

## Uganda

### EquityTool: Released June 11, 2018

The EquityTool has been updated based upon new source data. The previous version is no longer active but is available upon request.

### Previous version: Released November 1, 2016

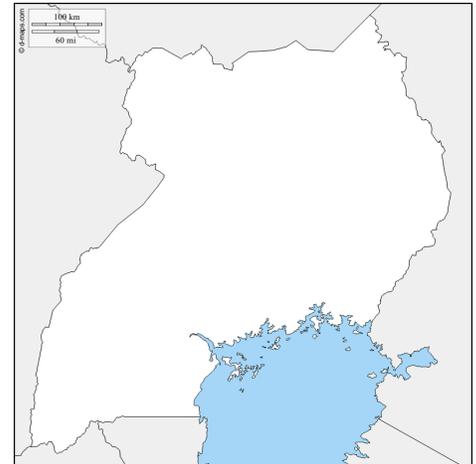
Source data: [Uganda DHS 2016](#)

# of survey questions in original wealth index: 40

# of variables in original index: 132

# of survey questions in EquityTool: 11

# of variables in EquityTool: 13



### Questions:

	Question	Option 1	Option 2	Option 3
Q1	Does your household have... Electricity?	Yes	No	
Q2	... Television?	Yes	No	
Q3	... Cassette / CD / DVD player?	Yes	No	
Q4	... Sofa set?	Yes	No	
Q5	... Cupboard?	Yes	No	
Q6	Does any member of your household own a mobile phone?	Yes	No	
Q7	Does any member of your household have a bank account, mobile money account, or account with an agent?	Yes	No	
Q8	What is the main material of the floor of your household?	Earth / sand	Cement scree	Other
Q9	What is the main material of the exterior walls in your household?	Cement	Other	

Q10	What is the main material of the roof in your household?	Thatch / palm leaf	Iron sheets	Other
Q11	What type of fuel does your household mainly use for cooking?	Wood	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:**

	National Population (n= 19,588)	Urban only population (n=4,469)
% agreement	84.2%	85.5%
Kappa statistic	0.753	0.772

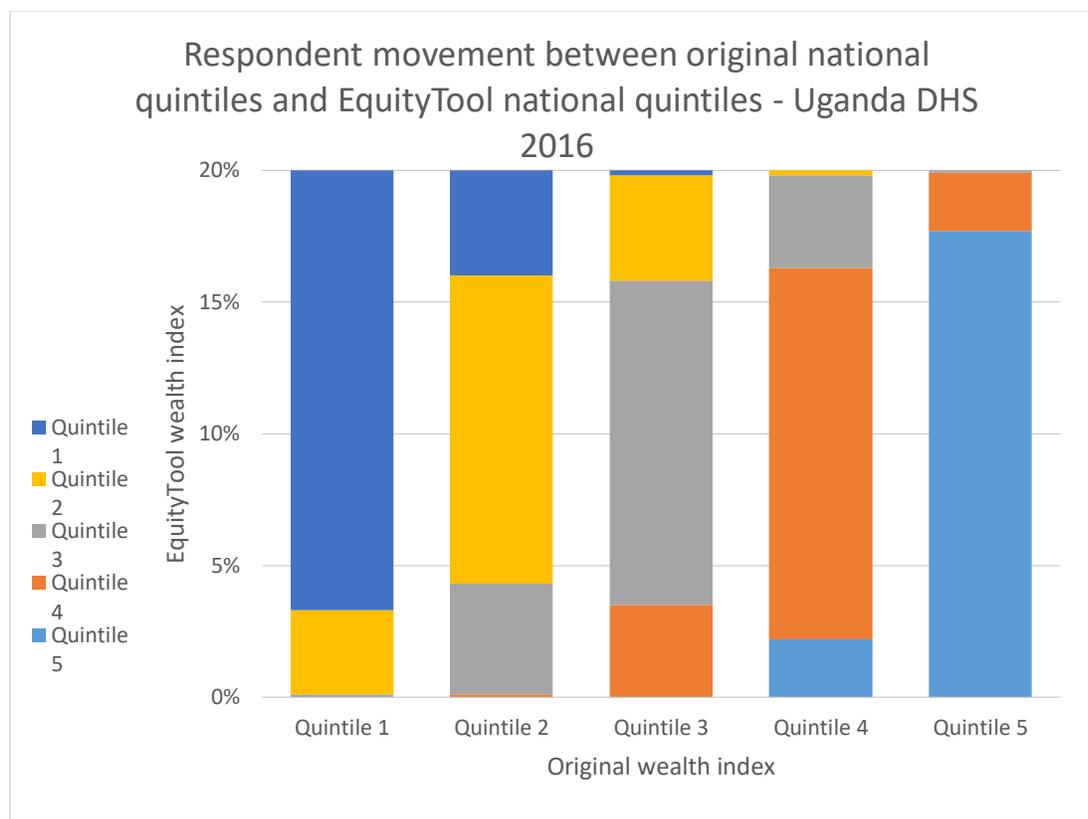
Respondents in the original dataset were divided into three groups for analysis – those in the 1<sup>st</sup> and 2<sup>nd</sup> quintiles (poorest 40%), those in the 3<sup>rd</sup> quintile, and those in the 4<sup>th</sup> and 5<sup>th</sup> quintiles (richest 40%). After calculating their wealth using the simplified index, they were again divided into 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 16.7% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 3.2% 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 11 questions produces results that are not identical to using all 40 questions in the original survey.



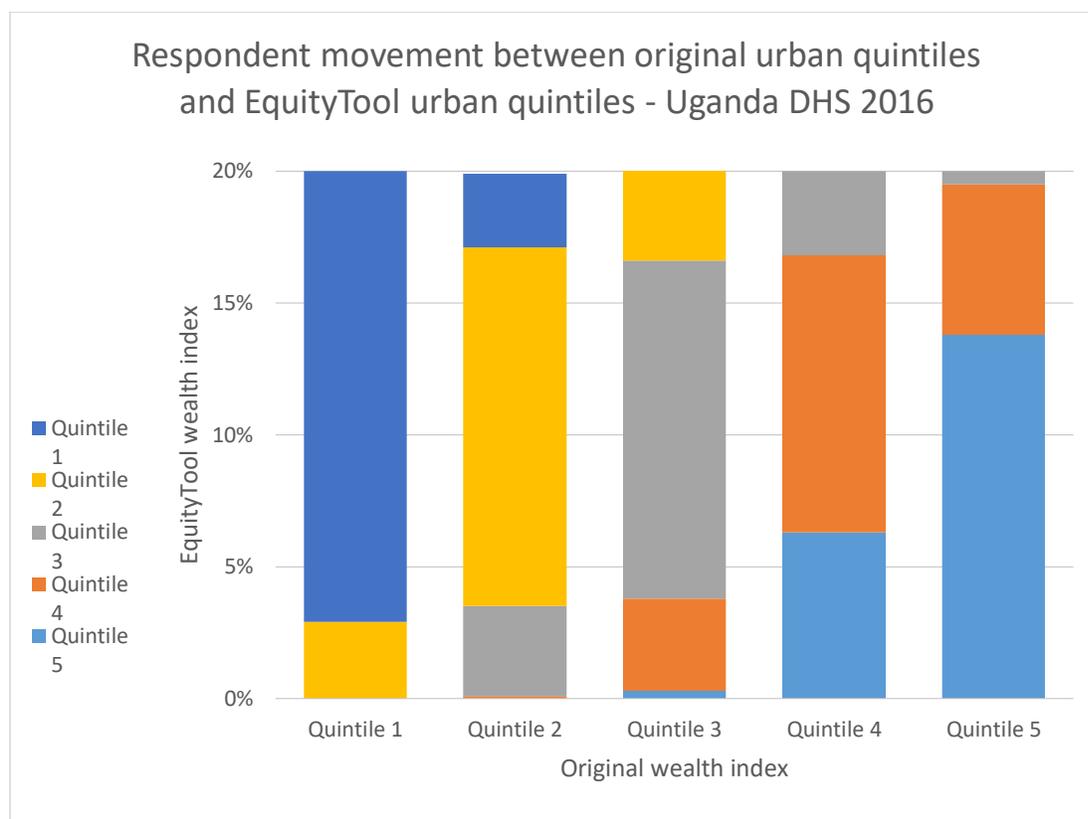


The following table provides the same information on the movement between national quintiles when using the EquityTool versus the original DHS wealth index:

		EquityTool National Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original DHS National Quintiles	Quintile 1	16.7%	3.2%	0.1%	0.0%	0.0%	20%
	Quintile 2	4.0%	11.7%	4.2%	0.1%	0.0%	20%
	Quintile 3	0.2%	4.0%	12.3%	3.5%	0.0%	20%
	Quintile 4	0.0%	0.2%	3.5%	14.1%	2.2%	20%
	Quintile 5	0.0%	0.0%	0.1%	2.2%	17.7%	20%
	Total	20.9%	19.0%	20.1%	19.9%	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					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original DHS Urban Quintiles	Quintile 1	17.1%	2.9%	0.0%	0.0%	0.0%	20%
	Quintile 2	2.8%	13.6%	3.4%	0.1%	0.0%	20%
	Quintile 3	0.0%	3.5%	12.8%	3.5%	0.3%	20%
	Quintile 4	0.0%	0.0%	3.2%	10.5%	6.3%	20%
	Quintile 5	0.0%	0.0%	0.5%	5.7%	13.8%	20%
	Total	20.0%	20.0%	19.9%	19.7%	20.3%	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 35.9% of people in Uganda 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 Uganda, 59% of people living in urban areas are in the richest national quintile, compared to only 9% 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 regions in Uganda 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.

### **Changes from the previous EquityTool**

We released an EquityTool on November 1, 2016 which compared user data to a benchmark of 2014. A new source survey, the Uganda DHS 2016 was recently released, and allows us to benchmark results to a more recent population. This is important, because wealth generally increases over time, and comparing your respondents to an old benchmark population will lead to over-estimating the relatively wealthy in your survey. The new EquityTool was generated using the exact same methodology as the previous version, and in generating the new EquityTool, no attempt was made to account for the fact that a previous version existed. In other words, we did not explicitly try to keep the same questions or response options as the previous tool.

For those who have not previously conducted an EquityTool based study in Uganda, the remainder of this section is not particularly relevant. For those who have used the previous EquityTool, you may be interested to know how the two versions compare.

---

<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 Uganda DHS 2016 dataset household recode, available at <http://dhsprogram.com/>



	Previous	Current
Source Data	MIS 2014	DHS 2016
# of questions in EquityTool	14	11
# of questions in full wealth index	39	40
Kappa statistic (EquityTool vs full wealth Index) for 3 groups	National: 0.757 Urban: 0.772	National: 0.753 Urban: 0.772

### **Practical considerations for users of the previous EquityTool**

Comparing the results of surveys that used the previous EquityTool against those that use the current EquityTool is difficult. It will not always be clear whether any difference is because of actual differences in the wealth level of the respondents or because the EquityTool has changed.

The technical comparison section below, particularly the 3<sup>rd</sup> comparison, illustrates how quintile results compare when using the previous EquityTool and the current one. Generally, there is a partial shift down in quintiles when using a more recent EquityTool. In other words, the current EquityTool will usually put some respondents into a lower quintile than the previous one would.

It is generally best to use the current version of the EquityTool, since it will give you a more accurate quintile estimate. If you are currently collecting data, it is best to continue to use the previous version of the tool. Note that if you have created a survey in the EquityTool web application using the previous EquityTool, that survey will continue to use the previous version of the EquityTool.

If conducting a follow-up survey to a baseline that used the previous EquityTool, and the most important result is change from the baseline, it may be preferable to continue to use the previous EquityTool for comparability. If you need to do this, please contact us at [support@equitytool.org](mailto:support@equitytool.org).

### **Technical comparison between the current and previous EquityTool**

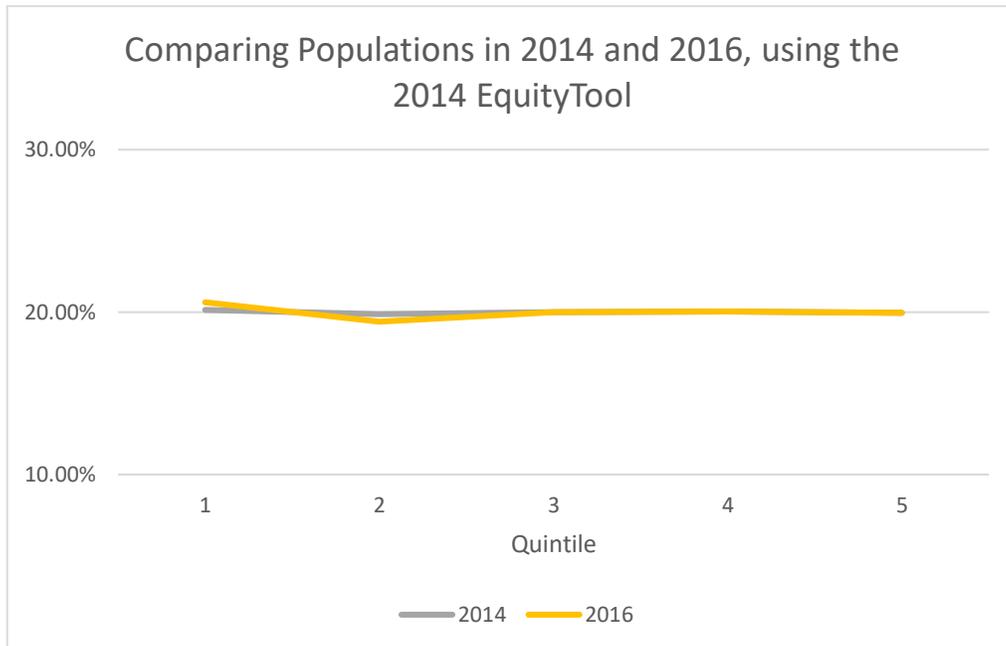
All of the questions and response options for the previous EquityTool are found in the new source data (DHS 2016). This makes comparison between the two versions of the EquityTool, and two different data sources, easier.

The comparison will be assessed in 3 different ways, described below.



1. Using the same 14 questions and response options, and scoring system as in the previous EquityTool, with two different benchmark populations.

This analysis simulates results if the only thing which changes is the benchmark against which respondents are compared. In the 2 years between the two source data studies, the distribution of wealth in the population has not changed very much. In the graph below, the previous EquityTool, derived from the 2014 MIS, is applied to the 2014 MIS data and the newer 2016 DHS data. In 2014, the proportion of households in each of the 5 quintiles is very close to 20%. By 2016, the same questions and factor weights place close to 20% of households into each of the 5 quintiles. There is not a large material difference between the two years. Such a result may be due to the fact that the surveys are close together.



We do not use the previous questions and weights, because over time, the population has become wealthier, and the assets that are most indicative of wealth may change. Thus, comparing your respondents to this skewed distribution becomes challenging.

2. Keeping the same 14 questions and response options as the previous EquityTool, but calculating scores based upon the 2016 data.

As an alternative, one might wish to use the same questions as the previous tool, but update the weighting. This seems reasonable, as the relative contribution of each asset towards overall wealth may have changed over time. Using new weights, but the same variables as the previous tool, we can see how well the resulting quintiles compare to the quintiles based on the full wealth index created by ICF.



The table below presents the agreement between the quintiles created from the full wealth index in the DHS 2016 dataset and the quintiles created by the previous EquityTool, the previous EquityTool variables with updated weighting, and the current EquityTool. As with the agreement statistics above, these figures are for the bottom 2 quintiles, middle quintile and top 2 quintiles

	<b>2014 EquityTool</b>	<b>2014 questions, 2016 scoring</b>	<b>2016 EquityTool</b>
<b>Agreement</b>	82.5%	85.0%	84.2%
<b>Kappa</b>	0.73	0.77	0.75

The current EquityTool meets our minimally acceptable agreement with the full wealth index with a kappa statistic of 0.75 using the fewest number of questions, but using the 14 questions from 2014 and updating the scoring gives slightly more accurate results.

3. Comparing the previous 14 questions and scores, and the new EquityTool (11 questions).

Although all of the questions in the previous EquityTool are found in the current EquityTool, we found that by updating the questions, we were able to predict wealth more efficiently, while retaining sufficient accuracy. Because more people may own the assets predictive of wealth in 2016, we need to change the questions to differentiate people and households more accurately.

The table below shows how the previous and current EquityTool compare, using the same population. This is analogous to a comparison of the two versions of the EquityTool on the population you surveyed using our previous EquityTool.



		Previous EquityTool Quintiles					
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Current EquityTool Quintiles	Quintile 1	15.2%	4.7%	0.9%	0.0%	0.0%	20.9%
	Quintile 2	5.2%	10.1%	3.7%	0.3%	0.0%	19.3%
	Quintile 3	0.2%	4.3%	11.1%	4.1%	0.1%	19.9%
	Quintile 4	0.0%	0.2%	4.2%	13.2%	2.2%	19.9%
	Quintile 5	0.0%	0.0%	0.0%	2.4%	17.6%	19.9%
	Total	20.6%	19.4%	20.0%	20.0%	19.9%	100%

The rightmost column indicates that the current EquityTool does in fact evenly divide the population into 5 groups. The bottom row shows that using the older EquityTool also divides the population into equal quintiles; however, it does so with more questions. The cells within the table indicate how respondents are categorized, if measured using the two different tools. Of those who are categorized as quintile 1 using the current tool, 72% of them would have been considered in the poorest quintile in the previous tool (see the first row). Similarly, for those currently categorized as in the third quintile, 20% would have previously been categorized as being in the fourth quintile, and 20% in the second quintile. It is likely that the distribution of wealth in Uganda has not substantively changed between 2014 and 2016. Thus, using the old version of the EquityTool may give you results very similar to if you were to use the current version. The key difference is a shorter questionnaire.

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 [support@equitytool.org](mailto:support@equitytool.org) and we will assist you.

