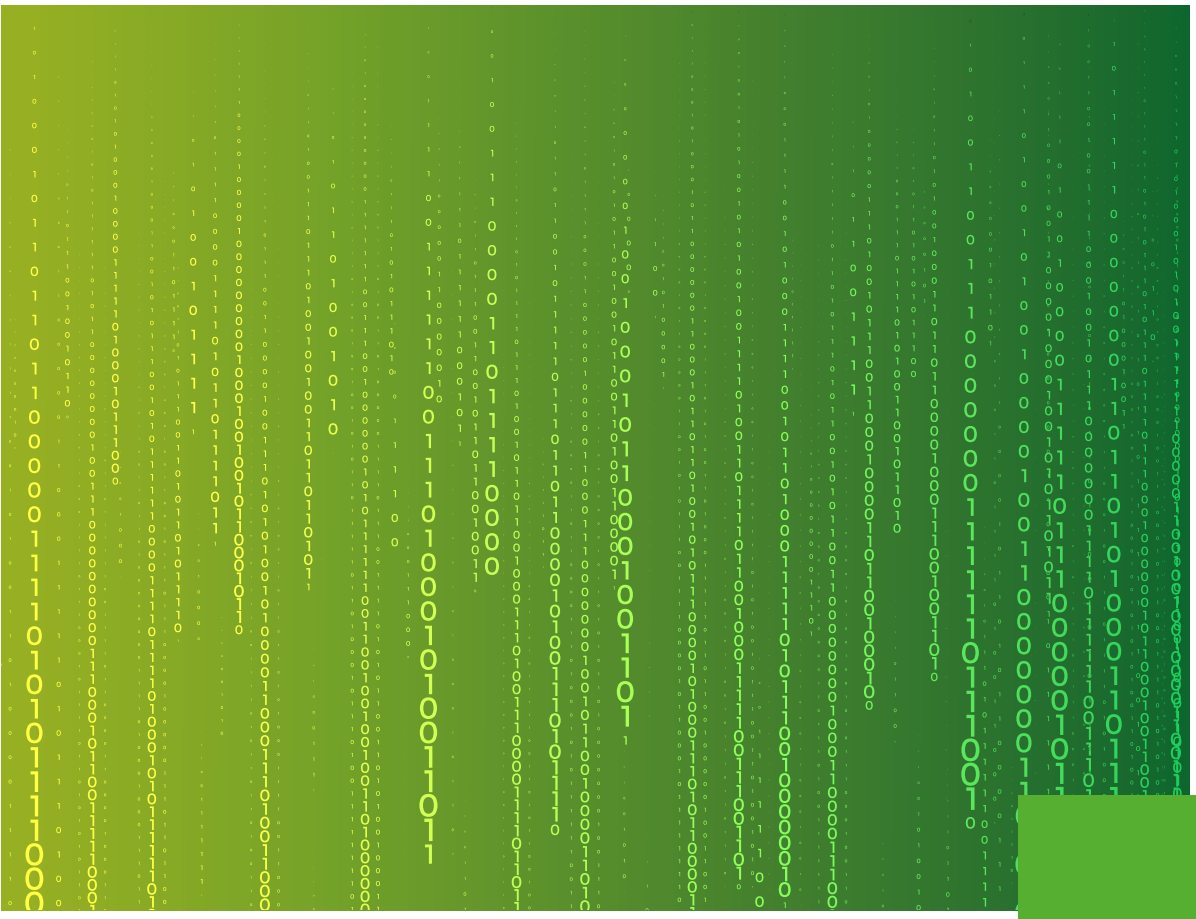
SHIMS3
2021
Eswatini
Population-based
HIV Impact Assessment



DATA USE MANUAL SUPPLEMENT

SIYINQABA

Eswatini Population-based HIV Impact Assessment 2021

SHIMS3 2021

This project is supported by the US President's Emergency Plan for AIDS Relief (PEPFAR) through CDC under the terms of cooperative agreement U2GGH002173. The findings and conclusions are those of the authors and do not necessarily represent the official position of the funding agencies.

SHIMS3 2021 Collaborating Institutions

Eswatini Ministry of Health (MOH)
Eswatini Central Statistical Office (CSO)
Centers for Disease Control and Prevention (CDC), Eswatini
Centers for Disease Control and Prevention (CDC), Atlanta
ICAP at Columbia University, New York
ICAP at Columbia University, Eswatini
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Donor Support

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Access this Manual Online

https://phia-data.icap.columbia.edu/datasets?country_id=2

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Abbreviations

ART	Antiretroviral Therapy
ARV	Antiretroviral
CD4	CD4+ T-Cell
CI	Confidence Interval
DHS	Demographic and Health Surveys
DNA	Deoxyribonucleic Acid
EA	Enumeration Area
HIV	Human Immunodeficiency Virus
ID	Identification
LAg-EIA	Limiting-Antigen Avidity Enzyme Immunoassay
OVC	Orphans and Vulnerable Children
PCA	Principal Components Analysis
PCR	Polymerase Chain Reaction
PHIA	Population-based HIV Impact Assessment
PrEP	Pre-exposure prophylaxis
SHIMS	Swaziland (eSwatini) HIV Incidence Measurement Survey

1 Background

1.1 What is SHIMS3 2021?

The Eswatini HIV Incidence Measurement Survey 3, 2021 (SHIMS3) is the third in a series of cross-sectional household-based surveys conducted in Eswatini. SHIMS3 is part of the PHIA Project, a series of population-based surveys, which are designed to assess the burden of HIV disease and impact of the health sector response to national HIV epidemics.

1.2 Purpose of the SHIMS3 2021 Data Manual Supplement

The purpose of the ***SHIMS3 2021 Data Manual Supplement*** (hereafter, "***Supplement"***) is to accompany the ***PHIA Data Manual*** (hereafter, "***Manual***"), which contains information on PHIA data generally applicable to all PHIA surveys, including general information on the data packages and their contents, a guide to getting started with the PHIA data, and details on the files and variables included within the PHIA data. This ***Supplement*** contains SHIMS3 survey specifications, including survey-specific eligibility criteria, sampling approaches and measures, and survey-specific documentation such as codebooks and questionnaires. A summary of SHIMS3 findings can be found in the ***SHIMS3 2021 Summary Sheet***, with detailed results in the ***SHIMS3 2021 Final Report***.

1.3 Other documentation and resources

In addition to this ***Supplement***, users should refer to the ***Manual*** for general information on PHIA data and PHIA publications such as the ***SHIMS3 2021 Summary Sheet*** and ***SHIMS3 2021 Final Report (forthcoming)***. The ***SHIMS3 2021 Final Report*** contains detailed results from SHIMS3 along with information on survey data collection procedures, establishing participation by the household head, procedures for individual consent, maintaining confidentiality during data collection and testing procedures, procedures for returning/obtaining test results, and referral for or direct linkage to services are included.

Several survey-specific pieces of documentation are provided as attachments to this ***Supplement***, including:

- ***Survey Questionnaires***: Three questionnaires are provided, the household, roster, and adult questionnaires. These questionnaires illustrate the questionnaire's structure, including the order that the questions were asked, each question's wording, variable names and labels, value coding and labels, and skip patterns.
- ***Codebook with Frequencies***: Codebooks are provided for each dataset, indicating all variables contained within and frequencies of all categorical variables. These codebooks document each variable's name, category (i.e., the questionnaire module or source data of the variable), label (i.e., question wording or other label), type (e.g., integer, select one, select multiple, free text, and date/time) and coding values and labels.
- ***Analytic Variable Flow Diagrams***: These flow diagrams define key analytic variables that combine sets of source variables.
- ***Sampling and Weighting Technical Report***: Technical details of sampling and weighting procedures are provided in deeper detail.

- ***Survey-Specific Table Specifications****:* Containing tabulation detailed specifications for any final report tables outside of the general tabulation plan.

With each dataset download there are also statistical programs provided to help users get started with the PHIA data in three commonly used statistical packages: Stata, SAS, and R.

  - ***SHIMS3 2021 Stata Intro Code.do***: Stata do file
  - ***SHIMS3 2021 SAS Intro Code.sas***: SAS program
  - ***SHIMS3 2021 R Intro Code.R***: R script

The Stata datasets have formats and labels included. For SAS, there is a second statistical program containing code to label all values for variables on each of the data sets.

  - ***SHIMS3 2021 SAS Formats.sas***: SAS program

2 Survey design and data collection

SHIMS3 was designed to assess the prevalence and incidence of HIV infection in the Eswatini population, to assess the coverage and impact of HIV services at the population level, and to characterize HIV-related risk behaviors using a nationally-representative sample of adults aged 15 years and older. It was a cross-sectional, multi-stage, population-based survey of households across Eswatini. Its target population was all people ages 15 years and older who slept in the household the night before the survey.

Table 1. SHIMS3 survey design characteristics

Survey design characteristics	Description
Survey design	
Data sources for survey selection and weighting[1]	Eswatini 2017 Population Census, SHIMS2 2016-2017 survey,
Sampling stratum	Regions (Hhohho, Lubombo, Manzini, Shiselweni)
Primary sampling unit	2017 Eswatini Census Enumeration Areas (EAs)
Urban/rural categorization	Urban and rural
Survey administration	
Data collection dates	
Languages	siSwati, English
Sample size[2]	
Number of selected EAs	200
Number of selected households	7,000
Number of rostered individuals (all ages)	25,132
Survey participation	
Number of completed household interviews	5,413
Number of completed individual interviews	12,043
Number of completed biomarker tests	11,199

[1] See the ***Sampling and Weighting Technical Report*** for more details on survey weighting approach.

[2] See the ***SHIMS3 Summary Sheet*** for response rates.

Exceptions to the general PHIA design

Table Changes

The tables in SHIMS3 follow the general PHIA2 template. Note that the tables in chapter 11 have been re-ordered as compared with the template. Table 12.8, reporting the percentage of HIV negative adults who had ever taken PrEP, was added to the standard set of tables.

Questionnaire Changes

There were several survey-specific changes to the questionnaire in SHIMS3. Questions were added to address child circumcision status and age of circumcision, as well as HIV self-testing location, method, and result confirmation. Questions and response options related to COVID

were also added, including three additional questions on the effects of the COVID pandemic on ARV availability.

These added questions, as well as questions with differences from the PHIA standard that could cause misinterpretation or incomparability with corresponding or similar questions in other PHIA countries, have had their dataset variables renamed to use a "_sz" suffix. The full list of country-specific questions, and questions with country-specific changes is shown in the table below. Please consult the questionnaires attachment for full details of question options and wording.

Table 2. SHIMS3 questions and variables with country-specific changes

Household Questionnaire	
Question	**Variable Name(s)**
Household ownership of selected assets	hhqown_a-h_sz, hhqown_w_sz, hhqown_y_sz, hhqown_z_sz
Was any economic support received by the household related to COVID-19?	econsupcovid_sz
Household Roster	
What region or country is [NAME] in currently?	liveregionlivecountry_sz
Adult Questionnaire	
Question	**Variable Name(s)**
Language of questionnaire	lngvqx_lng_sz
Language of interview	lngvint_lng_sz
Native language of participant	lngnat_lng_sz
What is the highest level of school you have completed?	schcom_sz
Before you moved here, which region did you live in? If you lived outside of Eswatini, which country did you live in?	outregionwhr_sz
The last time you were away from home for more than a month, where were you?	whereout_sz
What was the main reason you went there?	reasonaway_sz
What was the main reason you did not take ARVs while you were pregnant with [CHILDLAST/PRGTWINNAME*]?	arvnrpg_sz
How do you normally receive your ARVs?	arvloc_sz
How do you normally receive your ARVs? (analytic variable including 'not on ARVs' category)	arvlocalt_sz
What is/was the sex of [CHILDLAST/PRGTWINNAME*]?	childlastsex1-2_sz

Was [CHILDLAST/PRGTWINNAME*] circumcised?	childwascirc1_sz
Why was [CHILDLAST/PRGTWINNAME*] not circumcised?	whynocirc1_sz
At what age was [CHILDLAST/PRGTWINNAME*] circumcised?	agecircage1_sz
At what age was [CHILDLAST/PRGTWINNAME*] circumcised?	agecircagenum1_sz
Are you circumcised?	mcstatus_sz
Why have you never been tested for HIV?	hivtstnvrrsn_a-l_sz; hivtstnvrrsn_x_sz
Where was your last HIV test done?	hivtstlocation_sz
Where did you get the HIV self-test kit?	hivselftstloc_sz
Was the test self-administered or assisted?	hivselftstmethod_sz
Did you visit the health facility for retesting to confirm your HIV status?	hivselftstconfirm_sz
What is the main reason why you have never received care or treatment for HIV from a health care provider?	hivcnotrsn_sz
What is the main reason you have never taken ARVs?	arvsnottake_sz
Can you tell me the main reason why you stopped taking ARVs?	arvsnotcurrsn_sz
Since March 2020, the COVID-19 pandemic has affected many medical services including HIV testing and ART clinics. Was there any period since March 2020 when you obtained (or were told to obtain) your ART in a different place than where you usually receive them?	arvloccovid_sz
The last time you picked up or received your ART, were you told that you were being given a longer refill because of the COVID-19 partial lockdown?	arvamtcovid_sz
Since March 2020, the COVID-19 pandemic has affected many medical services including HIV testing and ART clinics. Was there any period since March 2020 when you interrupted your ART due to the COVID-19 partial lockdown?	arvinterrcovid_sz
Why is it not easy for you to get a condom?	condomnoteasyrsn_a-f_sz; condomnoteasyrsn_x_sz
How confident would you feel to negotiate condom use with a sexual partner?	condomnegotiate_sz

3 Overview of survey questionnaires

In participating households, a household questionnaire is administered to the designated household head. The household head provides consent for the household to participate in the survey, after which individual members are rostered during the household interview.

Then, adult individual questionnaires are administered to eligible and consenting individuals aged 15 and older in the household. Different consent criteria are determined in each country. It should be noted that minors aged 15-17 years are consented via a different process than adults, although they are grouped as adults for sampling and reporting. The consent criteria included:

- Women and men aged 18 years and older (residents or visitors) who slept in the household the night before the survey, and were willing and able to provide verbal consent
- Adolescents aged 15-17 years (residents or visitors), who slept in the household the night before the survey, were willing and able to provide verbal assent, and whose parents or guardians were willing and able to provide verbal permission for their participation.
- Adolescents aged 15-17 years with certain special circumstances (e.g. emancipated minors) who slept in the household the night before the survey and were willing and able to provide verbal consent.

Modules included in each questionnaire and their associated eligibility criteria are listed in the table below. The content and order of each module may differ between SHIMS3 and other PHIA surveys. Users can refer to each PHIA survey's ***Survey Questionnaires*** and ***Codebooks*** provided as attachments to this document.

Table 3. SHIMS3 questionnaire

Questionnaire module	Eligibility criteria
Household questionnaire	Sample of households within selected EAs
Household roster	
Household roster for minors	
Orphans and Vulnerable Children (OVC) Support	
Deaths in the household	
Household characteristics	
Economic support	
Individual questionnaire – adults (15 years and older)	All eligible[1] and consenting individuals
Respondent background	
Marriage	
Reproductive history	All women
Male circumcision	All men
Sexual activity	
HIV testing	
HIV care and treatment	All self-reporting HIV-positive adults
Tuberculosis and other health issues	
Alcohol use	
Exposure to prevention intervention	All individuals age 15-24

[1] Household members and visitors were eligible if they were confirmed to have slept in the household the night before the interview.

4 Biomarker testing

In SHIMS3, biomarker testing was offered to all rostered and consenting adults (15+ years). Eligibility criteria for receiving tests for specific biomarkers are provided in the table below.

Table 4. SHIMS3 2021 biomarker testing

Biomarker	Eligibility criteria
HIV serostatus[1]	All participants
Limiting Antigen Enzyme (LAg-Avidity)[2]	All HIV+ individuals with viral load ≥ 1000
CD4+ cell count	All HIV+ individuals
HIV RNA viral load	All HIV+ individuals
Antiretroviral (ARV) drug presence	All HIV+ individuals
ARV drug resistance[3]	All HIV+ individuals with viral load > 200

[1] See HIV testing algorithm below.
[2] Recent infection testing was initially limited to those with unsuppressed viral load ≥ 1000 copies/mL. Testing was later carried out for the remaining HIV+ participants and results are included in the final datasets.
[3] ARV drug resistance testing and weighting is not yet complete. These data will be made available with a future release.

SHIMS3 HIV testing algorithm

For participants 15 years of age or over, initial household-based HIV testing was performed with the national HIV testing algorithm using two HIV rapid tests: see the attached ***HIV testing methodology diagram***. The Eswatini HIV rapid testing algorithm uses two tests, Determine™ and Unigold™. These are performed in sequence, followed by further parallel testing for confirmation of discordant results. As per the testing algorithm attached, individuals with a non-reactive result on the screening test (Determine™) were reported as HIV-negative. Individuals with a reactive screening test underwent subsequent testing with Unigold™. Those with a reactive result on both screening and confirmatory tests were classified as HIV positive and were referred to the health facility for enrollment into care, as required by the national testing guidelines. Individuals with a reactive Determine™ test followed by a non-reactive Unigold™ test were tested again by repeating both tests in parallel. Those with both tests positive or both tests negative at this stage were classified accordingly, with individuals that were discordant on the repeat parallel tests being referred to a clinic for testing within 14 days. For the purposes of the survey, samples with indeterminate rapid test results received further testing and evaluation to allow for final classification of HIV status.

All positive and inconclusive samples were retested by Geenius™ HIV 1/2 Confirmatory Assay (Bio-Rad) or similar confirmatory test using collected blood samples. Discrepant laboratory and field results underwent further QA investigation to determine possible specimen mix-up, transcription error, or other causes.

5 Data confidentiality

As noted in the ***Manual***, various risk mitigation actions were used to protect the privacy and confidentiality of respondents in the public use data. Some of these actions apply to all PHIA surveys, while other actions are data-driven decisions motivated by various risk disclosure concerns. These concerns include small counts as a result of certain combinations of variables and values which may introduce individual disclosure risk concerns. This section outlines the variables that have been identified for disclosure risk remediation and the specific data action taken to address the risk concern.

The following date variables were redacted for all PHIA surveys prior to public release:

Table 5. Date variables redacted for all PHIA surveys

Dataset(s)	Variable
Household	dieddated_01- dieddated_03
Adult individual	surveystday
	birthday
	birthmon

Top-coding is the process of re-coding values above an upper bound to the value of the upper bound. Age for all respondents was top coded at 80. There was also top-coding to collapse small counts with nearby values, in which the data were re-coded so that the highest category contains at least 25 cases or 1 percent of households or individuals reporting the category. Variables that underwent top-coding are listed below:

Table 6. Variables that underwent top-coding

Dataset(s)	Variable	Top-coding upper bound
Adult individual	agemar	40
Adult individual	arvsmissdays	5
Adult individual	firstsxage	30
Adult individual	husnwif	3
Adult individual	lifetimesex	25
Adult individual	liveb	11
Adult individual	mcage	40
Adult individual	medinhmonths	6
Adult individual	monthtimes	7
Adult individual	numwif	2
Adult individual	part12monum	6
Adult individual	partage1	80
Adult individual	partage2	80
Adult individual	wifliveew	2
Adult individual	arvamtm	6
Adult individual	chtsthivagelastm1	24
Adult individual	chtsthivagem1	24
Adult individual	livetimey	71
Household	roomsleep	8
Household	diedagey_01	80
Household	diedagey_02	80

Bottom-coding is the process of re-coding values below a lower bound to the value of the lower bound. Bottom-coding was used collapse small counts with nearby values, in which the data were re-coded so that the lowest category contains at least 25 cases or 1 percent of households or individuals reporting the category. Variables that underwent bottom-coding are listed below:

Table 7. Variables that underwent bottom-coding

Dataset(s)	Variable	Bottom-coding lower bound
Roster	liveawayy	2019
Household	diedagey_01	5
Household	diedagey_02	5
Adult individual	agemar	14
Adult individual	arvfty	2004
Adult individual	cervcntsy	2010
Adult individual	firstsxage	14
Adult individual	hivcly	2019
Adult individual	hivlastnegy	2004
Adult individual	hivtesty	2005
Adult individual	hivtfposy	2005
Adult individual	medinhmonths	1
Adult individual	monthwheny	2010
Adult individual	partage1	14
Adult individual	partage2	14
Adult individual	vltestlsty	2018

The following variables and values were combined with the code for “other” due to small counts or percentages:

Table 8. Variables and values collapsed in to the “other” classification

Dataset(s)	Variable	Value(s)
Roster	liveregionlivecountry_sz	8
Roster	relattohh	9
Household	cookingfuel	8
Household	matroof	11, 22, 34
Household	watersource	91
Household	matexwalls	11, 12, 23, 24, 25, 35, 36, 37
Household	matfloor	21, 22, 31, 32, 35, 36, 37
Adult individual	arvswitchwhy	3
Adult individual	partrelation1	7, 8
Adult individual	partrelation2	2, 6, 8
Adult individual	partrelation3	1, 2, 6, 8
Adult individual	whynocirc1_sz	4, 6, 8
Adult individual	workind	1, 15
Adult individual	adhivprev_f	1
Adult individual	adhivprev_g	1
Adult individual	chronicmed_e	1
Adult individual	cmethod_b	1
Adult individual	cmethod_h	1
Adult individual	cmethod_i	1
Adult individual	condomnoteasyrsn_c_sz	1
Adult individual	condomnoteasyrsn_f_sz	1

Adult individual	hivtstlocation_sz	6, 7, 9
Adult individual	hivtstnvrrsn_b_sz	1
Adult individual	hivtstnvrrsn_c_sz	1
Adult individual	hivtstnvrrsn_g_sz	1
Adult individual	hivtstnvrrsn_h_sz	1
Adult individual	hivtstnvrrsn_j_sz	1
Adult individual	hivtstnvrrsn_k_sz	1
Adult individual	hivtstnvrrsn_l_sz	1
Adult individual	outregionwhr_sz	7, 8
Adult individual	reasonaway_sz	5, 8
Adult individual	whereout_sz	8, 9, 10, 11, 12, 13, 14

The following variables were redacted entirely due to small counts or percentages:

Table 9. Variables that were redacted

Dataset(s)	Variable
Household	dieddatem_01
Household	dieddatem_02
Household	dieddatem_03
Adult individual	childalive2
Adult individual	childbrstfd2
Adult individual	childbrstfdnow2
Adult individual	childlastsex2_sz
Adult individual	chtsthivbirth2
Adult individual	deathagemo1
Adult individual	deathageyr1
Adult individual	agecircagem1_sz
Adult individual	arvnrpg_sz
Adult individual	arvsnotcurrsn_sz
Adult individual	arvsnottake_sz
Adult individual	hivcnotrsn_sz

The following variables had new combined categories created.

Table 10. Variables with new categories

Dataset(s)	Variable	Values	New Category
Adult individual	arvloc_sz	5, 6	96 – Other
Adult individual	arvlocalt_sz	5, 6	96 – Other
Adult individual	cerncnrslt	4, 5	5 – Unclear/Inconclusive/Did Not Receive Results
Adult individual	parthivsat2	1, 2	1 – He/She Is Positive
Adult individual	parthivsat3	1, 2	1 – He/She Is Positive
		3, 4	3 – He/She Is Negative
Adult individual	arvamtm	0, 1	1 – 0 or 1 months.
Adult individual	schcom_sz	1, 2	2 – Level 0 (Grade 0) or Level 1 (Primary, Year 1)
		17, 18	17 – Level 3 (Master's Degree or Doctoral Program)

6 Dataset specifications

Table 11. SHIMS3 2021 dataset specifications

Dataset (filename)		Number of observations	Number of variables
Household	shims32020hh	7,000	165
Roster	shims32020roster	25,132	62
Adult individual	shims32020adultind	12,043	395
Adult biomarker	shims32020adultbio	11,199	145
Drug resistance[1]	shims32020drugresistance	TBD	TBD
Household intermediary weights	shims32020hhintermediarywts	7,000	103
Individual intermediary weights	shims32020indintermediarywts	25,132	403
Dataset specification		**Description**	
Two-letter country code prefix for ID variables		SZ	
Survey weighting variables			
No. of jackknife replicates		98	
Survey weights provided (variable prefix)		Household (hhwt) Individual interview (intwt) Blood test (btwt)	
Selected variable parameters			
Household characteristics used for wealth index construction		*See next section*	
Mean duration recent infection (MDRI) used for HIV incidence estimation		130 days (95% CI 118-142 days, standard error 37.48575911)	

[1] ARV drug resistance testing and weighting is not yet complete. These data will be made available with a future release.

7 Wealth index

As described in the ***Manual***, a wealth index is constructed using principal components analysis (PCA) on household characteristics and asset ownership variables that can vary by country. The table below lists the variables used to construct the wealth index for SHIMS3 2021.

Table 12. Household characteristics used for wealth index construction in SHIMS3 2021

Indicator variable	Type	Description
memsleep	Numeric (count)	Number of household members per sleeping room
matroof	Categorical	Dwelling roofing material
matexwalls	Categorical	Dwelling wall material
matfloor	Categorical	Dwelling floor material
toilettype	Categorical	Type of toilet used by the household
watersource	Categorical	Source of water used by the household
cookingfuel	Categorical	Type of cooking fuel used by the household
econsup12_a	Binary	Household did not receive any form of external economic support in the last 12 months
For the remainder of the variables:		*Does this household have/own…?*
hhqitems_a	Binary	Electricity
hhqitems_b	Binary	A working radio
hhqitems_c	Binary	A working television
hhqitems_d	Binary	A working telephone/mobile telephone
hhqitems_e	Binary	A working refrigerator
hhqown_a	Binary	A bicycle
hhqown_b	Binary	A working motorcycle or motor scooter
hhqown_c	Binary	A working car or truck
hhqown_d	Binary	A working boat with a motor
hhqown_e	Binary	Cows
hhqown_f	Binary	Goats/sheep
hhqown_g	Binary	Poultry (eg. ducks or chickens)
hhqown_h	Binary	Other animals (horses, donkeys, camels, etc.)

Wealth scores and model performance

The first component of the PCA model is interpreted as an index of household wealth. However, it does not explain a large proportion of the total variance: it accounts for only around 7.09% of the total variance in the common model, 4.81% for the urban model, 4.55% for the peri-urban model, and 5.85% for the rural model. Howe et al. note that this figure is “often less than 20%”.[1] The results from SHIMS3 2021 are consistent with those of other DHS studies in similar settings.[2-4]

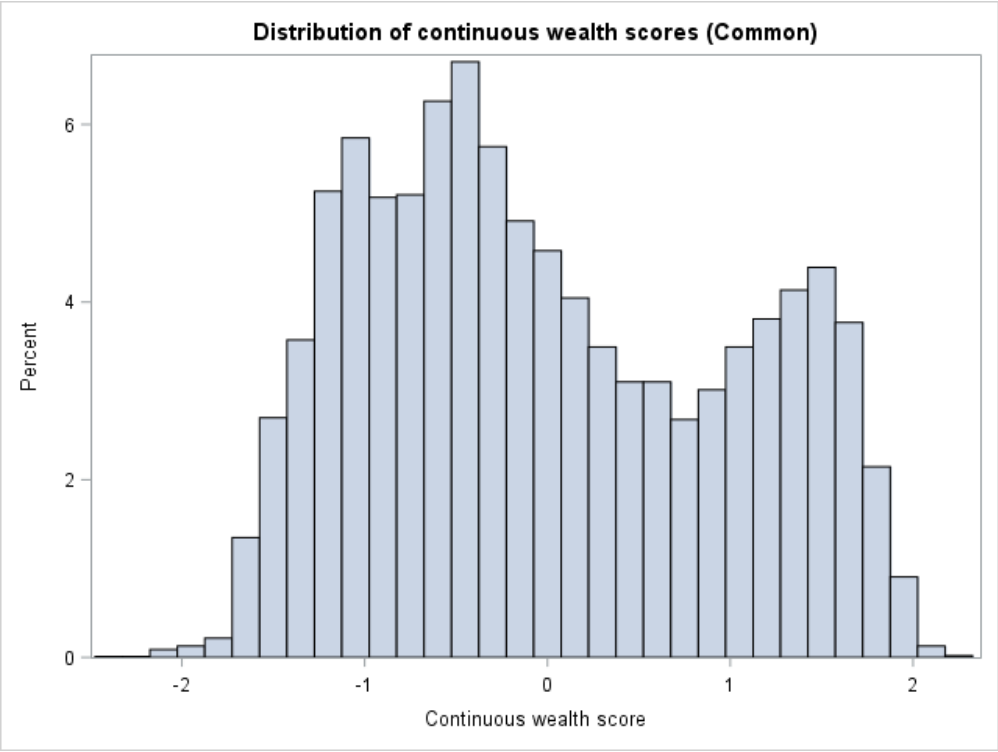
The PCA method does not guarantee the extraction of an index that is actually well-correlated with wealth but results from the PCA can be used to check whether the interpretation of the model makes sense. The component loading for each asset variable describes the association between that asset and the wealth index. The following table shows the most influential variables as measured by absolute value of their loading in each model:

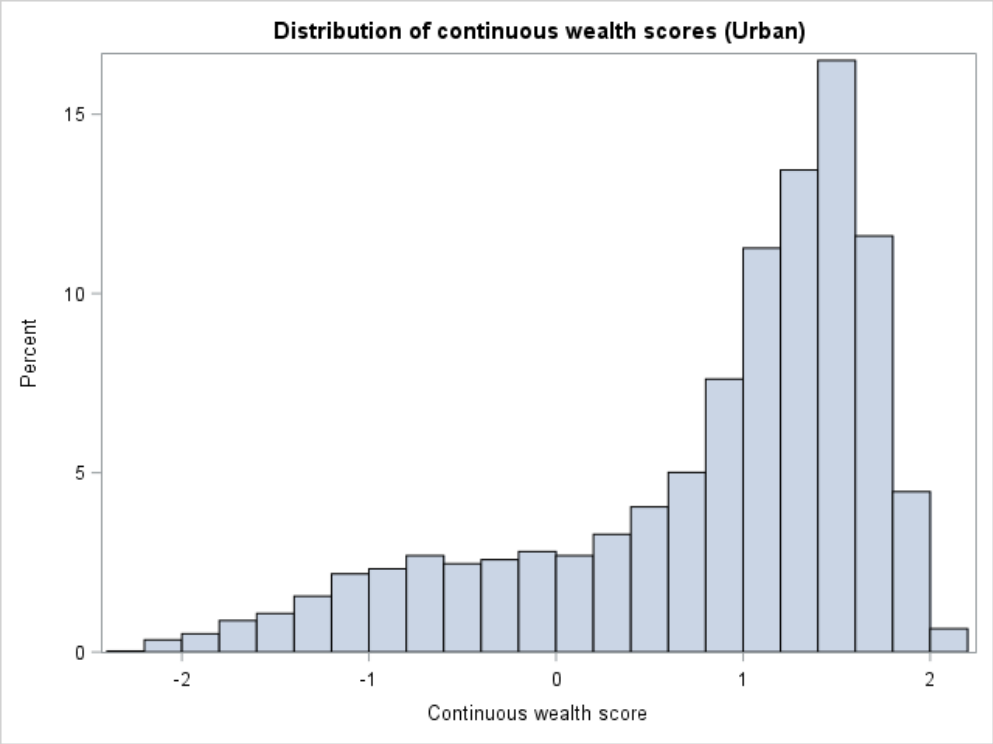
Table 13. PCA results for SHIMS3 2021 wealth quintile

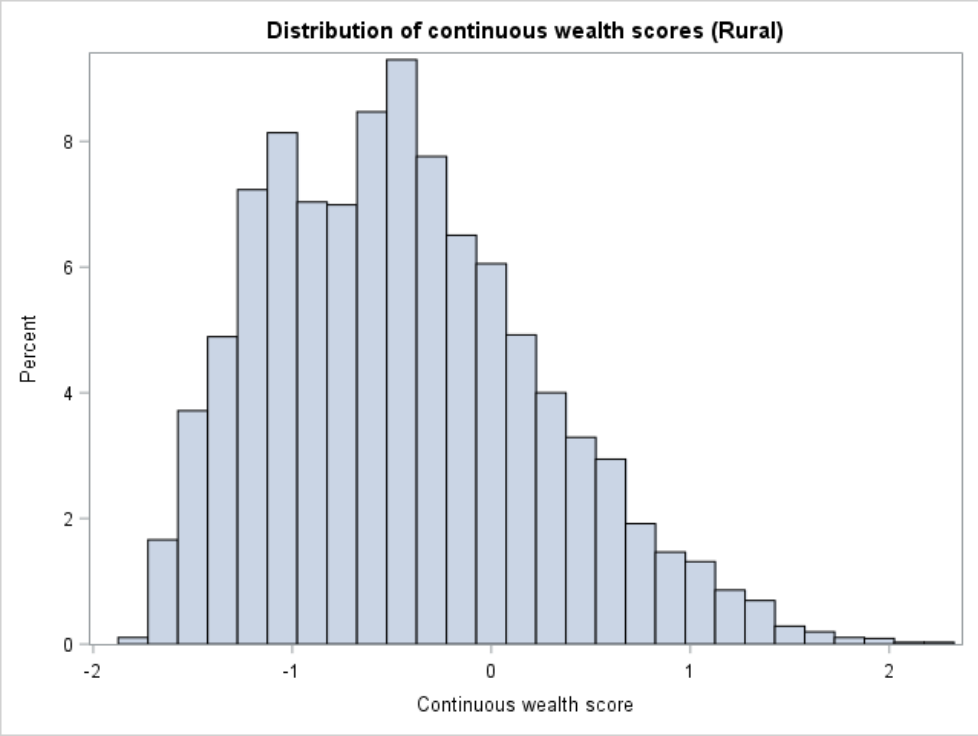
		Component loading		
Variable	**Category**	**Common model**	**Urban model**	**Rural model**
Toilet type	Flush or pour flush	0.721111	0.73028	0.63840
Cooking fuel	Electricity	0.63248	0.51415	0.57885
Dwelling flooring material	Ceramic tiles	0.60800	0.63108	0.65243
Toilet type	Traditional pit latrine	-0.58893	-0.72919	-0.43220
Electricity	Yes	0.57095	0.65004	0.59513
Refrigerator	Yes	0.56329	0.65476	0.60600
Television	Yes	0.56164	0.62201	0.61646

Type of toilet in the house and cooking fuel were particularly important for the determination of wealth score. Note that variables with negative component loadings are associated with lower wealth, while those with positive loadings indicate more wealthy households.

The distribution of wealth index values from the model is shown in the figures below, first the composite wealth index for all households, and then the urban and rural-specific wealth indices. The distribution for the composite wealth index is skewed towards households with less wealth, with a smaller secondary peak towards the higher end of the score range.




Distribution of continuous wealth scores (Urban)
Percent
15
10
5
0
-2
-1
0
1
2
Continuous wealth score


Distribution of continuous wealth scores (Rural)
Percent
8
6
4
2
0
-2
-1
0
1
2
Continuous wealth score

8 References

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9 Attachments

9.1 Questionnaires

SHIMS3 Data Manual Supplement Attachment 1 - Questionnaires.xlsx

9.2 Codebook with frequencies

SHIMS3 Data Manual Supplement Attachment 2 - Codebook.docx

9.3 Flow Diagrams for selected analytic variables

SHIMS3 Data Manual Supplement Attachment 3 - Flow Diagrams for Analytic Variables.pdf

9.4 HIV Testing Methodology Diagram

SHIMS3 Data Manual Supplement Attachment 4 - Testing Methodology Diagram.pdf

9.5 Sample design and weighting report

SHIMS3 Data Manual Supplement Attachment 5 - Sampling and Weighting Technical Report.docx

9.6 Modified table specifications for tuberculosis clinic attendance

SHIMS3 Data Manual Supplement Attachment 6 - Additional Table Specifications.xlsx

9.7 Requesting data

SHIMS3 2021 data can be requested for use in research and analysis under the following conditions:

- Recipient will use this data only for the purpose of the research and analysis described in this data request. The recipient will submit a new request if they intend to use the data for another purpose.
- Recipient will not share this data with other researchers, with the exception of those listed in this data request as co-researchers for the project.
- Recipient will ensure that co-researchers are aware of and follow the terms of this data use agreement.
- Recipient will treat all data as confidential. Recipient will not use the data to deliberately compromise or otherwise infringe on the anonymity of participants' information and their right to privacy and will not attempt to identify any individual, household, or community in the survey based upon these data.
- Recipient will not publish any result in which participants, EAs or communities can be identified.
- Recipient will keep data in a secure location where it cannot be accessed by unauthorized users.
- Recipient will not use this data for any commercial venture.

- Recipient agrees that this agreement terminates immediately upon any breach by the recipient of the data or any co-researchers.

To see a demonstration of the data request process, watch the video here. The process is described in detail below.

To make a data request, first create an account at https://phia-data.icap.columbia.edu/ using the "Register" button and login using the button at the top right of the page. Once logged in, click "Data Sets" in the top menu to see the list of countries available. For SHIMS3, select "Eswatini" from the list.

The top part of the page shows the PHIA survey years and datasets available for request, and the lower part shows the available documentation. Documentation may be downloaded without submitting a request. To obtain access to datasets, select the datasets you require for your project and click "Request Access". Fill out the project title and project description, including the general aims of your research and a brief description of your planned analysis. Fill out any co-researcher details, then click "Next". Read the conditions of use and enter your name to agree to the conditions and submit your request. Requests will generally be reviewed and approved within 1-2 business days. You will receive an email confirmation of approval. Once access has been approved, the check marks beside the requested datasets will be replaced with clickable buttons which will begin downloads of the data.

Requests for PHIA geospatial data have a more rigorous approval process because of the additional privacy and confidentiality risks associated with location data. Requests for geospatial data must explain why geomasked cluster centroid data are essential to the proposed analysis and describe the specific spatial analytical methods that will be used. Refer to the PHIA Geospatial Data Use Manual, available freely on each country's data request page, for full information on the content of the geospatial datasets.

For assistance or for any questions about the data, you can use the help request section at the bottom of https://phia-data.icap.columbia.edu/help to submit a question.

9.8 Data explorer

The ICAP PHIA data site also includes data visualization tools which allow you to look up survey estimates for specific countries and to compare across countries. To access these, visit https://phia-data.icap.columbia.edu/visualization. To see a video demonstration of the data visualization tools, watch the video here. The main steps to create a data visualization are described below.

1. Choose Country

Select the country or countries you are interested in by clicking them on the map, then click "Next".

2. Choose Indicator

Use the "Indicator" drop down to choose the indicator of interest. Typing in the indicator box after clicking the drop down allows you to filter the indicators available. Many indicators include subindicators, which are selected using the subindicator drop down. For example, after

selecting the “90-90-90 (self-reported ARV, Overall Percentages)” indicator, you can choose some or all of “Diagnosed”, “On Treatment”, and “Viral Load Suppression” as subindicators.

3. Specify Age and Gender

The age and gender drop downs allow you to subset the data visualization to include the age group and gender you are interested in.

4. Choose Stratification

Stratification categories allow you to obtain estimates broken down by a range of variables, such as age groups, education, marital status, and others. The available stratification options depend on the indicators selected.

5. Choose Visualization Type

Visualizations can be selected using the “Chart”, “Table”, and “Map” buttons in the top right of the display. The default is Chart, which typically displays a horizontal bar chart showing percentages with a 95% confidence interval, or for some indicators a count or median. The Table option shows the estimates in a tabular format, including columns for each selected option. The Map displays the estimates as a heat map for the selected countries.

6. Download

Chart and Table visuals can be saved by clicking the download button next to the question mark on the top right of the page. For a Chart, the download is a static image of the visual. For a table, a CSV file is generated for download.

For help with the data visualization tools, click the help button question mark in the top right of the page, or visit https://phia-data.icap.columbia.edu/help.