

## Senegal

**EquityTool: Released December 9, 2015**

**Source data: [Senegal Continuous DHS 2013](#)**

**# of survey questions in original wealth index: 36**

**# of variables in original index: 112**

**# of survey questions in EquityTool: 18**

**# of variables in EquityTool: 26**



### Questions:

	Question	Option 1	Option 2	Option 3	Option 4
Q1	Does your household have...a television?	Yes	No		
Q2	... a refrigerator?	Yes	No		
Q3	... an MMDS/TV5 antenna?	Yes	No		
Q4	... a non-mobile telephone?	Yes	No		
Q5	... electricity?	Yes	No		
Q6	... a CD/DVD player?	Yes	No		
Q7	... an internet connection?	Yes	No		
Q8	... a CANAL television subscription?	Yes	No		
Q9	... a computer?	Yes	No		
Q10	Does any member of your household own...their own vehicle?	Yes	No		
Q11	... cart?	Yes	No		

Q12	Does any member of this household have a bank account or account with another financial institution (mutual savings and credit, savings account...)?	Yes	No		
Q13	What type of fuel does your household primarily use for cooking?	Bottled gas	Wood, Straw	Other	
Q14	What is the main source of drinking water for members of your household?	Piped into dwelling	Unprotected wall	Other	
Q15	What kind of toilet facility do members of your household usually use?	Flushed to piped sewer system	Flush to septic tank	Traditional latrine	Other
Q16	What is the primary material of the floor of your dwelling?	Cement	Ceramic tile	Earth/sand/dung	Other
Q17	What is the primary material of the roof of your dwelling?	Cement	Calamine/Cement fiber	Other	
Q18	What is the primary material used in the construction of the exterior walls of your dwelling?	Cement	Bamboo/Canoe/Palm/Trunks/Dirt	Other	

#### Technical notes:

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](#). The data used to identify important variables comes from the [factor weights released by ICF](#).

#### Level of agreement:

Respondents in the original dataset were divided into 3 groups – those in the 1<sup>st</sup> and 2<sup>nd</sup> quintiles (poorest 40%), those in the 3<sup>rd</sup> quintile, and those in the 4<sup>th</sup> and 5<sup>th</sup> quintiles (richest 40%). After calculating their wealth using the simplified index, they were again divided into 3 groups. Agreement between the original data and our simplified index is presented below.

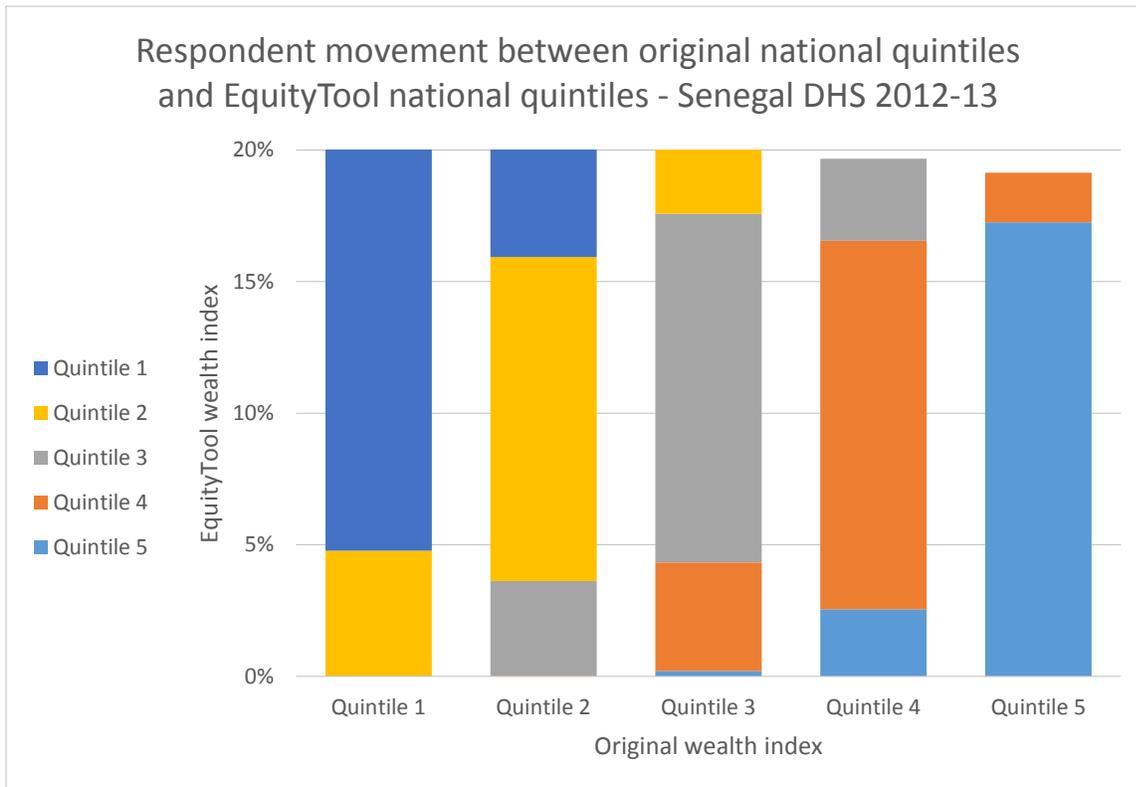
	National Population (n=36529)	Urban only population (n=14691)
% agreement	86.2%	85.3%
Kappa statistic	0.785	0.770



### 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.

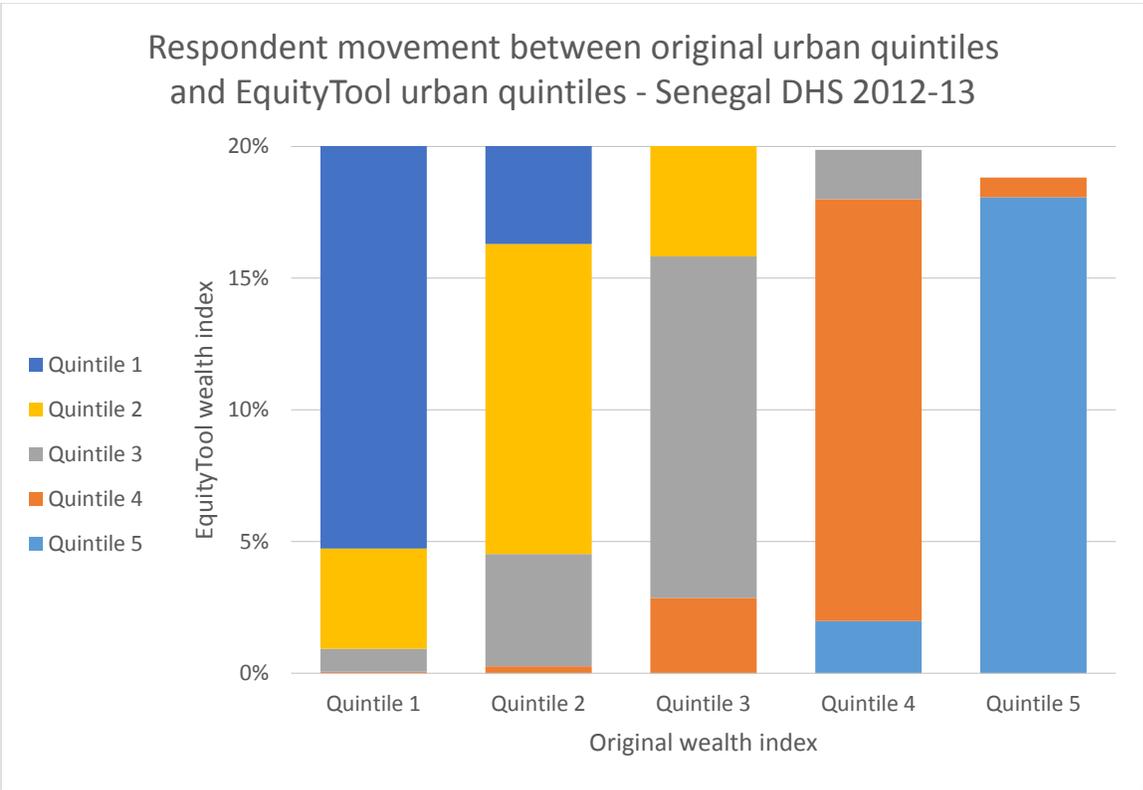
The graph below illustrates the difference between the EquityTool generated index and the full DHS wealth index. Among all of those people (20% of the population) originally identified as being in the poorest quintile, approximately 79% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 24% 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 18 questions produces results that are not identical to using all 36 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					
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Original DHS National Quintiles	Quintile 1	15.8%	4.8%	0.0%	0.0%	0.0%	20%
	Quintile 2	4.5%	12.3%	3.6%	0.0%	0.0%	20%
	Quintile 3	0.0%	2.7%	13.2%	4.1%	0.2%	20%
	Quintile 4	0.0%	0.0%	3.1%	14.0%	2.5%	20%
	Quintile 5	0.0%	0.0%	0.0%	1.9%	17.2%	20%
	Total	20.2%	19.7%	20.0%	20.0%	20.0%	100%

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					
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Original DHS Urban Quintiles	Quintile 1	18.2%	1.9%	0.0%	0.0%	0.0%	20%
	Quintile 2	1.9%	17.5%	0.8%	0.0%	0.0%	20%
	Quintile 3	0.0%	0.5%	16.8%	2.6%	0.0%	20%
	Quintile 4	0.0%	0.0%	2.3%	15.2%	2.6%	20%
	Quintile 5	0.0%	0.0%	0.2%	2.1%	17.3%	20%
	Total	20.1%	19.9%	20.0%	20.0%	20.0%	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 38% of people in Senegal live below \$1.90/day<sup>1</sup>. 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 Senegal, 44.3% of people living in urban areas are in the richest national quintile, compared to only 3.1% of those living in rural areas<sup>2</sup>.
  - 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 departments in Senegal 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](mailto:equitytool@m4mgmt.org) and we will assist you.

<sup>1</sup> From [povertydata.worldbank.org](http://povertydata.worldbank.org), reporting Poverty headcount ratio at \$1.90/day at 2011 international prices.

<sup>2</sup> From the Senegal: Continuous DHS 2012-13 dataset household recode, available at <http://dhsprogram.com/>

