

## Papua New Guinea

**EquityTool: Released March 31, 2020**

**Source data:** [Papua New Guinea DHS 2016-2018](#)

**# of survey questions in original wealth index: 24**

**# of variables in original index: 102**

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

**# of variables in EquityTool: 15**



### Questions:

	Question	Option 1	Option 2	Option 3
Q1	Does your household have ... a radio?	Yes	No	
Q2	...a television?	Yes	No	
Q3	...a refrigerator?	Yes	No	
Q4	...a computer?	Yes	No	
Q5	...a mobile phone?	Yes	No	
Q6	Does any member of this household have a bank account?	Yes	No	
Q7	What is the main source of drinking water for members of your household?	Piped into dwelling	Other	
Q8	What is the main source of lighting your household uses?	Electricity	Lantern (Battery operated)	Other
Q9	What type of fuel does your household mainly use for cooking?	Wood	Other	
Q10	What is the main material of the walls of your dwelling?	Bamboo/ Palm	Other	
Q11	What is the main material of the roof of your dwelling?	Metal	Thatch/Palm Leaf	Other

Q12	What is the main material of the floor of your dwelling?	Palm/ Bamboo	Other	
Q13	What kind of toilet facility do members of your household usually use?	Pit latrine without slab/open pit, not shared	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=16,021)	Urban only population (n=3,295)
% agreement	84.6%	90.1%
Kappa statistic	0.7579	0.8447

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.

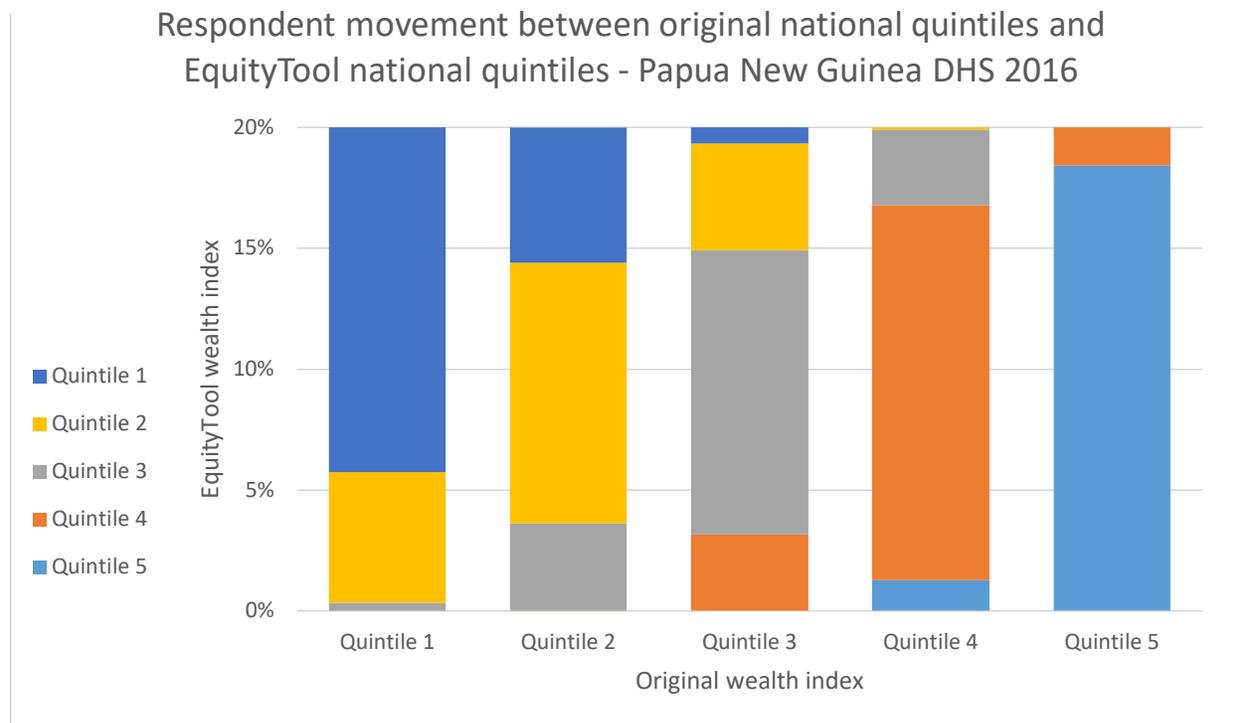
**What does this mean?**

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 71.5% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 28.0% 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 24 questions in the original survey.



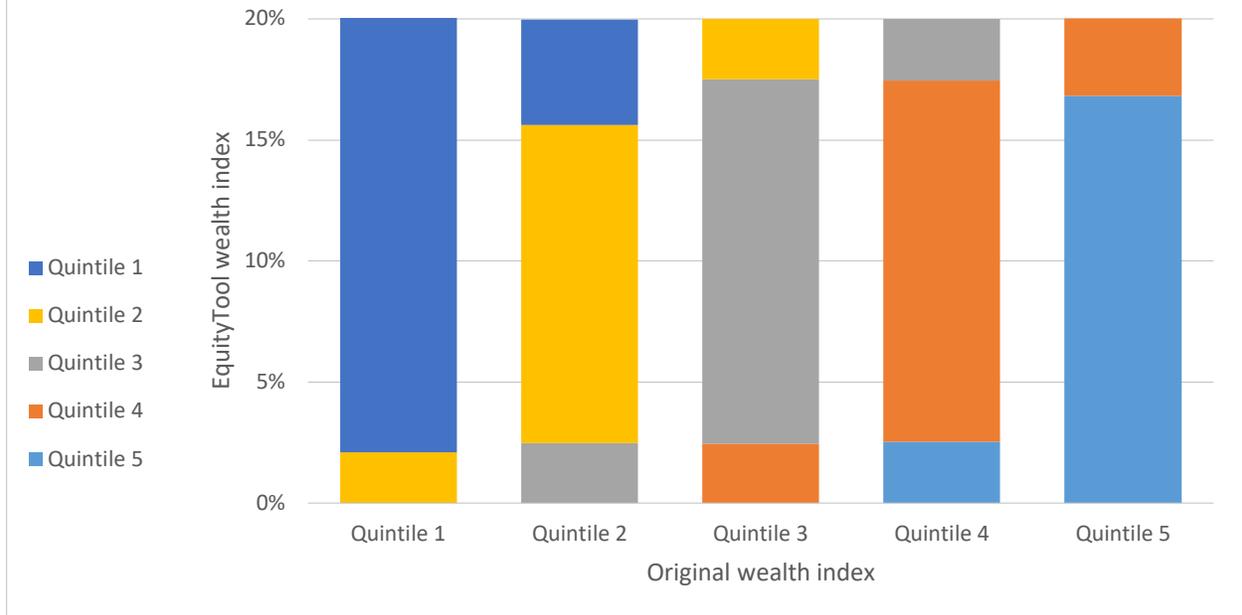
The following table provides the same information on the movement between national quintiles when using the EquityTool versus the original DHS wealth index:

		EquityTool National Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original DHS National Quintiles	Quintile 1	14.3%	5.4%	0.4%	0%	0%	20%
	Quintile 2	5.6%	10.8%	3.6%	0%	0%	20%
	Quintile 3	0.7%	4.4%	11.8%	3.2%	0%	20%
	Quintile 4	0%	0.1%	3.1%	15.5%	1.3%	20%
	Quintile 5	0%	0%	0%	1.6%	18.4%	20%
	Total	20.5%	20.7%	18.8%	20.3%	19.7%	100%

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



### Respondent movement between original urban quintiles and EquityTool urban quintiles - Papua New Guinea DHS 2016



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	18.0%	2.1%	0%	0%	0%	20%
	Quintile 2	4.3%	13.2%	2.5%	0%	0%	20%
	Quintile 3	0%	2.5%	15.1%	2.5%	0%	20%
	Quintile 4	0%	0%	2.5%	15.0%	2.5%	20%
	Quintile 5	0%	0%	0%	3.2%	16.8%	20%
	Total	22.3%	17.7%	20.1%	20.6%	19.3%	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 World Bank



indicates that 38% of people in Papua New Guinea 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 Papua New Guinea, 71% of people living in urban areas are in the richest national quintile, compared to only 14% 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 provinces in Papua New Guinea 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 [support@equitytool.org](mailto:support@equitytool.org) and we will assist you.

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<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 Papua New Guinea 2016-2018 dataset household recode, available at <http://dhsprogram.com/>

