

Mozambique

EquityTool: 20 May 2021

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The original version is no longer active but is available upon request.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 9 December 2015

Source data: [Mozambique MIS 2018](#)

of survey questions in full wealth index: 24

of variables in full index: 111

of survey questions in EquityTool: 10

of variables in EquityTool: 12



Questions:

	Question	Option 1	Option 2	Option 3
Q1	Does your household have... electricity?	Yes	No	
Q2	... a television?	Yes	No	
Q3	... a refrigerator?	Yes	No	
Q4	Does anyone in your household have a bank account?	Yes	No	
Q5	... a mobile telephone?	Yes	No	
Q6	... a watch?	Yes	No	
Q7	What type of fuel does your household mainly use for cooking?	Wood	Charcoal	Other
Q8	What is the main material of the roof in your household?	Grass/thatch/ mud	Other	
Q9	What is the main material of the walls in your household?	Cement	Other	

Q10	What is the main material of the floor in your household?	Packed earth/sand	Cement	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.

In order to improve differentiation between the first and second poorest quintiles, one additional question with 2 response options was added.

Level of agreement:

	National Population (n=6,196)	Urban only population (n=2,522)
% agreement	90.3%	84.0%
Kappa statistic	0.848	0.751

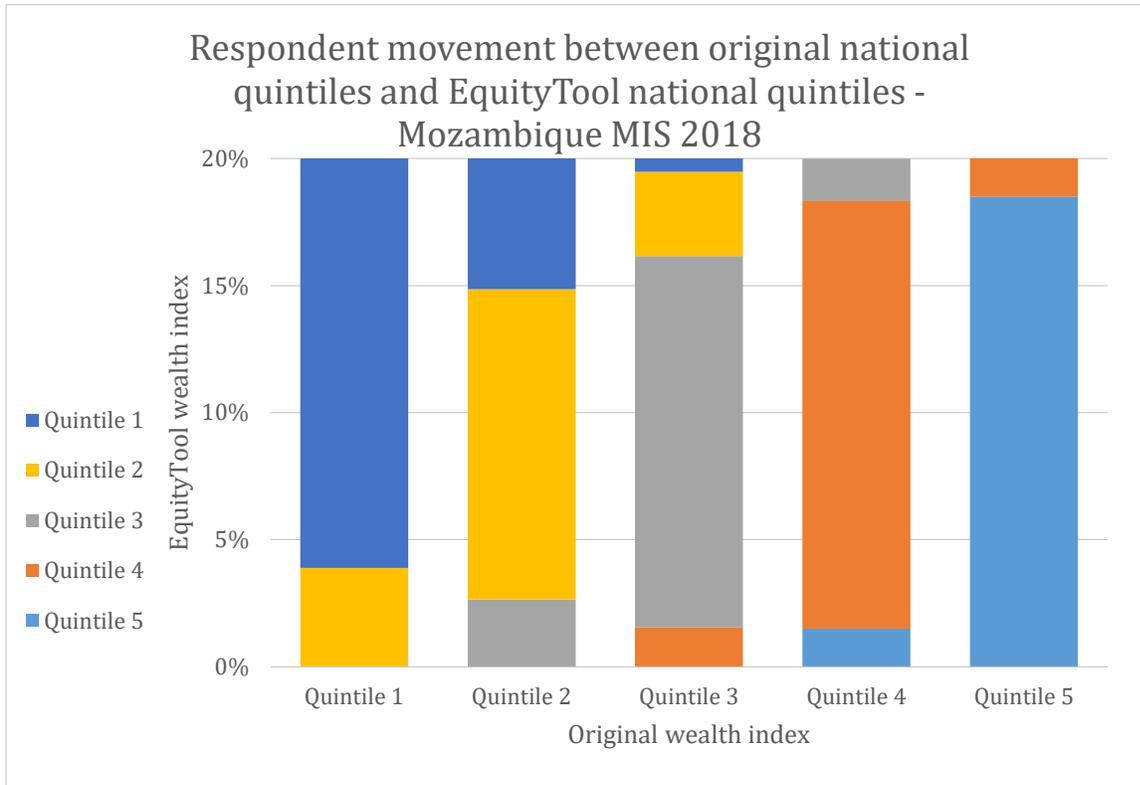
Respondents in the original dataset were divided into three groups for analysis – those in the 1st and 2nd quintiles (poorest 40%), those in the 3rd quintile, and those in the 4th and 5th quintiles (richest 40%). After calculating their wealth using the simplified index, they were again divided into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

The graph below illustrates the difference between the EquityTool generated index and the full MIS wealth index. Among all of those people (20% of the population) originally identified as being in the poorest quintile, approximately 16.10% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 3.88% of people are now classified as being in Quintile 2, and 0.02% in Quintile 3. From a practical standpoint, all of these people are relatively poor. Yet, it is worthwhile to understand that the simplified index of

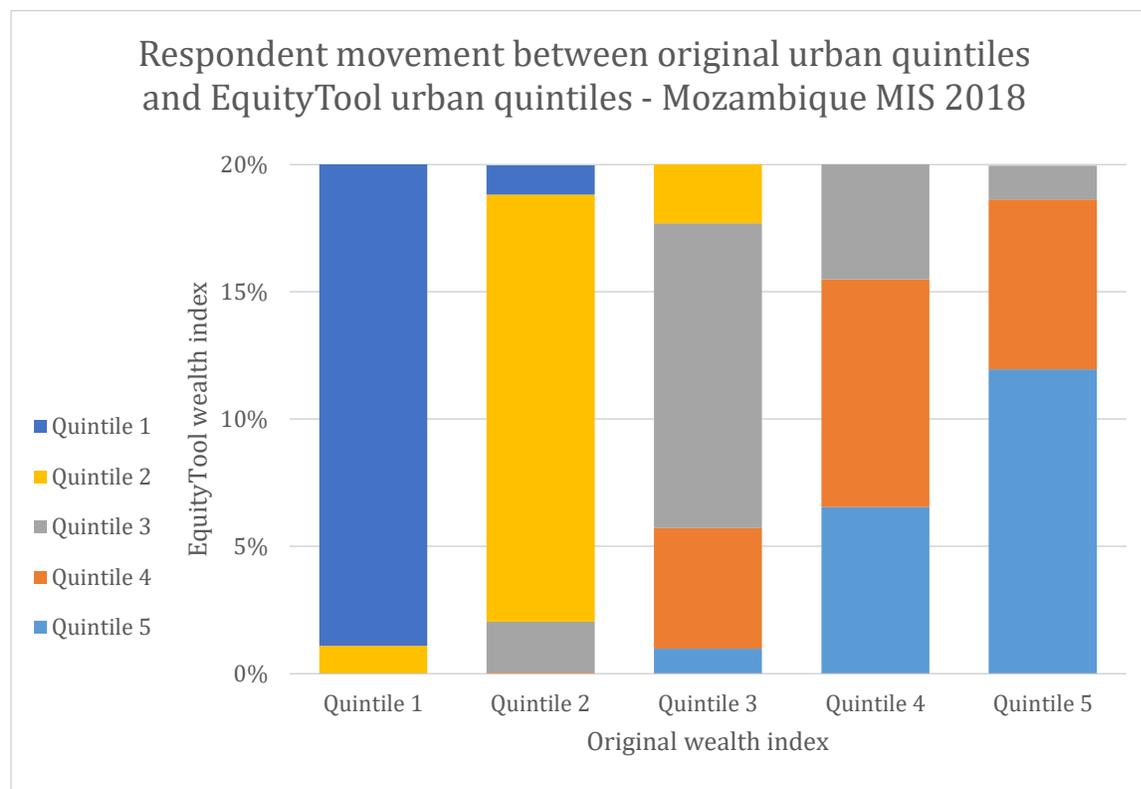
10 questions produces results that are not identical to using all 24 questions in the original survey.



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

		EquityTool National Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original MIS National Quintiles	Quintile 1	16.10%	3.88%	0.02%	0.00%	0.00%	20%
	Quintile 2	5.14%	12.21%	2.65%	0.00%	0.00%	20%
	Quintile 3	0.52%	3.31%	14.62%	1.55%	0.00%	20%
	Quintile 4	0.00%	0.00%	1.67%	16.82%	1.50%	20%
	Quintile 5	0.00%	0.00%	0.00%	1.51%	18.49%	20%
	Total	21.77%	19.40%	18.95%	19.88%	19.99%	100%

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



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

		EquityTool Urban Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original MIS Urban Quintiles	Quintile 1	18.94%	1.09%	0.00%	0.00%	0.00%	20%
	Quintile 2	1.15%	16.77%	2.00%	0.05%	0.00%	20%
	Quintile 3	0.00%	2.35%	11.97%	4.74%	0.97%	20%
	Quintile 4	0.00%	0.00%	4.52%	8.94%	6.55%	20%
	Quintile 5	0.00%	0.00%	1.32%	6.68%	11.96%	20%
	Total	20.10%	20.21%	19.81%	20.41%	19.48%	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 63.7% of people in Mozambique live below \$1.90/day[1]. 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 2018, 54% of people living in urban areas are in the richest national quintile, compared to only 4% 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 provinces in Mozambique 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 9 December 2015 which compared user data to a benchmark of 2011. A new source survey, the MIS 2018 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 Mozambique, 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	MIS 2018
# of questions in EquityTool	10	10
# of questions in full wealth index	32	24
Kappa statistic (EquityTool vs full wealth Index) for 3 groups	National: 0.783 Urban: 0.852	National: 0.848 Urban: 0.751

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 3rd 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 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

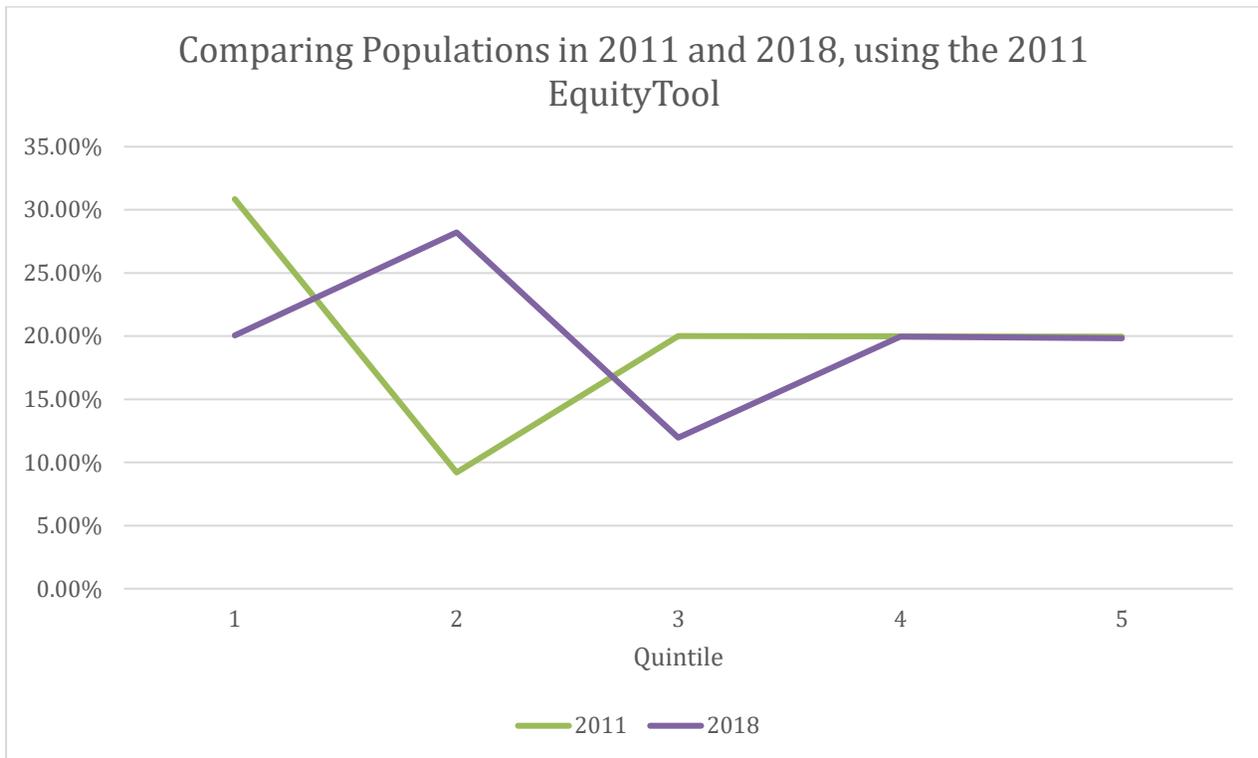
All of the questions and response options for the previous EquityTool are found in the new source data. This makes comparison between the two versions of the EquityTool, and two different data sources, easier.

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

1. Using the same 10 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 7 years between the two source data studies, more people have acquired assets to move from the poorest quintile (quintile 1) to quintile 2, and a small proportion of people are in quintile 3. Quintiles 4 and 5 have remained fairly unchanged. In the graph below, the previous EquityTool, derived from the DHS 2011, is applied to the DHS 2011 data and the newer MIS 2018. In 2011, the proportion of households in each of the 5 quintiles varies for the first two quintiles, with over 30% in quintile 1 and less than 10% in quintile 2. However, for quintiles 3, 4, and 5, the proportion of households in each quintile is very close to 20%. The discrepancy seen is due to the use of a shorter questionnaire than used by the DHS survey originally. However, by 2018, the distribution is skewed towards the wealthy. People become wealthier overall. A smaller proportion of households are in the least wealthy quintile 1,

while a higher proportion are in quintile 2. Quintile 3 also has a smaller proportion of households. Quintiles 4 and 5 remained fairly consistent, with close to 20% in each quintile.



The two EquityTools are quite similar, suggesting that there have not been major changes in wealth in Mozambique between 2011 and 2018. However, the more recent tool is a more effective measure.

2. Keeping the same 10 questions and response options as the previous EquityTool, but calculating scores based upon the 2018 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 DHS/MIS.

The table below presents the agreement between the quintiles created from the full wealth index in the 2018 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.

	2011 EquityTool	2011 questions, 2018 scoring	2018 EquityTool

Agreement	88.4%	88.4%	90.3%
Kappa	0.81	0.81	0.85

The current EquityTool has the best agreement with the full wealth index , though they all exceed our minimum kappa statistic of 0.75. The previous tool, even when the scoring is updated, does achieve a high level of agreement. There is little difference in wealth in Mozambique over the intervening years.

3. Comparing the previous 10 questions and scores, and the new EquityTool (10 questions) Although all of the questions in the previous EquityTool are found in the current EquityTool, we found that 10 questions from 2011 did not predict wealth as accurately as the 10 questions in the newer 2018 EquityTool. Because more people may own the assets predictive of wealth in 2011, we need to add 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	13.93%	7.81%	0.02%	0.00%	0.00%	21.77%
	Quintile 2	4.80%	14.53%	0.08%	0.00%	0.00%	19.40%
	Quintile 3	1.31%	5.79%	10.26%	1.60%	0.00%	18.95%
	Quintile 4	0.01%	0.09%	1.60%	16.06%	2.13%	19.88%
	Quintile 5	0.00%	0.00%	0.00%	2.30%	17.70%	19.99%
	Total	20.05%	28.21%	11.96%	19.95%	19.82%	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 does not divide the population into equal quintiles – it puts more people into quintile 2, and fewer into quintile 3. 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, 13.9% 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, 5.8% would have previously been categorized as being in the second quintile, and 1.6% in the fourth quintile. If you had used the previous EquityTool, you can expect that with the current version, a higher proportion

of your respondents will be grouped in quintile 2, with fewer in quintile 3. The other quintiles should not change dramatically. This is not incorrect, but rather reflects the reality that we are measuring them against a more accurate benchmark.

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.

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

[2] From the Mozambique MIS 2018 dataset household recode, available at <http://dhsprogram.com/>
