

Sierra Leone

EquityTool: Released 30th August 2017

Source data: [DHS 2013](#)

of survey questions in original wealth index: 34

of variables in original index: 133

of survey questions in EquityTool: 10

of variables in EquityTool: 13



Questions:

	Question	Option 1	Option 2	Option 3
Q1	Does your household have: electricity?	Yes	No	
Q2	... a television?	Yes	No	
Q3	... refrigerator?	Yes	No	
Q4	... a mobile telephone?	Yes	No	
Q5	Does any member of this household own: a watch?	Yes	No	
Q6	Does any member of this household have a bank account?	Yes	No	
Q7	What is the main material the floor is made of in your household?	Earth / sand / dung	Cement	Other
Q8	What is the main material the exterior walls are made of in your household?	Cane / palm / trunks / dirt	Cement	Other
Q9	What is the main material the roof is made of in your household?	Metallic sheets	Other	
Q10	What type of fuel does your household mainly use for cooking?	Charcoal	Wood	Other

Technical notes:

Typically, the full wealth index found in the relevant DHS dataset is simplified to create the EquityTool. In the case of the Sierra Leone DHS 2013, the full wealth index normally published by ICF was unavailable. The full wealth index was recreated in a process similar to that used originally in the DHS survey, using 133 variables and 34 questions. This recreated wealth index was then simplified to create the EquityTool.

The recreated wealth index differed slightly from the original wealth index, as the public dataset is not exactly the same as the one used to create the original wealth index. During this process, a mistake in the original syntax was encountered in the variable reflecting whether a household shares its toilet facility. The syntax appears to code households that do share as not sharing, and vice versa. This mistake was corrected in our recreated wealth index.

The standard simplification process was applied to achieve high agreement with the original wealth index. Kappa was greater than 0.75 for the national and urban indices. Details on the standard process can be found [in this article](#).

Level of agreement:

	National Population (n=12,629)	Urban only population (n=4,569)
% agreement	85.5%	84.4%
Kappa statistic	0.774	0.756

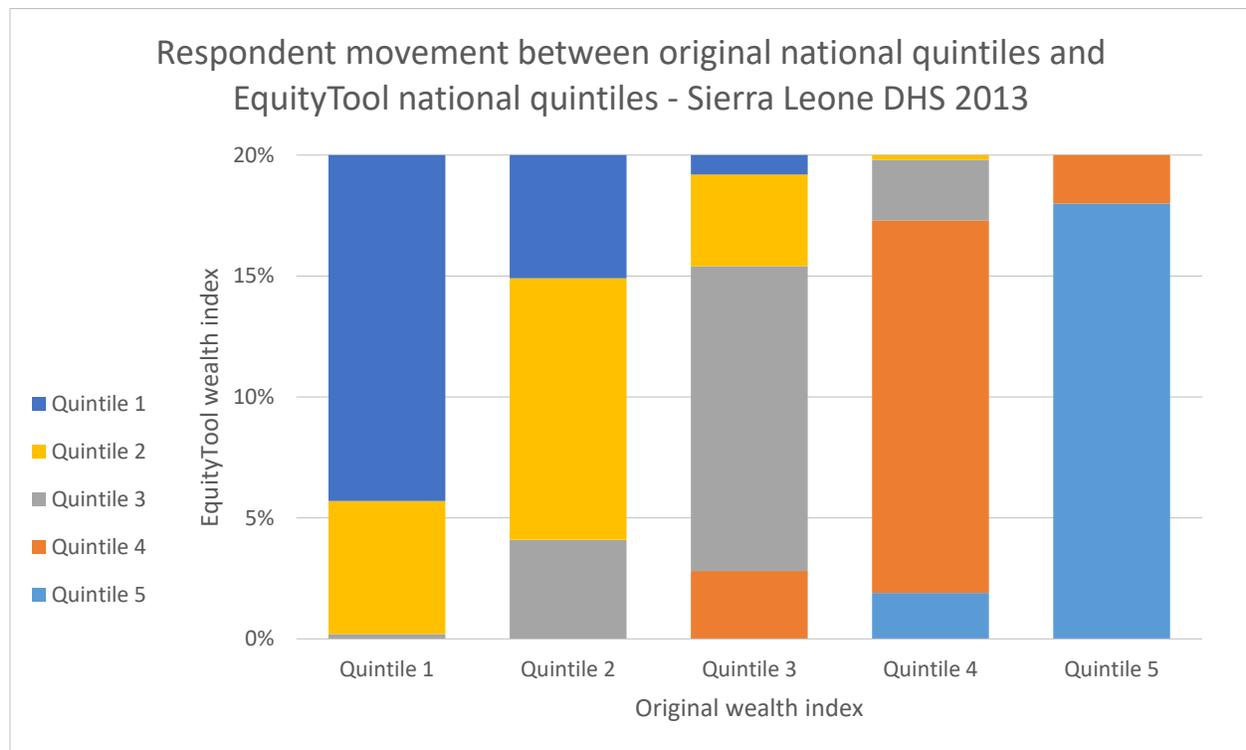
Respondents in the original dataset were divided into three groups for analysis – those in the 1st and 2nd quintiles (poorest 40%), those in the 3rd quintile, and those in the 4th and 5th quintiles (richest 40%). After calculating their wealth using the simplified index, they were again divided into the same three groups for analysis against the original data in the full DHS. Agreement between the original data and our simplified index is presented above.

What does this mean?

When shortening and simplifying the index to make it easier for programs to use to assess equity, it no longer matches the original index with 100% accuracy. At an aggregate level, this error is minimal, and this methodology was deemed acceptable for programmatic use by an expert panel. However, for any given individual, especially those already at a boundary between two quintiles, the quintile the EquityTool assigns them to may differ to their quintile according to the original DHS wealth index.



The graph below illustrates the difference between the EquityTool generated index and the full DHS wealth index. Among all of those people (20% of the population) originally identified as being in the poorest quintile, approximately 71.5% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 27.5% of people are now classified as being in Quintile 2. From a practical standpoint, all of these people are relatively poor. Yet, it is worthwhile to understand that the simplified index of 10 questions produces results that are not identical to using all 34 questions in the original survey.



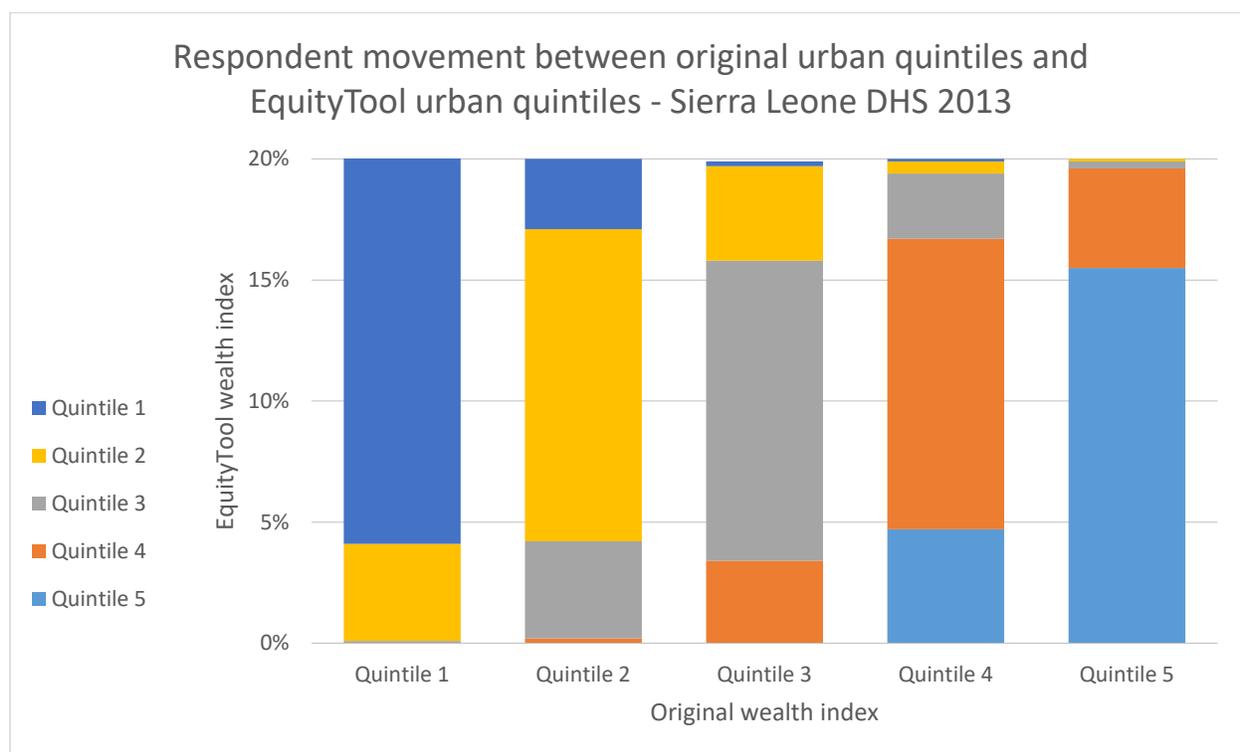
The following table provides the same information on the movement between national quintiles when using the EquityTool versus the original DHS wealth index:

		EquityTool National Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original DHS National Quintiles	Quintile 1	14.30%	5.50%	0.20%	0.00%	0.00%	20%
	Quintile 2	5.10%	10.80%	4.10%	0.00%	0.00%	20%
	Quintile 3	0.80%	3.80%	12.60%	2.80%	0.00%	20%
	Quintile 4	0.00%	0.20%	2.50%	15.40%	1.90%	20%
	Quintile 5	0.00%	0.00%	0.00%	2.00%	18.00%	20%



	Total	20.30%	20.30%	19.50%	20.10%	19.80%	100%
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The following graph provides information on the movement between urban quintiles when using the EquityTool versus the original DHS wealth index:



The following table provides the same information on the movement between urban quintiles when using the EquityTool versus the original DHS wealth index:

		EquityTool Urban Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original DHS Urban Quintiles	Quintile 1	16.00%	4.00%	0.10%	0.00%	0.00%	20%
	Quintile 2	2.90%	12.90%	4.00%	0.20%	0.00%	20%
	Quintile 3	0.20%	3.90%	12.40%	3.40%	0.00%	20%
	Quintile 4	0.10%	0.50%	2.70%	12.00%	4.70%	20%
	Quintile 5	0.00%	0.10%	0.30%	4.10%	15.50%	20%
	Total	19.10%	21.30%	19.60%	19.80%	20.20%	100%

Data interpretation considerations:



1. This tool provides information on relative wealth – ‘ranking’ respondents within the national or urban population. The most recent available data from the WorldBank indicates that 52.3% of people in Sierra Leone live below \$1.90/day¹. This information can be used to put relative wealth into context.
2. People who live in urban areas are more likely to be wealthy. In Sierra Leone, 61.2% of people living in urban areas are in the richest national quintile, compared to only 1.4% of those living in rural areas².
 - a. If your population of interest is predominantly urban, we recommend you look at the urban results to understand how relatively wealthy or poor they are, in comparison to other urban dwellers.
 - b. If the people you interviewed using the EquityTool live in rural areas, or a mix of urban and rural areas, we recommend using the national results to understand how relatively wealthy or poor they are, in comparison to the whole country.
3. Some districts in Sierra Leone are wealthier than others. It is important to understand the country context when interpreting your results.
4. In most cases, your population of interest is not expected to be equally distributed across the five wealth quintiles. For example, if your survey interviewed people exiting a shopping mall, you would probably expect most of them to be relatively wealthy.

Metrics for Management provides technical assistance services to those using the EquityTool, or wanting to collect data on the wealth of their program beneficiaries. Please contact equitytool@m4mgmt.org and we will assist you.

¹ From povertydata.worldbank.org, reporting Poverty headcount ratio at \$1.90/day at 2011 international prices.

² From the Sierra Leone DHS 2013 dataset household recode, available at <http://dhsprogram.com/>

