Côte d'Ivoire

EquityTool: Update released 15 October 2020

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 The original version is no longer active but is available upon request.

Previous version Released 16 June 2017

Source data: Côte d'Ivoire MICS 2016

# of survey questions in original wealth index: 29
# of variables in original index: 143

# of survey questions in EquityTool: 13
# of variables in EquityTool: 13

Questions:

	Question	Option 1	Option 2
Q1	Does your household have: …electricity?	Yes	No
Q2	…a television?	Yes	No
Q3	… a refrigerator?	Yes	No
Q4	… a fan?	Yes	No
Q5	Does any member of your household own: … a watch?	Yes	No
Q6	… a smartphone?	Yes	No
Q7	… a computer?	Yes	No
Q8	… a VCR/DVD player?	Yes	No

Q9	Does any member of your household have a bank account?	Yes	No
Q10	What is the main material of the floor in your household?	Ceramic Tiles	Other
Q11	In your household, what is the main type of fuel used for cooking?	Liquefied Petroleum Gas (LPG)	Other
Q12	What is the main source of drinking water for the members of your household?	Piped into dwelling	Other
Q13	In your household, is there a specific place for handwashing with water available?	Yes	No

Technical notes:

Recreating the full index

To create the EquityTool, we simplify the original full wealth index that is found in the relevant benchmark dataset, usually using published factor weights. In the case of MICS data, the factor weights are not publicly available, however UNICEF has shared the original syntax files used to create wealth indices with us. We attempted to recreate the original wealth index, following the original syntax files.

In the case of Côte d'Ivoire MICS 2016, there are inconsistencies in the syntax provided. Specifically, standard MICS syntax for wealth index creation drops any variables with a sum less than 2 from the analysis, however several variables with a sum greater than 2 were also removed, as were variables related to use of shared toilet. We were unable to determine why these choices were made. As a result, we chose to recreate the full wealth index, using a process in line with guidance from ICF. We used this recreated wealth index as the basis for the scoring we used in our EquityTool analysis. Details of this index are available upon request.

Simplification:

The standard simplification process was applied to achieve high agreement with the full 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 derived from the reconstruction of the Wealth Index.

Level of agreement:

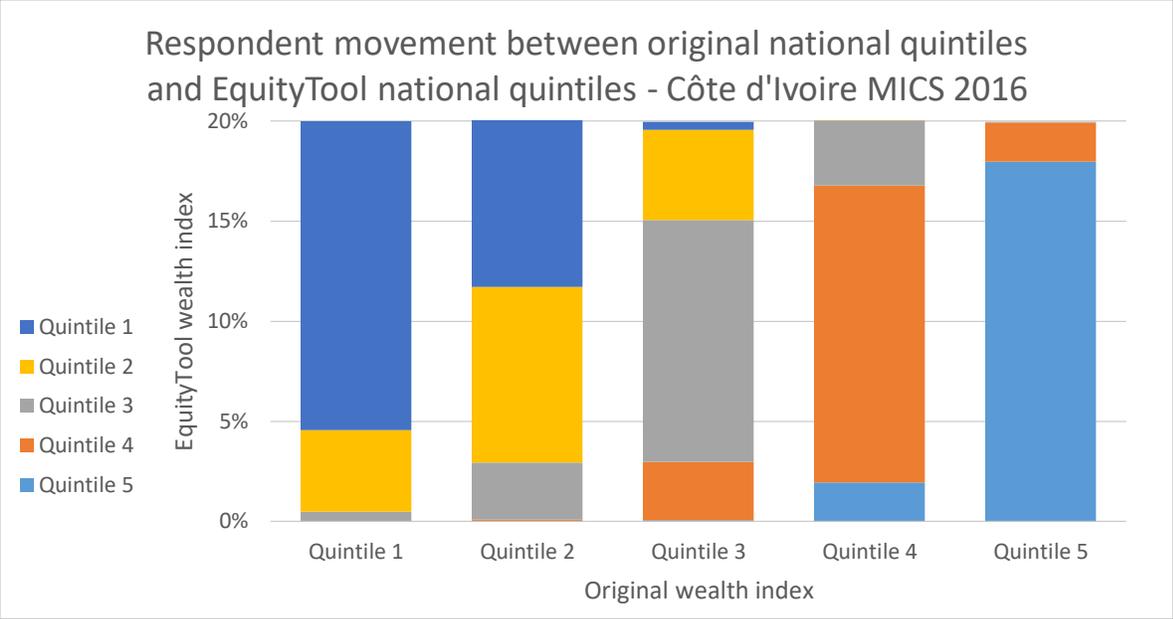|	National Population (n=11,879)	Urban only population (n=4,300)
% agreement	85.4%	84.0%
Kappa statistic	0.771	0.750

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 full index. 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 wealth index.

The graph below illustrates the difference between the EquityTool-generated index and the full wealth index. Among all of those people (20% of the population) originally identified as being in the poorest quintile, approximately 77.1% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 20.4% 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 13 questions produces results that are not identical to using all 29 questions in the original survey.

Respondent movement between original national quintiles and EquityTool national quintiles - Côte d'Ivoire MICS 2016
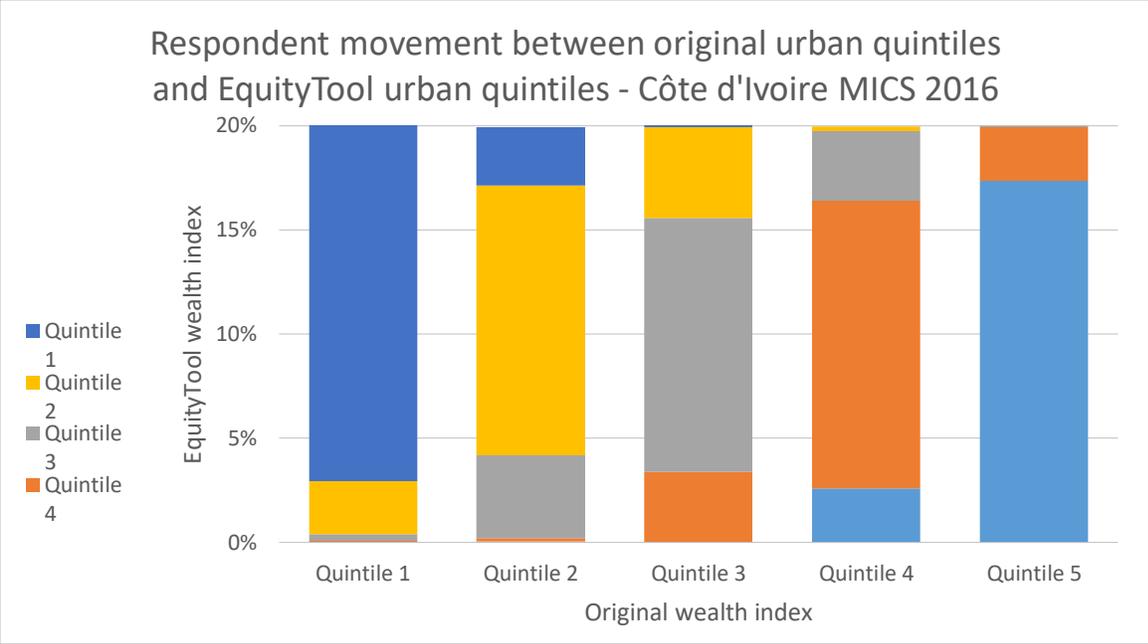
The following table provides the same information on the movement between national quintiles when using the EquityTool versus the original wealth index:

		EquityTool National Quintiles					
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Original National Quintiles	Quintile 1	15.43%	4.09%	0.48%	0.00%	0.00%	20%
	Quintile 2	8.35%	8.77%	2.84%	0.08%	0.00%	20%
	Quintile 3	0.41%	4.49%	12.09%	2.91%	0.04%	20%
	Quintile 4	0.00%	0.02%	3.26%	14.82%	1.95%	20%
	Quintile 5	0.00%	0.00%	0.02%	1.96%	17.97%	20%
	Total	24.2%	17.4%	18.7%	19.8%	20.0%	100%

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

Respondent movement between original urban quintiles and EquityTool urban quintiles - Côte d'Ivoire MICS 2016

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

		EquityTool Urban Quintiles					
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Original Urban Quintiles	Quintile 1	17.12%	2.54%	0.33%	0.07%	0.00%	20%
	Quintile 2	2.80%	12.95%	3.98%	0.17%	0.03%	20%
	Quintile 3	0.11%	4.34%	12.21%	3.37%	0.00%	20%
	Quintile 4	0.00%	0.21%	3.35%	13.81%	2.59%	20%
	Quintile 5	0.00%	0.00%	0.05%	2.59%	17.36%	20%
	Total	20.0%	20.0%	19.9%	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 39.5% of people in Côte d'Ivoire live below $1.90/day[1]. This information can be used to put relative wealth into context.

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

2. People who live in urban areas are more likely to be wealthy. In 2016, 39.7% of people living in urban areas are in the richest national quintile, compared to only 2.3% of those living in rural areas[2].
    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 Côte d'Ivoire 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 16 June 2017, which compared user data to a benchmark population of 2011-12. A new source survey, the MICS 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 Côte d'Ivoire, 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.

	Previous	Current
Source Data	DHS 2011-12	MICS 2016
# of questions in EquityTool	11	13
# of questions in full wealth index	33	29
Kappa statistic (EquityTool vs full wealth Index) for 3 groups	National: 0.773 Urban: 0.757	National: 0.771 Urban: 0.750

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[2] From the MICS 2016 Final Report, available at http://mics.unicef.org/surveys

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 because of different questions used in each tool. 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.

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. This usually corresponds to a general increase in societal wealth over the time interval between surveys, or between benchmark survey and data collection for the EquityTool.

It is generally best to use the current version of the EquityTool, since it will give a more accurate quintile estimates. If you are currently collecting data, it is best to continue to use the previous 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 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.

Technical comparison between the current and previous EquityTool

Not all of the questions and response options for the previous EquityTool are found in the new source data (MICS 2016). Similarly, some of the questions in the old EquityTool are not found in the current EquityTool are found in the old source data (DHS 2011-12). This makes comparison between the two versions of the EquityTool, and two different data sources, more difficult. The table below identifies the questions included in each of the EquityTools and their availability in the surveys to which the respective tools would be compared.

Previous Côte d'Ivoire EquityTool	Available in 2016 MICS Data?	Current Côte d'Ivoire EquityTool	Available in 2011 DHS Data?
In this household, do you have (Referring to functioning hardware and equipment): Electricity?	Yes	Does your household have: …electricity?	Yes
…a television?	Yes	…a television?	Yes
…a refrigerator?	Yes	… a refrigerator?	Yes
…a video recorder or CD/DVD player?	Yes	… a VCR/DVD player?	Yes

…a gas or electric cooker or stove?	No		
…a subscription to Canal?	No		
		Does any member of your household own: … a watch?	Yes
		… a fan?	No
		… a smartphone?	No
		… a computer?	Yes
Does any member of your household have a bank account?	Yes	Does any member of your household have a bank account?	Yes
What is the main source of drinking water for members of your household?	Yes	What is the main source of drinking water for members of your household?	Yes
What type of toilet is usually used by members of your household?	Yes		
What is the main type of fuel used for cooking in this household?	Yes	In your household, what is the main type of fuel used for cooking?	Yes
What is the main material of the floor of your house?	Yes	What is the main material of the floor in your household?	Yes
		In your household, is there a specific place for handwashing with water available?	Yes

The comparison between EquityTool versions is normally assessed in 3 ways, to illustrate how the distribution of asset-based wealth has changed between surveys and how the results obtained from the previous and current EquityTools may differ.

Due to the difficulty in directly comparing the current and previous EquityTools, an alternative analysis was done to illustrate the change in asset-based wealth in Côte d'Ivoire between the 2011-12 DHS and 2016 MICS.

1. The following analysis compares the wealth indices of the DHS 2011-12 and MICS 2016 surveys using the factor weights from the DHS 2011-12 full wealth index.

This analysis simulates results if the only thing which changes is the benchmark population against which respondents are compared. In the 4-5 years between the two source data studies, there does not appear to be much change in asset-based wealth in Côte d'Ivoire.

In the graph below, the wealth indices, derived from the variables that are available in both the 2011-12 DHS and the 2016 MICS, is applied to the 2011-12 DHS data and the newer 2016 MICS data. In both surveys, the proportion of households in each of the 5 quintiles is very close to 20%. The factor weights from the original complete DHS 2011-12 wealth index were used for the comparison.

Comparing Populations in 2011-12 and 2016 using all variables found in both survey datasets
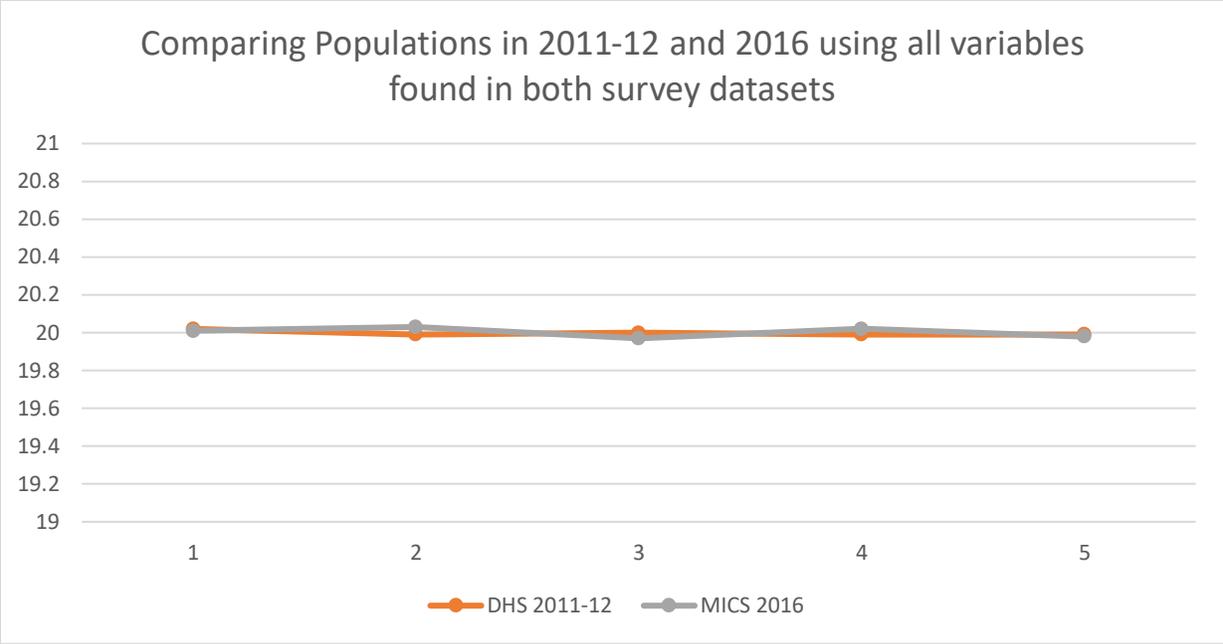
Often, we observe that the asset-based wealth distributions in a country change over time. However, in this case, the change between 2011-12 and 2016 seems to be minimal, suggesting there would not be significant issues associated with using the previous tool, or switching to the new one.

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 and we will assist you.

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