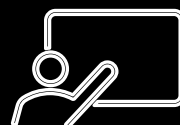
* After substitution

* All MICS Plus response rates are calculated for all selected households (including HHs with inactive phone numbers, refusals, no response, etc.)



Nigeria
Fiji
Samoa
Jamaica

Turkmenistan
Oman
Mongolia
Pakistan Punjab
Trinidad & Tobago
Libya



The average sample size is around 3,000 households
33 waves of data collection in different countries
with an average response rate at 76%
Much more to come as MICS7 surveys are being
implemented

SUMMARY OF MICS PLUS MAIN FEATURES



Interviewing **households** in regular intervals for 12 months to collect **longitudinal data representative at national level** (sometimes for specific region or part of the country)



Telephone interviews with one knowledgeable adult household member (standard tools). Interview **duration** about 15 minutes, on average.



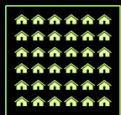
Focusing on issues related to **children** (education, health, nutrition, child protection and more)



Filling data gaps that are best measured with high frequency and which show seasonality (data on some MICS and non-MICS topics are being collected)



Adherence to strict **ethical protocols** that ensure the privacy of individuals, and collect consent and phone numbers



MICS interviewed households as a **sample frame**

SOME TOPICS COVERED IN MICS PLUS

Healthcare Services
Nutrition
Child/Adolescents Wellbeing and Health
Gaming
COVID-19

Child Deprivation
Household Characteristics
Water and Sanitation
Household Energy Use
Material Deprivation

Child Money Program
Child Discipline
Child Labour
Functional Difficulties

Early Childhood Development
Distance Learning/Education

Emergency

Employment
Climate Change and Pollution
Life Satisfaction
Attitudes Towards People with Disabilities
Government services

MICS PLUS JAMAICA HURRICANE BERYL

Tools changed in 5 days

Data collection started 1 week after the Hurricane

The first findings available on the second week after the data collection

Use of MICS GIS in MICS Plus

- Disaggregate findings by level of severity
- Findings by Degree of Urbanisation



Some topics covered

% of destroyed or damaged houses
Type of damage
Relocation due to the hurricane

Food insecurity
Child nutrition

Social protection system
Healthcare services

HOW GOOD ARE OUR ESTIMATES COMPARED TO SAMPLE FRAME AT INDICATOR LEVEL?

MICS Plus approach – Conditional model-based (matching) substitution

- Euclidean Distance (Nearest Neighbour) Analysis used to identify the closest matching households
- Based on finding the most identical/similar households from the sample frame to replace non-responding or out-of-coverage households - background characteristics available in the sample frame and related to survey topics
- MICS Plus weights after substitution adjusted for non-response using urban/rural disaggregation

MICS approach – weight adjustment for non-response

- MICS Plus weights before substitution adjusted for non-response using urban/rural disaggregation
- Weights applied to households interviewed in the first stage (before substitution) of the Wave1 data collection

Propensity scores – weight adjustment using the propensity correction factor

- The model was prepared - using the direct inverse of the estimated average response propensity by deciles from a logistic regression model that regressed the MICS Plus over all the variables used for substitution
- MICS Plus weights before substitution multiplied by the adjustment factor

Data used in the analysis

- Interviewed HH in MICS 2018
 - MICS Plus sample
- Original and substitute households

MICS PLUS IMPLEMENTATION

	Georgia	Nigeria
Sample frame	MICS 2018	MICS 2021
Phone coverage	98 percent	88 percent
Consent and phone numbers	95 percent	71 percent
Selected sample size	2,118 households	3,699 households
Stratification	Regions, Urban/Rural areas	Urban/Rural areas
Reporting domains for the majority of indicators in MICS Plus	National, Urban/ Rural areas	National, Degree of urbanization
Sample selection	Random selection of 3 households from each of the 706 MICS 2018 clusters	Within each stratum, random selection of 11 percent of interviewed households in MICS 2021
Response rates	81 – 87 percent	60 percent
Substitution		
Number of indicators used for substitution	20	30
Number of households substituted	734	2,117
Percentage substituted (in the total sample)	35	57

SUBSTITUTION

Matching substitution based on Euclidean distance of MICS variables within the cluster (Georgia) or stratum (Nigeria):

	Georgia	Nigeria
Number of household members	+	+
Presence of children aged 0-17 years	+	+
Number of persons per room	+	+
Main material of the floor	+	
Type of cookstove mainly used for cooking	+	+
Type of space heating in the household	+	+
Type of lightning used in the household		+
Main source of drinking water	+	+
Type of toilet facility	+	+
Handwashing place		+
Any member have a computer or tablet	+	+
Any member has a mobile telephone	+	
Internet access at home	+	+
Tricycle		+
Ethnicity of HH head		+
Education of HH head		+
Wealth index decile*	+	

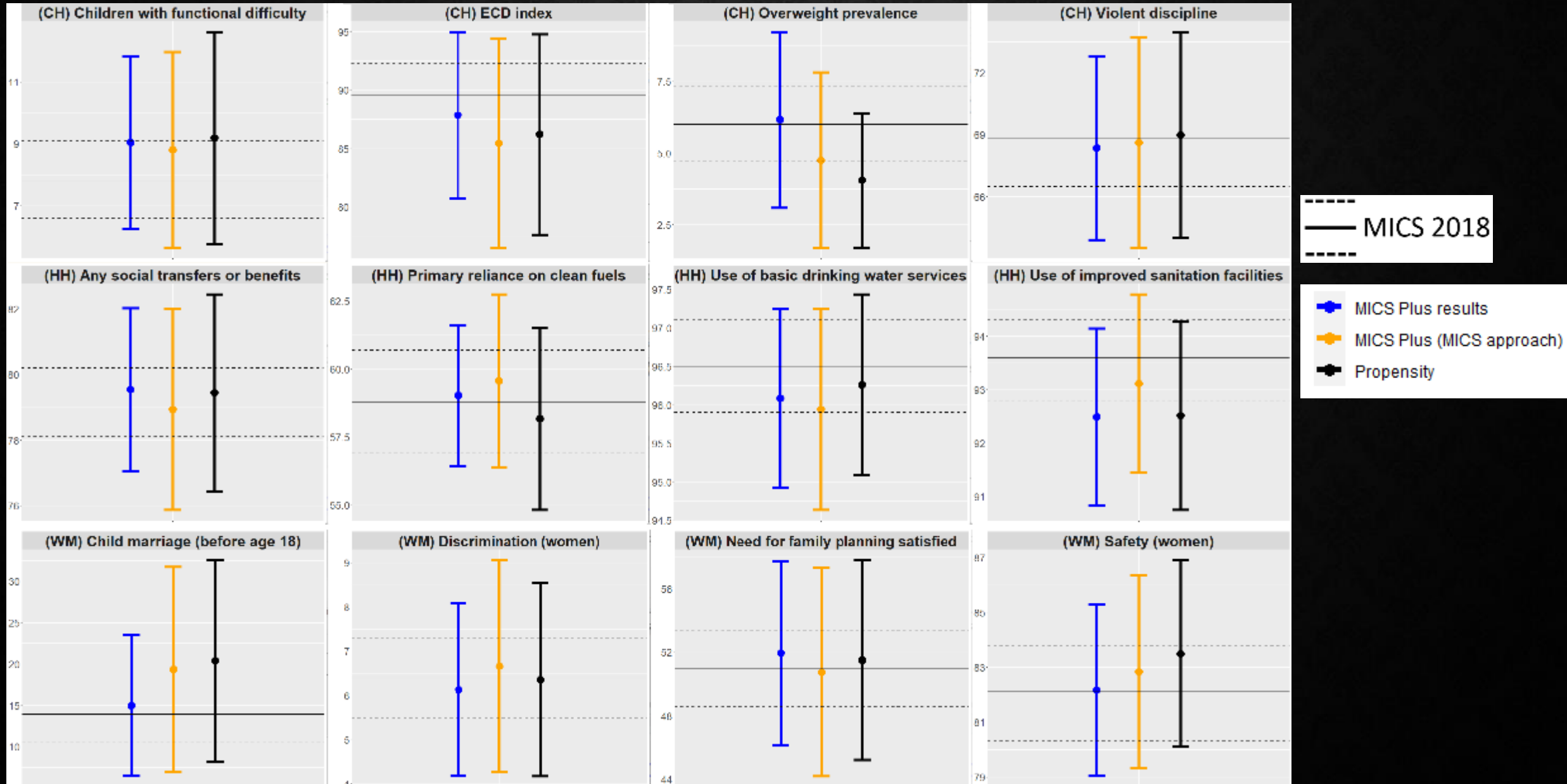
Household has:	Georgia	Nigeria
Wardrobe	+	
Gas stove/electric stove	+	
Non-mobile phone	+	+
Clock		+
Generator		+
Cushioned chair		+
Cupboard		+
Fan		+
VCR, VCD, DVD		+
Blender, mixer, or food processor		+
Electric iron		+
Wristwatch		+
Boat with motor		+
Tricycle		+
Electricity	+	+
Television	+	+
Refrigerator	+	+
Car, truck or van	+	+
Wristwatch	+	+

TESTING THE PERFORMANCE OF VARIOUS METHODS TO ADDRESS NON-RESPONSE

GEORGIA MICS PLUS

	Sample	Weights
MICS 2018	All households interviewed in MICS 2018 (12,700)	MICS 2018 sample weights
MICS Plus conditional substitution	All households interviewed for MICS Plus after substitution (1,836)	MICS Plus weight after substitution with non-response adjustment
Non-response weight adjustment	All households interviewed for MICS Plus before substitution (1,384)	MICS Plus weight before substitution with non-response adjustment
MICS Plus – propensity score adjustment	All households interviewed for MICS Plus before substitution (1,384)	MICS Plus weight before substitution with propensity correction factor

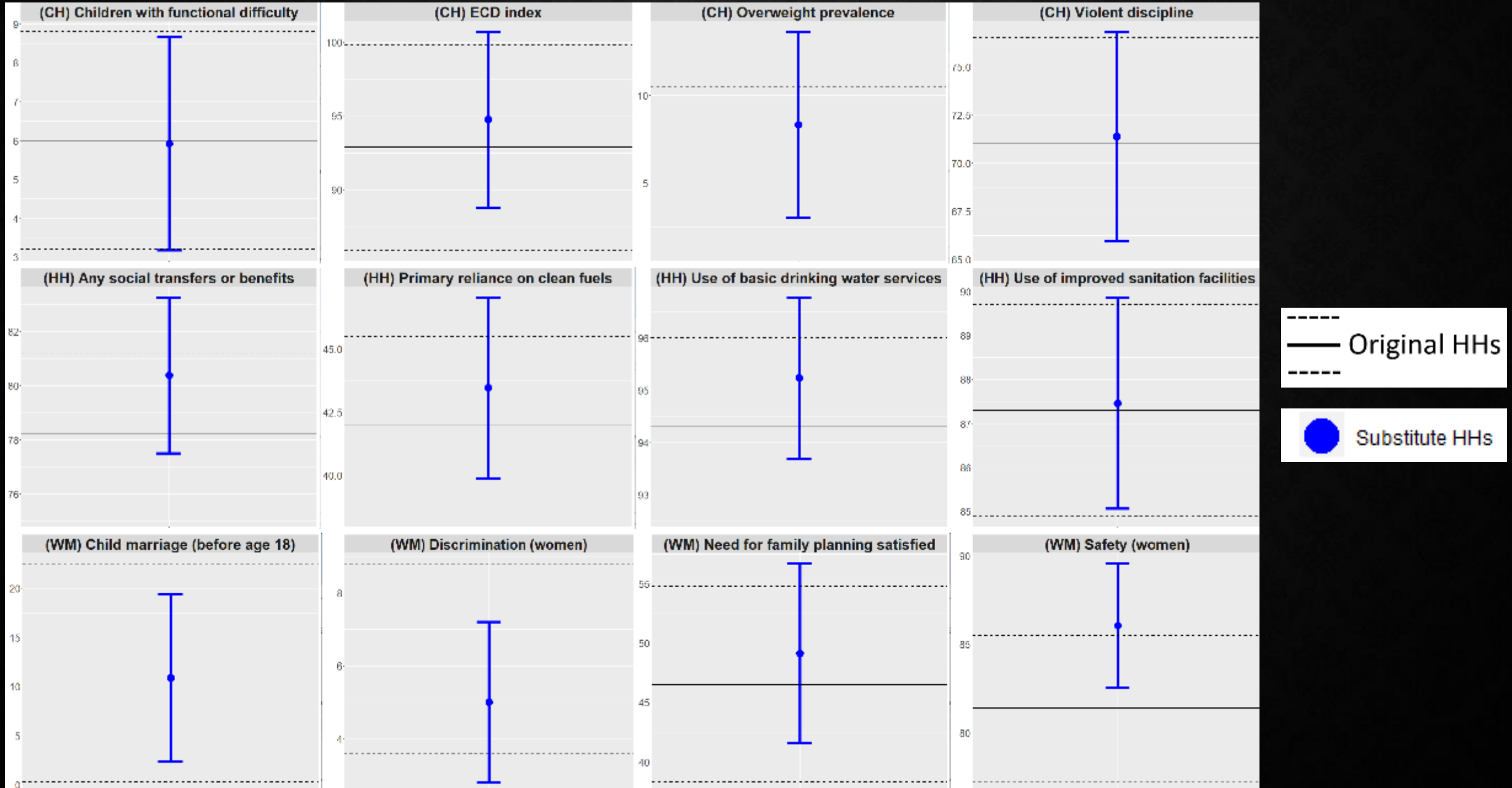
INDICATOR ESTIMATES IN MICS 2018 AND SIMULATION GROUPS GEORGIA 2018



HOW SIMILAR ARE THE ORIGINAL AND SUBSTITUTE HOUSEHOLDS AT INDICATOR LEVEL?

Group	Sample	Weights
Original households	MICS Plus selected households who could not be reached during the first stage of the data collection	Unweighted
Substitute households	MICS Plus substitute households to be called in the second stage of the Wave 1 data collection (using MICS 2018 sample design)	Unweighted

INDICATOR ESTIMATES FOR ORIGINAL AND SUBSTITUTE HOUSEHOLDS



VALIDATION OF FINDINGS

Main steps

- Bias analysis using MICS data (sample frame)
- Weights adjustments
- Testing MICS Plus findings using simulations on MICS data
- Deciding on the final weight adjustments

SAMPLE FRAME

MICS as a sample frame

- Higher response rates as consent is provided in advance
- Baseline data
- Characteristics of households and household members
- GIS data, Degree of urbanization
- Consent
- Dealing with possible bias - propensity score adjustments
- Connecting MICS Plus and MICS data
- Sampling design adjusted to country needs (specific groups or areas)
- Follow up on specific topics and/or collect additional information
- Scientific-based substitution

Other possible sample frames

- National register of households
- Census
- Other nationally representative household survey

Minimum requirements

- Up-to-date frame
- Access
- Availability of household and member characteristics
- Ethical considerations – consent

CURRENTLY

- Performing substitution in Waves 2 and later when needed and possible (decision made based on response rates and bias analysis)
- Validation analysis for low coverage, high non-response settings, etc., is a standard tool
- Must-have modules (List of household members, Education 3+, Household characteristics, WASH, Energy Use, etc.), plus a repository of modules used in MICS Plus
- Standardised tools
 - ToRs, MoU, timeline and topic-by-wave planning
 - Standardized steps in sample size calculation
 - CATI application (CSPro)
 - SPSS and R tabulation programs
 - Power Bi dashboard for data collection progress tracking (daily updates)
- Incentives to households

WHAT WE LEARNED TILL NOW

- Mode and respondent effect is highly dependent on the topic
 - Privacy and confidentiality
 - Sensitivity
 - Cultural context
 - More difficult if a recall is required
- Targeting specific respondents takes time and decreases the response rate (interviewers' feedback)
- Importance of the sample frame information for dealing with bias
- Ethical procedures do not allow us to ask for other adult household members' phone numbers without their consent
- Survey implementation by the National Statistical Office is highly preferable

NEXT ON OUR LIST

- Target eligible individuals, mimic MICS
- Use MICS Link – connect with admin data

Assessing (among others):

- Mode effects on child-specific indicators
- Respondents effect of child-specific indicators



Thank you

- [MICS Programme](#)
- [MICS Plus](#)
- [MICS GIS](#)
- [MICS YouTube](#)

