Simple Poverty Scorecard® Tool
Democratic Republic of the Congo

Mark Schreiner

8 February 2018

Voir ce document en Français sur scorocs.com
This document is in English at scorocs.com

Abstract

The Scorocs Simple Poverty Scorecard-brand poverty-assessment tool for the Democratic Republic of the Congo (DRC) uses 10 low-cost indicators from the 2012 1–2–3 Survey to estimate the likelihood that a household has consumption below a given poverty line. Field workers can collect responses in about ten minutes. Accuracy is reported for a range of poverty lines. Pro-poor programs in the DRC can use the scorecard to estimate poverty rates, to track changes in poverty rates over time, and to segment clients for differentiated treatment.

Acknowledgements

Data were collected by the DRC's *Institut National de la Statistique*. Thanks go to Franck M. Adoho, Alain Ilunga, Wim Marivoet, Manu Ndumbi, Björn Nilsson, Nadine Pembele, Calum Scott, Jean Paul Sossou, and Yannick Zokita.

Legal: "Scorocs" is a Trademark (and "Simple Poverty Scorecard" is a Registered Trademark) of Scorocs, L.L.C. for its brand of poverty-assessment tools. Copyright © 2018 Scorocs.

Scorocs™ Simple Poverty Scorecard® Tool

			Name	Identifier
Interview ID:				
Interview date:		Participant:		
Country:	COD	Field agent:		
Scorecard:	001	Service point:		
Sampling wgt.:		Number of household members:		

Indicator	Response	Points Score
1. How many household members are there?	A. Nine or more	0
	B. Eight	4
	C. Seven	5
	D. Six	12
	E. Five	16
	F. Four	18
	G. Three	26
	H. Two	36
	I. One	46
2. Do all household members ages 7 to 16 go to school in the current school year?	A. No	0
	B. Yes	3
	C. No members 7 to 16	6
3. In the past week, did the male head/spouse work at least one hour?	A. No	0
	B. No male head/spouse	2
	C. Yes	3
4. Can the (eldest) female head/spouse write a letter in some language?	A. No	0
	B. No female head/spouse	1
	C. Yes	3
5. What is the main material of the floor of the residence?	A. Packed earth/straw, or other	0
	B. Concrete slab, tile, planks, or wood	6
6. What is the main material of the walls of the residence?	A. Mud bricks, leaves, woven reeds, or other	0
	B. Concrete blocks, planks, or wood	2
	C. Packed-earth blocks	6
	D. Baked or stabilized bricks, or reinforced concrete	8
7. What is the main cooking fuel used by the household?	A. Firewood, or other	0
	B. Charcoal, sawdust, or wood scraps	3
	C. Electricity, kerosene, or LPG	10
8. What is the main source of lighting used by the household?	A. Burning wood, or other	0
	B. Battery-powered light, kerosene lamp (home-made or manufactured), or candles	5
	C. Electricity, generator, or LPG	11
9. Do household members have any beds/mattresses in good working order?	A. No	0
	B. Yes	3
10. If any household member has agriculture land or fields, then does any household member raise any goats, pigs, sheep, cattle, poultry, rabbits, or guinea pigs?	A. No agricultural land	0
	B. Ag. land, but no livestock	2
	C. Ag. land, and livestock	4

Copyright © 2018 Scorocs.
Score:

Back-page Worksheet: Household Members, Ages, and School Attendance

Fill out the scorecard header first. Include the interview's unique identifier (if known), the interview date, and the sampling weight of the participant (if known). Then record the full name and the unique identification number of the participant (who may differ from the respondent), of the participant's field agent (who may differ from you the enumerator), and of the service point that the participant uses.

Then read to the respondent: *Please tell me the first names (or nicknames) and ages of all the members of your household, starting with the head and the (eldest) spouse/conjugal partner of the head (if he/she exists). A* household *is a group of people—regardless of blood or marital relationships—who live in the same residence, who eat meals together, who share all or part of their income for the good of the group, and who acknowledge the authority of one household member (the* head*) when it comes to spending decisions.*

Write down the name/nickname and age of each member, and note the head and the spouse/conjugal partner of the head (if he/she exists). You need to know a member's precise age only if it may be close to 7 or 16. Record the number of household members in the scorecard header next to "Number of household members:", and then circle the answer to the first scorecard indicator.

For each member ages 7 to 16, ask, "Does [NAME] go to school in the current school year?" and mark the response. Then circle the answer to the second indicator. Mark "C. No members ages 7 to 16" if no members are ages 7 to 16. Mark "B. Yes" if there are members ages 7 to 16 and if they all go to school. Mark "A. No" if there are members ages 7 to 16 but at least one does not go to school.

Always keep in mind and apply the detailed instructions in the "Interview Guide".

First name (or nickname)	How old is [NAME]?	Is [NAME] the head or the spouse/conjugal partner of the head?	Does [NAME] go to school in the current school year?		
1. (Head)		Head (male) Head (female)	<7 or >16	No	Yes
2.		(Eldest) spouse of head (female) Spouse of head (male) Other	<7 or >16	No	Yes
3.		Other	<7 or >16	No	Yes
4.		Other	<7 or >16	No	Yes
5.		Other	<7 or >16	No	Yes
6.		Other	<7 or >16	No	Yes
7.		Other	<7 or >16	No	Yes
8.		Other	<7 or >16	No	Yes
9.		Other	<7 or >16	No	Yes
10.		Other	<7 or >16	No	Yes
11.		Other	<7 or >16	No	Yes
12.		Other	<7 or >16	No	Yes
13.		Other	<7 or >16	No	Yes
Number of HH members:	—	—		—	

Look-up table to convert scores to poverty likelihoods: National poverty lines

	Poverty likelihood (%)			
	National (2012 def.)			
Score	**Food**	**100%**	**150%**	**200%**
0–17	59.2	92.3	98.3	99.0
18–21	47.9	85.4	95.9	98.8
22–24	45.2	83.1	94.4	98.7
25–27	35.9	80.1	92.8	98.6
28–29	29.1	78.3	92.2	97.0
30–31	29.1	75.5	92.2	97.0
32–33	27.3	71.7	92.2	97.0
34–35	22.4	66.6	87.8	95.8
36–37	19.7	64.4	86.9	95.7
38–39	15.3	58.4	85.8	95.5
40–41	12.8	53.9	82.6	91.8
42–43	10.7	51.0	80.1	91.7
44–45	7.7	43.2	76.5	91.7
46–47	7.7	37.0	74.2	90.0
48–50	7.7	31.3	65.3	85.6
51–54	3.6	24.2	57.9	79.6
55–58	3.5	21.8	52.5	75.4
59–62	2.5	14.2	41.7	65.1
63–68	1.6	11.5	33.0	53.5
69–100	0.2	2.3	15.9	29.8

Look-up table to convert scores to poverty likelihoods: International 2005 and 2011 PPP lines

	Poverty likelihood (%)							
	Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
Score	**$1.25**	**$2.00**	**$2.50**	**$5.00**	**$1.90**	**$3.20**	**$5.50**	**$21.70**
0–17	97.6	99.3	99.7	100.0	97.5	99.3	100.0	100.0
18–21	95.0	99.2	99.6	100.0	94.8	99.2	100.0	100.0
22–24	93.8	99.2	99.6	100.0	93.3	99.2	99.9	100.0
25–27	91.6	99.2	99.6	100.0	90.9	99.2	99.9	100.0
28–29	90.3	97.8	99.3	100.0	89.4	98.3	99.9	100.0
30–31	90.3	97.8	99.3	100.0	89.4	98.3	99.9	100.0
32–33	88.6	97.8	99.3	100.0	87.9	98.3	99.9	100.0
34–35	85.1	97.8	99.2	99.9	84.3	98.0	99.9	100.0
36–37	83.5	96.7	98.5	99.9	82.2	97.0	99.9	100.0
38–39	82.7	96.7	98.5	99.9	79.1	97.0	99.8	100.0
40–41	75.7	94.4	97.8	99.9	73.3	94.7	99.4	100.0
42–43	74.2	93.8	96.7	99.9	72.4	93.9	99.4	100.0
44–45	67.4	93.8	96.7	99.9	64.4	93.9	99.2	100.0
46–47	64.0	90.9	96.7	99.9	61.4	91.7	99.2	100.0
48–50	54.7	87.2	94.1	99.8	52.1	88.0	99.1	100.0
51–54	46.4	82.0	92.1	99.6	44.6	83.5	98.3	100.0
55–58	40.0	76.8	87.5	98.6	39.1	77.9	96.4	100.0
59–62	28.0	62.8	75.9	98.3	26.1	63.5	94.7	100.0
63–68	17.7	52.1	67.3	94.7	16.3	53.4	86.3	100.0
69–100	7.4	25.9	40.7	86.7	6.4	26.6	65.3	99.5

Look-up table to convert scores to poverty likelihoods: Relative and percentile-based poverty lines

	Poverty likelihood (%)					
	Poorest 1/2	Percentile-based lines (2012 def.)				
Score	< 100% Natl.	20th	40th	50th	60th	80th
0–17	66.4	50.5	77.1	84.1	91.0	97.6
18–21	55.4	37.2	66.6	75.3	83.1	95.1
22–24	53.6	32.0	64.7	74.1	80.6	93.9
25–27	44.7	25.5	53.7	67.2	76.1	91.7
28–29	34.6	22.4	45.1	62.0	72.9	90.4
30–31	34.6	21.5	45.1	60.3	70.1	90.4
32–33	34.6	18.3	43.3	57.8	67.7	89.2
34–35	28.9	14.8	35.6	49.0	62.8	85.4
36–37	23.7	13.0	32.9	46.7	59.6	83.6
38–39	20.0	10.6	29.3	39.5	53.7	83.0
40–41	16.6	8.0	24.1	33.6	49.1	76.0
42–43	14.9	6.6	21.3	30.2	45.9	74.4
44–45	10.0	4.5	18.8	27.9	37.3	67.9
46–47	9.3	4.5	13.6	20.5	31.8	64.4
48–50	9.0	4.5	12.7	17.7	27.2	55.7
51–54	4.5	1.8	6.2	10.9	18.9	46.9
55–58	3.7	1.2	5.6	9.1	16.3	40.3
59–62	2.6	0.6	3.9	6.6	9.3	28.3
63–68	0.9	0.6	1.6	3.2	6.4	18.2
69–100	0.0	0.0	0.0	0.2	1.2	7.5

Scorocs™ Simple Poverty Scorecard® Tool
Democratic Republic of the Congo

1. Introduction

Pro-poor programs in the DRC can use the Scorocs Simple Poverty Scorecard poverty-assessment tool as a low-cost, transparent way to estimate the likelihood that a household has consumption below a given poverty line, to estimate a population's poverty rate at a point in time, to estimate the annual change in a population's poverty rate, and to segment participants for differentiated treatment.

The direct approach to poverty assessment via consumption surveys is difficult and costly. A case in point is the DRC's 2012 1–2–3 Survey (*Enquête 1–2–3*, E123) by the *Institut National de la Statistique* (INS). Its various questionnaires run a total of about 100 pages and cover about 900 questions, many of which have many follow-up questions and/or are asked multiple times (for example, for each household member, crop, or field). Enumerators visited each surveyed household at least eight times, and household members who earned income or who spent money kept a 15-day dairy of their spending and of their consumption of their own production.

In comparison, the indirect approach of the scorecard is quick and low-cost. It uses 10 verifiable indicators drawn from the 2012 E123 (such as "What is the main material of the floor of the residence?" and "Do household members have any

beds/mattresses in good working order?") to get a score that is correlated with poverty status as measured by the exhaustive E123 survey.

The scorecard differs from "proxy-means tests" (Coady, Grosh, and Hoddinott, 2004) in that it is transparent, it is freely available,[1] and it is tailored to the capabilities and purposes not of national governments but rather of local pro-poor organizations. The feasible poverty-assessment options for such organizations are typically blunt (such as rules based on land ownership or housing quality) or subjective and relative (such as participatory wealth ranking facilitated by skilled field workers). Poverty estimates from these approaches may be costly, their accuracy is unknown, and they are not comparable across places, organizations, nor time.

The scorecard can be used to estimate the share of a program's participants who are below a given poverty line (for example, the DRC's national line). USAID microenterprise partners in the DRC can use the scorecard with the $1.90/day 2011 PPP line to report how many of their participants are "very poor".[2] The scorecard can also be used to estimate the annual change in poverty rates. For all these applications, the scorecard is a low-cost, consumption-based, objective tool. While consumption surveys are costly even for governments, some pro-poor organizations may be able to

[1] The Scorocs Simple Poverty Scorecard tool for the DRC is not, however, in the public domain. Copyright is held by Scorocs, L.L.C.

[2] USAID defines a household as *very poor* if its daily per-capita consumption is less than the highest of the $1.90/day 2011 PPP line (CDF1,140, Table 1) or the line that marks the poorest half of people below 100% of the national line (CDF521).

implement a low-cost scorecard to help with monitoring poverty and (if desired) segmenting clients for differentiated treatment.

The statistical approach here aims to be understood by non-specialists. After all, if program managers are to adopt the scorecard on their own and apply it to inform their decisions, then they must first trust that it works. Transparency and straightforwardness build trust. Getting "buy-in" matters; proxy-means tests and regressions on the "determinants of poverty" have been around for decades, but they are rarely used to inform decisions by pro-poor organizations. This is not because these tools do not work, but because they are often presented (when they are presented at all) as tables of regression coefficients incomprehensible to non-specialists (with cryptic indicator names such as "`LGHHSZ_2`" and with points with negative values and many decimal places). Thanks to the predictive-modeling phenomenon known as the "flat maximum", straightforward, transparent approaches are usually about as accurate as complex, opaque ones (Schreiner, 2012a; Caire and Schreiner, 2012).

Beyond its low cost and transparency, the technical approach of the scorecard is innovative in how it associates scores with poverty likelihoods, in the extent of its accuracy tests, and in how it derives formulas for standard errors. Although the accuracy tests are straightforward and commonplace in statistical practice and in the for-profit field of credit-risk scorecards, they have rarely been applied to poverty-assessment tools.

The scorecard is based on data from the 2012 E123 from the DRC's INS. Indicators are selected to be:

- Inexpensive to collect, easy to answer quickly, and straightforward to verify
- Strongly correlated with poverty
- Liable to change over time as poverty status changes
- Applicable in all regions of the DRC

All points in the scorecard are non-negative integers, and total scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line). Non-specialists can collect data and tally scores on paper in the field in about ten minutes.

The scorecard can be used to estimate three basic quantities. First, it can estimate a particular household's *poverty likelihood*, that is, the probability that the household has per-capita or per-adult-equivalent consumption below a given poverty line.

Second, the scorecard can estimate the poverty rate of a population of households at a point in time. This estimate is the average of estimated poverty likelihoods among a representative sample of households from the population.

Third, the scorecard can estimate the annual change in a poverty rate. With two independent samples of households from the same population, this is the difference in the average estimated poverty likelihood in the baseline sample versus the average estimated likelihood in the follow-up sample, divided by the difference (in years) between the average interview date in the baseline sample and the average interview date in the follow-up sample.

With one sample in which each household is scored twice, the estimate of the annual change in a poverty rate is the sum of the changes in each household's estimated poverty likelihood from baseline to follow-up, divided by the sum of years between each household's pair of interviews (Schreiner, 2014a).

The scorecard can also be used to segment participants for differentiated treatment. To help managers choose appropriate targeting cut-offs for their purposes, several measures of targeting accuracy are reported for a range of possible cut-offs.

This paper presents a single scorecard whose indicators and points are derived with the DRC's national poverty line and data from the 2012 E123. Scores from this one scorecard are calibrated with this same data to poverty likelihoods for 18 poverty lines.

The scorecard is constructed using data from about three-fifths of the households in the 2012 E123. Data from that same three-fifths of households is also used to calibrate scores to poverty likelihoods for the 18 poverty lines. Data from the other two-fifths of households is used to validate the scorecard's accuracy for estimating households' poverty likelihoods, for estimating populations' poverty rates at a point in time, and for segmenting participants.

Given their assumptions, all three scorecard-based estimators (the poverty likelihood of a household, the poverty rate of a population at a point in time, and the annual change in a population's poverty rate) are *unbiased*. That is, their average matches the true value in repeated samples when constructed from (and applied to) a

single, unchanging population in which the relationship between scorecard indicators and poverty is unchanging. Like all predictive models, the scorecard is constructed from a single sample and so makes errors when applied (as in this paper) to a validation sample. Furthermore, it makes errors to some unknown extent when applied (in practice) to a different population or when applied after 2012 (because the relationships between indicators and poverty change over time).[3]

Thus, while the indirect-scorecard approach is less costly than the direct-survey approach, it makes errors when applied in practice. (Observed values from the direct-survey approach are taken as correct, ignoring sampling variation.) There are errors because the scorecard necessarily assumes that future relationships between indicators and poverty in all populations will be the same as in the construction data. Of course, this assumption—inevitable in predictive modeling—holds only partly.

The error in the scorecard's estimated poverty rate at a point in time (that is, the average of differences between estimated and observed values across 1,000 bootstrap samples of $n = 16{,}384$ from the validation sample) for 100% of the national poverty line is +3.1 percentage points. The average across all 18 poverty lines of the absolute values of the average error is about 2.3 percentage points, and the maximum of the absolute values of the average error is 4.8 percentage points. These estimation errors are due to sampling variation, not bias; the average difference would be zero if the whole 2012

[3] Important examples include nationally representative samples at a later point in time and sub-national populations that are not nationally representative (Schreiner, forthcoming; Diamond *et al.*, 2016; Tarozzi and Deaton, 2009).

E123 were to be repeatedly re-fielded and re-divided into sub-samples before repeating the entire process of constructing and validating the resulting scorecards.

With $n = 16{,}384$, the 90-percent confidence intervals are ± 0.7 percentage points or smaller. For $n = 1{,}024$, the 90-percent intervals are ± 3.1 percentage points or smaller.

Section 2 below documents data and poverty lines. Sections 3 and 4 describe scorecard construction and offer guidelines for implementation. Sections 5 and 6 tell how to estimate households' poverty likelihoods and populations' poverty rates at a point in time. Section 7 discusses estimating the annual change in a population's poverty rate. Section 8 covers targeting. The last section is a summary.

The "Interview Guide" (found after the References) tells how to ask questions—and how to interpret responses—so as to mimic practice in the DRC's 2012 E123 as closely as possible. The "Interview Guide" (and the "Back-page Worksheet") are integral parts of the Scorocs Simple Poverty Scorecard tool for the DRC.

2. Data and poverty lines

This section presents the data used to construct and validate the scorecard. It also documents the DRC's definition of *poverty* as well as the 18 poverty lines to which scores are calibrated.

2.1 Data

Indicators and points for the scorecard are selected (*constructed*) based on data from a random three-fifths of the 21,149 households in the 2012 E123, the DRC's most-recent national household consumption survey.

The data from the three-fifths of observations from the 2012 E123 that is used to construct the scorecard is also used to associate (*calibrate*) scores to poverty likelihoods for all poverty lines.

Data from the other two-fifths of households from the 2012 E123 is used to test (*validate*) scorecard accuracy for point-in-time estimates of poverty rates *out-of-sample*, that is, with data that is not used in construction/calibration. It is also used to test out-of-sample targeting accuracy.

The E123 was fielded from September 2012 to March 2013.[4] Consumption is in units of CDF per person or per adult equivalent per day in prices in Kinshasa on average during field work.

2.2 Poverty rates at the household, person, and participant level

A *poverty rate* is the share of units in households in which total household consumption (divided by the number of household members or the number of adult equivalents is below a given poverty line. The unit of analysis is either the household itself or a person in the household. By assumption, each member of a given household has the same poverty status (or estimated poverty likelihood) as the other members in that household.

To illustrate, suppose that a pro-poor program serves two households. The first household is poor (its per-capita or per-adult-equivalent consumption is less than a given poverty line), and it has three members, one of whom is a program participant. The second household is non-poor and has four members, two of whom are program participants.

Poverty rates are in terms of either households or people. If the program defines its *participants* as households, then the household level is relevant. The estimated

[4] About 9 percent of interviews were in September 2012, 63 percent in October, 20 percent in November, 0 percent in December and in January 2013, 5 percent in February, and 3 percent in March. Thus, the E123 is said to be *2012*, not *2012/13*.

household-level poverty rate is the weighted[5] average of poverty statuses (or estimated poverty likelihoods) across households with participants. This is $\frac{1 \cdot 1 + 1 \cdot 0}{1 + 1} = \frac{1}{2} = 0.5 = 50$ percent. In the "$1 \cdot 1$" term in the numerator, the first "1" is the first household's weight, and the second "1" represents the first household's poverty status (poor) or its estimated poverty likelihood. In the "$1 \cdot 0$" term in the numerator, the "1" is the second household's weight, and the "0" represents the second household's poverty status (non-poor) or its estimated poverty likelihood. The "$1 + 1$" in the denominator is the sum of the weights of the two households. Household-level weights are used because the unit of analysis is the household.

Alternatively, a person-level rate is relevant if a program defines all people in the households that benefit from its services as *participants*. In the example here, the person-level rate is the household-size-weighted[6] average of poverty statuses (or estimated poverty likelihoods) for households with participants, that is, $\frac{3 \cdot 1 + 4 \cdot 0}{3 + 4} = \frac{3}{7} = 0.43 = 43$ percent. In the "$3 \cdot 1$" term in the numerator, the "3" is the first household's weight because it has three members, and the "1" represents its poverty status (poor) or its estimated poverty likelihood. In the "$4 \cdot 0$" term in the numerator, the "4" is the second household's weight because it has four members, and

[5] The examples here assume simple random sampling at the household level. This means that each household has the same selection probability and thus the same sampling weight, taken here to be one (1).

[6] Given simple random sampling at the household level, a household's person-level weight is the number of people in that household.

the zero represents its poverty status (non-poor) or its estimated poverty likelihood. The "$3 + 4$" in the denominator is the sum of the weights of the two households. A household's weight is its number of members because the unit of analysis is the household member.

As a final example, a pro-poor program might count as *participants* only those household members who directly participate in the program. For the example here, this means that some—but not all—household members are counted. The person-level rate is now the participant-weighted average[7] of the poverty statuses (or estimated poverty likelihoods) of households with participants, that is, $\frac{1 \cdot 1 + 2 \cdot 0}{1 + 2} = \frac{1}{3} = 0.33 = 33$ percent. The first "1" in the "$1 \cdot 1$" in the numerator is the first household's weight because it has one participant, and the second "1" represents its poverty status (poor) or its estimated poverty likelihood. In the "$2 \cdot 0$" term in the numerator, the "2" is the second household's weight because it has two participants, and the zero represents its poverty status (non-poor) or its estimated poverty likelihood. The "$1 + 2$" in the denominator is the sum of the weights of the two households. Each household's weight is its number of participants because the unit of analysis is the participant.[8]

To sum up, estimated poverty rates are weighted averages of households' poverty statuses (or estimated poverty likelihoods), where—assuming simple random sampling

[7] Given simple random sampling at the household level, a household's participant-level weight is the number of participants in that household.

[8] If all households with participants have (or are assumed to have) one participant each, then the participant-level poverty rate is the same as the household-level rate.

at the household level—the weights are the number of relevant units in the household. When reporting, organizations should make explicit the unit of analysis—whether households, household members, or participants—and explain why that unit is relevant.

Table 1 reports poverty lines and poverty rates for households and people in the 2012 E123 for the DRC as a whole and for each its (pre-2015) 11 regions by urban/rural/all.

Household-level poverty rates are reported because—as shown above—household-level poverty likelihoods can be straightforwardly converted into poverty rates for other units of analysis and because sampling is almost always done at the level of households. This is also why the scorecard is constructed, calibrated, and validated with household weights. Person-level poverty rates are also included in Table 1 because these are the rates reported by the government of the DRC. Furthermore, popular discussions and policy discourse usually proceed in terms of person-level rates, and the goal of pro-poor programs is to help people (not households) to improve their well-being.

2.3 Definition of *poverty*, and poverty lines

A household's *poverty status* as poor or non-poor depends on whether its per-capita or per-adult-equivalent consumption is below a given poverty line. Thus, a definition of *poverty* is a poverty line together with a measure of consumption.

INS (2014, pp. 98–100) describes the DRC's measure of *consumption* as well as the method used to derive the national poverty line.

Because pro-poor programs in the DRC may want to use different or various poverty lines, this paper calibrates scores from its single scorecard to poverty likelihoods for 18 lines:

- Food
- 100% of national
- 150% of national
- 200% of national
- $1.25/day 2005 PPP
- $2.00/day 2005 PPP
- $2.50/day 2005 PPP
- $5.00/day 2005 PPP
- $1.90/day 2011 PPP
- $3.20/day 2011 PPP
- $5.50/day 2011 PPP
- $21.70/day 2011 PPP
- Line marking the poorest half of people below 100% of the national line
- First-quintile (20^{th}-percentile) line
- Second-quintile (40^{th}-percentile) line
- Median (50^{th}-percentile) line
- Third-quintile (60^{th}-percentile) line
- Fourth-quintile (80^{th}-percentile) line

2.3.1 National poverty line

The DRC's national poverty line (usually called here "100% of the national line") is a minimum standard for food consumption, plus a minimum standard for non-food consumption.

The DRC's food standard is the cost of 2,300 Calories, found as 2,300 multiplied by the average per-adult-equivalent food expenditure for households in the 2012 E123, and divided by the average per-adult-equivalent Calories consumed in the 2012 E123. Adjusting for price differences across Kinshasa, other urban, and rural areas, the food poverty line on average in DRC as a whole in prices in Kinshasa during the E123 fieldwork is CDF638 per adult equivalent per day, giving a household-level poverty rate of 20.2 percent and a person-level poverty rate of 27.0 percent (Table 1).

100% of the national poverty line is the food line, plus a minimum standard of non-food consumption. The non-food standard is the average per-adult-equivalent non-food consumption in the 2012 E123 among households whose total (food-plus-non-food) per-adult-equivalent consumption is within ±15 percent of the DRC's minimum food standard. The national (food-plus-non-food) line in 2012 is then the sum of the food and non-food standards, adjusted for price differences across the three areas. On average in the DRC as a whole in prices in Kinshasa during the E123 fieldwork, 100% of the national (food-plus-non-food) poverty line is CDF1,157 per adult equivalent per day,

giving a household-level poverty rate of 53.3 percent and a person-level poverty rate of 64.0 percent (Table 1).[9]

150% and 200% of the national line are multiples of 100% of the national line.

2.3.2 2005 and 2011 PPP poverty lines

International 2005 and 2011 PPP lines are derived from:

- PPP exchange rates for the DRC for "individual consumption expenditure by households":
  - 2005:[10] CDF316.232 per $1.00
  - 2011:[11] CDF537.732 per $1.00
- Consumer Price Index (CPI):[12]
  - Calendar-year 2005 average: 126.896
  - Calendar-year 2011 average: 338.123
  - Average Sept. 2012 to March 2013 (E123 field work):[13] 377.203
- All-DRC person-weighted price deflator: 0.531534
- Area price deflators:[14]
  - Kinshasa 1.000000
  - Other urban 0.633771
  - Rural 0.397391

[9] This 64.0 percent differs from INS' 63.4 percent because it adjusts for prices across Kinshasa, other urban, and rural, rather than only urban and rural (INS, 2014, p. 100).
[10] World Bank, 2008.
[11] iresearch.worldbank.org/PovcalNet/Detail.aspx?Format=Detail&CO=ZAR_3&PPPO=537.732&PLO=1.90&YO=2012&NumOfCountries=1, retrieved 30 December 2017.
[12] The monthly CPI is from data.imf.org/regular.aspx?key=61545861, retrieved 22 December 2017. It is base = 100 in 2010. It is rebased here to Jan. 2004 = 112.080 and accounts—unlike PovcalNet and the IMF—for the IMF series' re-basing in Jan. 2010.
[13] This average CPI is weighted by the share of E123 households done in each month.
[14] These deflators are provided with the 2012 E123 microdata.

2.3.2.1 $1.25/day 2005 PPP line

For a given area in the DRC, the $1.25/day 2005 PPP line in prices in Kinshasa on average during field work for the 2012 E123 is

$$\frac{\$1.25 \cdot \text{2005 PPP factor} \cdot \left(\frac{\text{CPI}_{\text{E123}}}{\text{CPI}_{\text{2005}}}\right) \cdot \text{Area deflator}}{\text{Average all - DRC deflator}}.$$

For the example of rural areas in the DRC, the $1.25/day 2005 PPP line is

$$\frac{\$1.25 \cdot \left(\frac{\text{CDF316.232}}{\$1}\right) \cdot \left(\frac{377.203}{126.896}\right) \cdot 0.397391}{0.531534} = \text{CDF878 (Table 1)}.$$

The all-DRC $1.25/day 2005 PPP line is the person-weighted average of the three area lines. This is CDF1,175 per person per day, with a household-level poverty rate of 69.5 percent and a person-level poverty rate of 79.7 percent (Table 1).

The lines for $2.00/day, $2.50/day, and $5.00/day 2005 PPP are multiples of the $1.25/day 2005 PPP line.

The World Bank's PovcalNet does not report poverty lines nor poverty rates for $1.25/day 2005 PPP based on the 2012 E123.

2.3.2.2 $1.90/day 2011 PPP line

Given the parameters in the previous sub-section, the $1.90/day 2011 PPP line for a given area in the DRC is

$$\frac{\$1.90 \cdot 2011 \text{ PPP factor} \cdot \left(\frac{\text{CPI}_{\text{E123}}}{\text{CPI}_{2011}}\right) \cdot \text{Area deflator}}{\text{Average all - DRC deflator}}$$

For the example of the rural area in the DRC, the $1.90/day 2011 PPP line is

$$\frac{\$1.90 \cdot \left(\frac{\text{CDF}537.732}{\$1}\right) \cdot \left(\frac{377.203}{338.123}\right) \cdot 0.397391}{0.531534} = \text{CDF}852 \text{ (Table 1)}.$$

The all-DRC $1.90/day 2011 PPP line is the person-weighted average of the three area lines. This is CDF1,140 per person per day, with a household-level poverty rate of 68.0 percent and a person-level poverty rate of 78.5 percent (Table 1).

PovcalNet[15] reports a slightly lower $1.90/day 2011 PPP line for the 2012 E123 (CDF1,128 versus 1,140) and a lower person-level poverty rate (77.1 percent versus 78.5). The reasons for the differences are not known with certainty because PovcalNet does not report:

- The time/place of its price units
- Whether/how it adjusts for price differences across areas
- How it deflates 2011 PPP factors over time
- Whether it uses the same data as INS (2014)

[15] iresearch.worldbank.org/PovcalNet/Detail.aspx?Format=Detail&C0=ZAR_3&PPP0=537.732&PL0=1.90&Y0=2012&NumOfCountries=1, retrieved 30 December 2017.

This paper's figures for $1.90/day 2011 PPP are to be preferred they are more completely documented (Schreiner, 2014b). PovcalNet did not account for the DRC's re-basing of the CPI in January of 2010[16], PovcalNet may not have accounted for the uneven completion of surveys across the months of the 2012 E123 field work, and PovcalNet in other countries sometimes fails to adjust for price differences across areas.

The 2011 PPP poverty lines for $3.20/day, $5.50/day, and $21.70/day are multiples of the $1.90/day line.[17]

2.3.3 USAID "very poor" line

Microenterprise programs in the DRC that use the scorecard to report the number of their participants who are "very poor" to USAID should use the $1.90/day 2011 PPP line. This is because USAID defines the "very poor" as those people in households whose daily per-capita consumption is below the highest of the following two poverty lines (U.S. Congress, 2004):

- The line that marks the poorest half of people below 100% of the national line (CDF521, with a person-level poverty rate of 32.0 percent, Table 1)
- The $1.90/day 2011 PPP line (CDF1,140, with a person-level poverty rate of 78.5 percent)

[16] PovcalNet's annual average CPIs at iresearch.worldbank.org/PovcalNet/Docs/CountryDocs/ZAR.htm#3 (retrieved 30 December 2017) follow the IMF's annual averages at data.imf.org/regular.aspx?key=61545861 (retrieved 22 December 2017), but the IMF's annual averages do not follow from the IMF's monthly data.

[17] Jolliffe and Prydz (2016) discuss the World Bank's choice of the four 2011 PPP lines.

2.3.4 Percentile-based lines

The scorecard for the DRC also supports percentile-based poverty lines.[18] This facilitates a number of types of analyses. For example, the second-quintile (40^{th}-percentile) line might be used to help track the DRC's progress toward the World Bank's (2013) goal of "shared prosperity/inclusive economic growth", defined as income growth among the bottom 40 percent of the world's people.

The four quintile lines, analyzed together, can also be used to look at the relationship of consumption with health outcomes (or anything else related with the distribution of consumption). The scorecard thus offers an alternative for health-equity analyses that typically have used a "wealth index" such as that supplied with the data from the Demographic and Health Surveys (Rutstein and Johnson, 2004) to compare some estimate of wealth with health outcomes.

Of course, relative-wealth analyses were always possible (and still are possible) with scores from the scorecard. But support for relative consumption lines allows a more straightforward use of a single tool to analyze any or all of:

- Relative wealth (via scores)
- Absolute consumption (via poverty likelihoods and absolute poverty lines)
- Relative consumption (via poverty likelihoods and percentile-based poverty lines)

[18] Following the DHS wealth index, percentiles are defined in terms of people (not households) for the DRC as a whole. For example, the all-DRC person-level poverty rate for the first-quintile (20^{th}-percentile) poverty line is 20 percent (Table 1). The household-level poverty rate for that same line is not 20 percent but rather 14.5 percent.

Unlike the scorecard, wealth indexes serve only to analyze relative wealth. Furthermore, the scorecard—unlike wealth indexes based on Principal Component Analysis or similar approaches—uses a straightforward, well-understood poverty standard whose definition is external to the tool itself (consumption related to a poverty line defined in monetary units).

In contrast, a wealth index opaquely defines *poverty* in terms of its own indicators and points, without reference to an external standard. This means that two wealth indexes with different indicators or different points—even if derived from the same data for a given country—imply two different definitions of *poverty*. In the same set-up, two scorecards would provide comparable estimates under a single definition of *poverty*.

3. Scorecard construction

For the DRC, about 70 candidate indicators are initially prepared in the areas of:

- Household composition (such as the number of household members)
- Education (such as the school attendance of household members ages 7 to 16)
- Housing (such as the main material of the floor or walls)
- Ownership of durable assets (such as beds or televisions)
- Employment (such as whether the male head/spouse works)
- Agriculture (such as the whether the household has farmland and keeps livestock)

Table 2 lists the candidate indicators, ordered by the entropy-based "uncertainty coefficient" (Goodman and Kruskal, 1979) that measures how well a given indicator predicts poverty status on its own.[19]

One possible application of the scorecard is to estimate the annual change in poverty rates. Thus, when selecting indicators—and holding other considerations constant—preference is given to more sensitive indicators. For example, the possession of a bed is probably more likely to change in response to changes in poverty than is the age of the male head/spouse.

The scorecard itself is built using 100% of the national poverty line and Logit regression on the construction sub-sample. Indicator selection is based on both judgment and statistics. The first step is to use Logit to build one scorecard for each candidate indicator. The power of each one-indicator scorecard to rank households by poverty status is measured as "c" (SAS Institute Inc., 2004).

[19] The uncertainty coefficient is *not* used when selecting scorecard indicators. It is only used as a way to order the candidate indicators listed in Table 2.

One of these one-indicator scorecards is then selected based on several factors (Schreiner *et al.*, 2014; Zeller, 2004). These include improvement in accuracy, likelihood of acceptance by users (determined by simplicity, cost of collection, and "face validity" in terms of experience, theory, and common sense), sensitivity to changes in consumption, variety among types of indicators, applicability across areas, tendency to have a slow-changing relationship with poverty over time, relevance for distinguishing among households at the poorer end of the distribution of consumption, and verifiability.

A series of two-indicator scorecards are then built, each adding a second indicator to the one-indicator scorecard selected from the first round. The best two-indicator scorecard is then selected, again using judgment to balance statistical accuracy with the non-statistical criteria. These steps are repeated until the scorecard has 10 indicators that work well together.

The final step is to transform the Logit coefficients into non-negative integers such that total scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line).

This algorithm is similar to common R^2-based stepwise least-squares regression. It differs from naïve stepwise in that the selection of indicators considers both statistical[20] and non-statistical criteria. The use of non-statistical criteria can improve robustness through time and across non-nationally representative groups. It also helps ensure that indicators are straightforward, common-sense, inexpensive-to-collect, and acceptable to users.

The single scorecard here applies to all of the DRC. Segmenting poverty-assessment tools by urban/rural does not improve targeting accuracy much. This is documented for nine countries in Sub-Saharan Africa (Brown, Ravaillon, and van de Walle, 2016)[21], Indonesia (World Bank, 2012), Bangladesh (Sharif, 2009), India and Mexico (Schreiner, 2006 and 2005a), Sri Lanka (Narayan and Yoshida, 2005), and Jamaica (Grosh and Baker, 1995). In general, segmentation may improve the accuracy of estimates of poverty rates (Schreiner, forthcoming; Diamond *et al.*, 2016; Tarozzi and Deaton, 2009), but it may also increase the risk of overfitting (Haslett, 2012).

[20] The statistical criterion for selecting an indicator is not the p values of its coefficients but rather the indicator's contribution to the ranking of households by poverty status.
[21] The nine countries are Burkina Faso, Ethiopia, Ghana, Malawi, Mali, Niger, Nigeria, Tanzania, and Uganda. On average across these countries when targeting people in the lowest quintile or in the lowest two quintiles of scores and when 20 or 40 percent of people are poor, segmenting by urban/rural increases the number of poor people correctly targeted by about one per 200 or one per 400 poor people (Schreiner, 2017d).

4. Practical guidelines for scorecard use

The main challenge of scorecard design is not to maximize statistical accuracy but rather to improve the chances that the scorecard is actually used and used properly (Schreiner, 2005b). When scorecard projects fail, the reason is not usually statistical inaccuracy but rather the failure of an organization to decide to do what is needed to integrate the scorecard in its processes and to train and convince its employees to use the scorecard properly (Schreiner, 2002). After all, most reasonable scorecards have similar targeting accuracy, thanks to the empirical phenomenon known as the "flat maximum" (Caire and Schreiner, 2012; Hand, 2006; Baesens *et al.*, 2003; Lovie and Lovie, 1986; Kolesar and Showers, 1985; Stillwell, Barron, and Edwards, 1983; Dawes, 1979; Wainer, 1976; Myers and Forgy, 1963). The bottleneck is less technical and more human, not statistics but organizational-change management. Accuracy is easier to achieve than adoption.

The scorecard here is designed to encourage understanding and trust so that users will want to adopt it on their own and use it properly. Of course, accuracy matters, but it must be balanced with cost, ease-of-use, and "face validity". Programs are more likely to collect data, compute scores, and pay careful attention to the results if, in their view, the scorecard does not imply a lot of additional work and if the whole process generally seems to them to make sense.

To this end, the DRC's scorecard fits on one page. The construction process, indicators, and points are straightforward and transparent. Additional work is minimized; non-specialists can compute scores by hand in the field because the scorecard has:

- Only 10 indicators
- Only "multiple-choice" indicators
- Only simple points (non-negative integers, and no arithmetic beyond addition)

The scorecard (and its "Back-page Worksheet") is ready to be photocopied. A field worker using the DRC's scorecard would:

- Record the interview identifier, interview date, country code ("COD"), scorecard code ("001") and the sampling weight assigned to the household of the participant by the organization's survey design (if known)
- Record the names and identifiers of the participant (who is not necessarily the same as the respondent), of the field agent who is the participant's main point of contact with the organization (who is not necessarily the same as the enumerator), and of the organizational service point that is relevant for the participant (if there is such a service point)
- Complete the "Back-page Worksheet" with each household member's first name (or nickname), age, and school attendance, starting with the head and his/her spouse/conjugal partner (if he/she exists)
- Based on what has been recorded on the "Back-page Worksheet", record household size (that is, the number of household members) in the scorecard header next to "Number of household members:"
- Based on what has been recorded on the "Back-page Worksheet", mark the response to the first scorecard indicator ("How many household members are there?")
- Based on what has been recorded on the "Back-page Worksheet", mark the response to the second scorecard indicator ("Do all household members ages 7 to 18 go to school in the current school year?")
- Read the rest of the scorecard indicators to the respondent one-by-one. Circle each of the responses and their points, and write each point value in the far right-hand column
- Add up the points to get a total score (if desired)
- Implement targeting policy (if any) based on the score
- Deliver the paper scorecard to a central office for data entry and filing

Of course, field workers must be trained. The quality of outputs depends on the quality of inputs. Field worker's training should be based solely on the "Interview Guide" in this document.

If organizations or field workers gather their own data and believe that they have an incentive to exaggerate poverty rates (for example, if managers or funders reward them for higher poverty rates), then it is wise to do on-going quality control via data review and random audits (Matul and Kline, 2003).[22] IRIS Center (2007a) and Toohig (2008) are useful nuts-and-bolts guides for budgeting, training field workers and supervisors, logistics, sampling, interviewing, piloting, recording data, and controlling quality. Schreiner (2014a) explains how to compute estimates and analyze them.

In particular, while collecting scorecard indicators is relatively easier than alternative ways of assessing poverty, it is still absolutely difficult. Training and explicit definitions of the terms and concepts in the scorecard are essential, and field workers should scrupulously study and follow the "Interview Guide" found after the References

[22] If a program does not want field workers or respondents to know the points associated with responses, then it can give them a version of the scorecard that does not display the points and then apply the points and compute scores later at a central office. Even if points are hidden, however, field workers and respondents can use common sense to guess how response options are linked with poverty. Schreiner (2012b) argues that hiding points in Colombia (Camacho and Conover, 2011) did little to deter cheating and that, in any case, cheating by the user's central office was more damaging than cheating by field workers and respondents.

in this paper, as this "Interview Guide"—along with the "Back-page Worksheet"—are integral parts of the Scorocs Simple Poverty Scorecard tool.[23]

For the example of Nigeria, one study (Onwujekwe, Hanson, and Fox-Rushby, 2006) found distressingly low inter-rater and test-retest correlations for indicators as seemingly incontrovertible as whether a household owns an automobile. At the same time, Grosh and Baker (1995) suggest that gross underreporting of assets does not affect targeting. For the first stage of targeting in a conditional cash-transfer program in Mexico, Martinelli and Parker (2007, pp. 24–25) find that "under-reporting [of asset ownership] is widespread but not overwhelming, except for a few goods . . . [and] over-reporting is common for a few goods". Still, as is done in Mexico in the second stage of its targeting process, most false self-reports can be corrected (or avoided in the first place) by field workers who make a home visit. This is the recommended procedure for organizations that use the scorecard for targeting in the DRC.

[23] The guidelines here are the only ones that organizations should give to field workers. All other issues of interpretation should be left to the judgment of field workers and respondents, as this seems to be what the DRC's INS did in the 2012 E123.

In terms of implementation and sampling design, an organization must make choices about:

- Who will do the interviews
- Where interviews will be done
- How responses and scores will be recorded
- Which households of participants will be interviewed
- How many households of participants will be interviewed
- How frequently households of participants will be interviewed
- Whether the scorecard will be applied at more than one point in time
- Whether the same households of participants will be scored at more than one point in time

In general, the sampling design should follow from the organization's goals for the exercise, the questions to be answered, and the budget. The main goals should be to make sure that the sample is representative of a well-defined population and that the use of the scorecard will inform issues that matter to the organization.

The non-specialists who apply the scorecard in the field with the households of an organization's participants can be:

- Employees of the organization
- Third parties

There is only one correct, on-label way to do interviews: in-person, at the sampled household's residence, with an enumerator trained to follow the "Interview Guide". This is how the DRC's INS did interviews in the 2012 E123, and this provides the most-accurate and most-consistent data (and thus the best poverty-rate estimates).

Of course, it is possible to do interviews in other ways such as:

- Without an enumerator (for example, respondents fill out paper or web forms on their own or answer questions sent via e-mail, text messaging, or automated voice-response systems)
- Away from the residence (for example, at an organizational service point or at a group-meeting place)
- Not in-person (for example, an enumerator interviewing by phone)

While such off-label methods may reduce costs, they also affect responses (Schreiner, 2015a) and thus reduce the accuracy of scorecard estimates. This is why interviewing by a trained enumerator at the residence is recommended and why off-label methods are not recommended.

In some contexts—such as when an organization's field agents do not already visit participants periodically at home anyway—the organization might judge that the lower costs an off-label approach are enough to compensate for less-accurate estimates. The business wisdom of off-label methods depends on context-specific factors that an organization must judge for itself. To judge carefully, an organization that is considering an off-label method should do a test to check how responses differ with the off-label method versus with a trained enumerator at the residence.

Responses, scores, and poverty likelihoods can be recorded by enumerators on:

- Paper in the field, and then filed at a central office
- Paper in the field, and then keyed into a database or spreadsheet at a central office
- Portable electronic devices in the field, and then uploaded to a database[24]

[24] The author of this paper can support organizations that want to set up a system to collect data with portable electronic devices in the field or to capture data in a database at the office once paper forms come in from the field. Support is also available for automating the calculation of estimates as well as for reporting and analysis.

Given a population of participants relevant for a particular business question, the participants whose households will be interviewed can be:

- All relevant participants (a census)
- A representative sample of relevant participants
- All relevant participants in a representative sample of relevant field offices and/or in a representative sample of relevant field agents
- A representative sample of relevant participants in a representative sample of relevant field offices and/or in a representative sample of relevant field agents

If not determined by other factors, the number of participants whose households are to be interviewed can be derived from sample-size formulas (presented later) to achieve a desired confidence level and a desired confidence interval. To have the best chance to meaningfully inform questions that matter to the organization, however, the focus should be less on having a sample size large enough to achieve some arbitrary level of statistical significance and more on having a representative sample from a well-defined population that is relevant for issues that matter to the organization. In practice, errors due to implementation issues and due to interviewing a non-representative sample will usually swamp errors due to not having a larger sample size.

The frequency of application can be:

- As a once-off project (precluding estimating change)
- Every three years (or at any other fixed or variable time interval, allowing estimating change)
- Each time a field worker visits a participant at home (allowing estimating change)

If a scorecard is applied more than once in order to estimate annual changes in poverty rates, then it can be applied:

- With a different set of participants from the same population
- With the same set of participants

An example set of choices is illustrated by BRAC and ASA, two microfinance organizations in Bangladesh who each have about 7 million participants and who declared their intention to apply the Scorocs Simple Poverty Scorecard tool for Bangladesh (Schreiner, 2013a) with a sample of about 25,000. Their design is that all loan officers in a random sample of branches will score all participants each time loan officers visit a homestead (about once a year) as part of their standard due diligence prior to loan disbursement. The loan officers record responses on paper in the field before sending the forms to a central office to be entered into a database and converted to poverty likelihoods.

5. Estimates of a household's poverty likelihood

The sum of scorecard points for a household is called the *score*. For the DRC, scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line). While higher scores indicate less likelihood of being poor, the scores themselves have only relative units. For example, doubling the score decreases the likelihood of being below a given poverty line, but it does not cut it in half.

To get absolute units, scores are converted to *poverty likelihoods*, that is, probabilities of being below a poverty line. This is done via easy-to-use look-up tables. For the example of 100% of the national line, scores of 38–39 have a poverty likelihood of 58.4 percent, and scores of 40–41 have a poverty likelihood of 53.9 percent (Table 3).

The poverty likelihood associated with a score varies by poverty line. For example, scores of 38–39 are associated with a poverty likelihood of 58.4 percent for 100% of the national line but of 79.1 percent for the $1.90/day 2011 PPP line.[25]

[25] From Table 3 on, many tables have 18 versions, one for each of the 18 supported poverty lines. To keep them straight, they are grouped by line. Single tables pertaining to all lines appear with the first group of tables for 100% of the national line.

5.1 Calibrating scores with poverty likelihoods

A given score is associated ("calibrated") with a *poverty likelihood* that is defined as the share of households in the calibration sub-sample who have the score and who have per-capita or per-adult-equivalent consumption below a given poverty line.

For the example of 100% of the national line (Table 4), there are 8,162 (normalized) households in the calibration sub-sample with a score of 38–39. Of these, 4,770 (normalized) are below the poverty line. The estimated poverty likelihood associated with a score of 38–39 is then 58.4 percent, because 4,770 ÷ 8,162 = 58.4 percent.

To illustrate with 100% of the national line and a score of 40–41, there are 7,715 (normalized) households in the calibration sub-sample, of whom 4,157 (normalized) are below the line (Table 4). The poverty likelihood for this score range is then 4,157 ÷ 7,715 = 53.9 percent.

The same method is used to calibrate scores with estimated poverty likelihoods for all 18 poverty lines.[26]

[26] To ensure that poverty likelihoods never increase as scores increase, likelihoods across pairs of adjacent scores may be iteratively averaged before grouping scores into ranges. This preserves unbiasedness while keeping users from balking when sampling variation in score ranges with few households would otherwise lead to higher scores being linked with higher poverty likelihoods.

Even though the scorecard is constructed partly based on judgment related to non-statistical criteria, the calibration process produces poverty likelihoods that are objective, that is, derived from monetary poverty lines and from survey data on consumption. The calibrated poverty likelihoods would be objective even if the process of selecting indicators and points did not use any data at all. In fact, objective scorecards of proven accuracy are often constructed using only expert judgment to select indicators and points (Fuller, 2006; Caire, 2004; Schreiner *et al.*, 2014). Of course, the scorecard here is constructed with both data and judgment. The fact that this paper acknowledges that some choices in scorecard construction—as in any statistical analysis—are informed by judgment in no way impugns the objectivity of the poverty likelihoods, as their objectivity depends on using data in score calibration, not on using data (and nothing else) in scorecard construction.

Although the points in the DRC scorecard are transformed coefficients from a Logit regression, (untransformed) scores are not converted to poverty likelihoods via the Logit formula of 2.718281828^{score} x $(1 + 2.718281828^{score})^{-1}$. This is because the Logit formula is esoteric and difficult to compute by hand. It is more intuitive to define the poverty likelihood as the share of households with a given score in the calibration sample who are below a poverty line. Going from scores to poverty likelihoods in this way requires no arithmetic at all, just a look-up table. This approach to calibration can also improve accuracy, especially with large samples.

5.2 Accuracy of estimates of households' poverty likelihoods

As long as the relationships between indicators and poverty do not change over time, and as long as the scorecard is applied to households who are representative of the same population as that from which the scorecard was originally constructed, then this calibration process produces unbiased estimates of poverty likelihoods. *Unbiased* means that in repeated samples from the same population, the average estimate matches the population's true value. Given the assumptions above, the scorecard also produces unbiased estimates of poverty rates at a point in time and unbiased estimates of the annual change in poverty rates between two points in time.[27]

Of course, the relationships between indicators and poverty do change to some unknown extent over time, and they also vary across sub-national groups in the DRC's population. Thus, scorecard estimates will generally have errors when applied after November 2012 (the last month of major field work for the 2012 E123) or when applied with sub-groups that are not nationally representative.

[27] This is because these estimates of populations' poverty rates are linear functions of the unbiased estimates of households' poverty likelihoods.

How accurate are estimates of households' poverty likelihoods, given the assumption of unchanging relationships between indicators and poverty over time and the assumption of a sample that is representative of the DRC as a whole? To find out, the scorecard is applied to 1,000 bootstrap samples of size $n = 16{,}384$ from the validation sample. Bootstrapping means to:

- Score each household in the validation sample
- Draw a bootstrap sample *with replacement* from the validation sample and accounting for household-level sampling weights
- For each score range, compute the observed poverty likelihood in the bootstrap sample, that is, the share of households with the score and with consumption below a poverty line
- For each score range, record the difference between the estimated poverty likelihood (Table 3) and the observed poverty likelihood in the bootstrap sample
- Repeat the previous three steps 1,000 times
- For each score range, report the average difference between estimated and observed poverty likelihoods across the 1,000 bootstrap samples
- For each score range, report the intervals containing the central 900, 950, and 990 differences between estimated and observed poverty likelihoods

For each score range and for $n = 16{,}384$, Table 5 shows the errors in the estimates of poverty likelihoods, that is, the average of differences between the estimates and observed values. It also shows confidence intervals for the errors.

For 100% of the national line and on average across bootstrap samples from the validation sample, the estimated poverty likelihood for scores of 38–39 (58.4 percent, Table 3) is too high by 8.8 percentage points. For scores of 40–41, the estimate is too high by 1.0 percentage points.[28]

[28] These differences are not zero, in spite of the estimator's unbiasedness, because the scorecard comes from a single sample. The average difference by score would be zero if

The 90-percent confidence interval for the differences for scores of 38–39 is ±4.0 percentage points (Table 5). This means that in 900 of 1,000 bootstraps, the average difference between the estimate and the observed value for households in this score range is between +4.8 and +12.8 percentage points (because +8.8 – 4.0 = +4.8, and +8.8 + 4.0 = +12.8). In 950 of 1,000 bootstraps (95 percent), the difference is +8.8 ± 4.9 percentage points, and in 990 of 1,000 bootstraps (99 percent), the difference is +8.8 ± 6.4 percentage points.

Many of the absolute errors between estimated and observed poverty likelihoods in Table 5 for 100% of the national line are large. The differences are at least partly due to the fact that the validation sample is a single sample that—thanks to sampling variation—differs in distribution from the construction/calibration sub-sample and from the DRC's population. For targeting, however, what matters is less the difference in all score ranges and more the differences in the score ranges just above and just below the targeting cut-off. This mitigates the effects of error and sampling variation on targeting (Friedman, 1997). Section 8 below looks at targeting accuracy in detail.

---

samples were repeatedly drawn from the population and split into sub-samples before repeating the entire process of scorecard construction/calibration and validation.

In addition, if estimates of populations' poverty rates are to be usefully accurate, then errors for individual households' poverty likelihoods must largely balance out. As discussed in the next section, this is generally the case for nationally representative samples in 2012 in the DRC, although it will hold less well for samples from sub-national populations and in other time periods.

Another possible source of errors between estimates and observed values is overfitting. The scorecard here is unbiased, but it may still be *overfit* when applied after the end of the major E123 field work in November 2012. That is, the scorecard may fit the construction/calibration data from 2012 so closely that it captures not only some real patterns but also some random patterns that, due to sampling variation, show up only in the 2012 E123 construction/calibration data but not in the overall population of the DRC. Or the scorecard may be overfit in the sense that it is not robust when relationships between indicators and poverty change over time or when the scorecard is applied to samples that are not nationally representative.

Overfitting can be mitigated by simplifying the scorecard and by not relying only on data but rather also considering theory, experience, and judgment. Of course, the scorecard here does this. Combining scorecards can also reduce overfitting, at the cost of greater complexity.

Most errors in individual households' likelihoods do balance out in the estimates of poverty rates for nationally representative samples (see the next two sections). Furthermore, at least some of the differences in change-over-time estimates come from non-scorecard sources such as changes in the relationships between indicators and poverty, sampling variation, changes in poverty lines, inconsistencies in data quality across time, and imperfections in price adjustments across time and across geographic areas. These factors can be addressed only by improving the availability, frequency, quantity, and quality of data from national consumption surveys (which is beyond the scope of the scorecard) or by reducing overfitting (which likely has limited returns, given the scorecard's parsimony).

6. Estimates of a poverty rate at a point in time

A population's estimated poverty rate at a point in time is the average of the estimated poverty likelihoods of the sampled households.

To illustrate, suppose a program samples three households on 1 January 2019 and that they have scores of 20, 30, and 40, corresponding to estimated poverty likelihoods of 85.4, 75.5, and 53.9 percent (100% of the national line, Table 3). The population's estimated poverty rate is the households' average poverty likelihood of $(85.4 + 75.5 + 53.9) \div 3 = 71.6$ percent.[29]

Be careful; the population's estimated poverty rate is *not* the poverty likelihood associated with the average score. Here, the average score is 30, which corresponds to an estimated poverty likelihood of 75.5 percent. This differs from the 71.6 percent found as the average of the three individual poverty likelihoods associated with each of the three scores. Unlike poverty likelihoods, scores are ordinal symbols, like letters in the alphabet or colors in the spectrum. Because scores are not cardinal numbers, they cannot meaningfully be added up or averaged across households. Only three operations are valid for scores: conversion to poverty likelihoods, analysis of distributions (Schreiner, 2012a), or comparison—if desired—with a cut-off for segmentation. There are a few contexts in which the analysis of scores is appropriate, but, in general, the

[29] This example assumes simple random sampling (or a census) and analysis at the level of households so that each household's household-level weight is one (1). The weights would differ by household if there were stratified sampling or—as discussed in Section 2—if the analysis were at the level of the person or at the level of the participant.

safest rule to follow is: If you are not completely sure what to do, then use poverty likelihoods, not scores.

Scores from the scorecard are calibrated with data from the 2012 E123 for all 18 poverty lines. The process of calibrating scores to poverty likelihoods and the approach to estimating poverty rates is exactly the same for all poverty lines. For users, the only difference in terms of what they do with one poverty line versus with another has to do with the specific look-up table used to convert scores to poverty likelihoods.

6.1 Accuracy of estimated poverty rates at a point in time

For the scorecard applied to 1,000 bootstraps of $n = 16{,}384$ from the validation sample and 100% of the national line, the error (average difference between the estimate and observed value in the 2012 E123) for a poverty rate at a point in time is +3.1 percentage points (Table 7, summarizing Table 6 for all poverty lines). Across the 18 poverty lines in the validation sample, the maximum of the absolute values of the error is 4.8 percentage points, and the average of the absolute values of the average error is about 2.3 percentage points. At least part of these differences is due to sampling variation in the division of the 2012 E123 into sub-samples.

When estimating poverty rates at a point in time for a given poverty line, the error reported in Table 7 should be subtracted from the average poverty likelihood to give a corrected estimate. For the example of the scorecard and 100% of the national line in the validation sample, the error is +3.1 percentage points, so the corrected estimate in the three-household example above is 71.6 – (+3.1) = 68.5 percent.

In terms of precision, the 90-percent confidence interval for a population's estimated poverty rate at a point in time with n = 16,384 is ±0.7 percentage points or smaller for all poverty lines (Table 7). This means that in 900 of 1,000 bootstraps of this size, the estimate (after correcting for the known average error) is within 0.7 percentage points of the observed value.

For example, suppose that the (uncorrected) average poverty likelihood in a sample of n = 16,384 with the scorecard and 100% of the national line is 71.6 percent. Then estimates in 90 percent of such samples would be expected to fall in the range of 71.6 – (+3.1) – 0.7 = 67.8 percent to 71.6 – (+3.1) + 0.7 = 69.2 percent, with the most likely observed value being the corrected estimate in the middle of this range, that is, 71.6 – (+3.1) = 68.5 percent. This is because the original (uncorrected) estimate is 71.6 percent, the average error is +3.1 percentage points, and the 90-percent confidence interval for 100% of the national line in the validation sample with this sample size is ±0.7 percentage points (Table 7).

6.2 Formula for standard errors for estimates of poverty rates

How precise are the point-in-time estimates? Because these estimates are averages, they have (in "large" samples) a Normal distribution and can be characterized by their error (average difference vis-à-vis observed values), together with their standard error (precision).

Schreiner (2008) proposes an approach to deriving a formula for the standard errors of estimated poverty rates at a point in time from indirect estimation via a poverty-assessment tool. It starts with Cochran's (1977) textbook formula of $\pm c = \pm z \cdot \sigma$ that relates confidence intervals with standard errors in the case of the direct measurement of ratios, where:

$\pm c$ is a confidence interval as a proportion (*e.g.*, ± 0.02 for ± 2 percentage points),

z is from the Normal distribution and is $\begin{cases} 1.04 \text{ for confidence levels of 70 percent} \\ 1.28 \text{ for confidence levels of 80 percent} \\ 1.64 \text{ for confidence levels of 90 percent} \end{cases}$,

σ is the standard error of the estimated poverty rate, that is, $\sqrt{\frac{\hat{p} \cdot (1 - \hat{p})}{n}} \cdot \phi$,

$\hat{p}$ is the estimated proportion of households below the poverty line in the sample,

ϕ is the finite population correction factor $\sqrt{\frac{N - n}{N - 1}}$,

N is the population size, and

n is the sample size.

For example, the DRC's 2012 E123 gives a direct-measure household-level poverty rate for 100% of the national line of $\hat{p} = 53.3$ percent (Table 1).[30] If this measure came from a sample of $n = 16{,}384$ households from a population N of 14,014,865 (the number of households in the DRC in 2012 according to the E123 sampling weights), then the finite population correction ϕ is $\sqrt{\frac{14{,}014{,}865 - 16{,}384}{14{,}014{,}865 - 1}} = 0.9994$, which is very close to $\phi = 1$. If the desired confidence level is 90-percent ($z = 1.64$), then the confidence interval $\pm c$ is

$$\pm z \cdot \sqrt{\frac{\hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}} = \pm 1.64 \cdot \sqrt{\frac{0.533 \cdot (1 - 0.533)}{16{,}384}} \cdot \sqrt{\frac{2{,}137{,}567 - 16{,}384}{2{,}137{,}567 - 1}} = \pm 0.639$$

percentage points. If ϕ were taken as 1, then the interval is still ± 0.639 percentage points.

Unlike the 2012 E123, however, the scorecard does not measure poverty directly, so this formula is not applicable. To derive a formula for the scorecard, consider Table 6, which reports empirical confidence intervals $\pm c$ for the errors for the scorecard applied to 1,000 bootstrap samples of various sizes from the validation sample. For example, with $n = 16{,}384$ and 100% of the national line in the validation sample, the 90-percent confidence interval is ± 0.725 percentage points.[31]

[30] The analysis here ignores that poverty-rate estimates from the E123 are themselves based on a sample and so have their own sampling distribution.
[31] Due to rounding, Table 6 displays 0.7, not 0.725.

Thus, the 90-percent confidence interval with $n = 16{,}384$ is ± 0.725 percentage points for the scorecard and ± 0.639 percentage points for direct measurement. The ratio of the two intervals is $0.725 \div 0.639 = 1.13$.

Now consider the same exercise, but with $n = 8{,}192$. The confidence interval under direct measurement and 100% of the national line in the validation sample is $\pm 1.64 \cdot \sqrt{\frac{0.533 \cdot (1 - 0.533)}{8{,}192}} \cdot \sqrt{\frac{14{,}014{,}865 - 8{,}192}{14{,}014{,}865 - 1}} = \pm 0.904$ percentage points. The empirical confidence interval with the scorecard (Table 6) is ± 1.107 percentage points. Thus for $n = 8{,}192$, the ratio of the two intervals is $1.107 \div 0.904 = 1.22$.

This ratio of 1.22 for $n = 8{,}192$ is not too far from the ratio of 1.13 for $n = 16{,}384$. Across all sample sizes of 256 or more in Table 6, these ratios are generally close to each other, and the average of these ratios in the validation sample turns out to be 1.19. This implies that confidence intervals for indirect estimates of poverty rates via the DRC's scorecard and 100% of the national line are—for a given sample size—about 19-percent wider than confidence intervals for direct estimates via the 2012 E123. This 1.19 appears in Table 7 as the "α factor for precision" because if $\alpha = 1.19$, then the formula for approximate confidence intervals c for the scorecard is $\pm c = \pm z \cdot \alpha \cdot \sigma$. That is, the formula for the approximate standard error σ for point-in-time estimates of poverty rates via the scorecard is $\alpha \cdot \sqrt{\frac{\hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}}$.

In general, α can be greater than or less than 1.00. When α is more than 1.00, it means that the scorecard is less precise than direct measurement. It turns out that α is greater than 1.00 for 17 of the 18 poverty lines in Table 7, and its highest value is 1.47.

The formula relating confidence intervals with standard errors for the scorecard can be rearranged to give a formula for determining sample size before estimation. If $\widetilde{p}$ is the expected poverty rate before estimation, then the formula for sample size n from a population of size N that is based on the desired confidence level that corresponds to z and the desired confidence interval $\pm c$ is $n = N \cdot \left(\frac{z^2 \cdot \alpha^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p})}{z^2 \cdot \alpha^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p}) + c^2 \cdot (N - 1)} \right)$. If the population N is "large" relative to the sample size n, then the finite-population correction factor ϕ can be taken as one (1), and the formula becomes

$$n = \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p}).$$

To illustrate how to use this, suppose the population N is 14,014,865 (the number of households in the DRC in 2012), suppose $c = 0.05982$, $z = 1.64$ (90-percent confidence), and the relevant poverty line is 100% of the national line so that the most sensible expected poverty rate $\widetilde{p}$ is the DRC's overall poverty rate for that line in 2012 (53.3 percent at the household level, Table 1). The α factor is 1.19 (Table 7). Then the sample-size formula gives

$$n = 14{,}014{,}865 \cdot \left(\frac{1.64^2 \cdot 1.19^2 \cdot 0.533 \cdot (1 - 0.533)}{1.64^2 \cdot 1.19^2 \cdot 0.533 \cdot (1 - 0.533) + 0.05982^2 \cdot (14{,}014{,}865 - 1)} \right) = 265,$$

which is not far from the sample size of 256 observed for these parameters in Table 6

for 100% of the national line. Taking the finite population correction factor ϕ as one (1) gives the same result, as $n = \left(\frac{1.19 \cdot 1.64}{0.05982}\right)^2 \cdot 0.533 \cdot (1 - 0.533) = 265$.[32]

Of course, the α factors in Table 7 are specific to the DRC, its poverty lines, its poverty rates, and this scorecard. The derivation of the formulas for standard errors using the α factors, however, is valid for any poverty-assessment tool following the approach in this paper.

[32] Although USAID has not specified confidence levels nor intervals, IRIS Center (2007a and 2007b) says that a sample size of $n = 300$ is sufficient for USAID reporting. USAID's microenterprise partners in the DRC should report using the \$1.90/day 2011 PPP line. Given the α factor of 1.24 for this line (Table 7), an expected before-measurement household-level poverty rate of 68.0 percent (the all-DRC rate for this line in 2012, Table 1), and a confidence level of 90 percent ($z = 1.64$), then $n = 300$ implies a confidence interval of $\pm 1.64 \cdot 1.24 \cdot \sqrt{\frac{0.680 \cdot (1 - 0.680)}{300}} = \pm 5.5$ percentage points.

In practice after the end of major field work for the E123 in November 2012, a program would select a poverty line (say, 100% of the national line), note its participants' population size (for example, $N = 10{,}000$ participants), select a desired confidence level (say, 90 percent, or $z = 1.64$), select a desired confidence interval (say, ± 2.0 percentage points, or $c = \pm 0.02$), make an assumption about $\widetilde{p}$ (perhaps based on a previous estimate such as the household-level poverty rate for 100% of the national line for the DRC of 53.3 percent in the 2012 E123 in Table 1), look up α (here, 1.19 in Table 7), assume that the scorecard will still work in the future and for sub-groups that are not nationally representative,[33] and then compute the required sample size. In this illustration, $n = 10{,}000 \cdot \left(\frac{1.64^2 \cdot 1.19^2 \cdot 0.533 \cdot (1 - 0.533)}{1.64^2 \cdot 1.19^2 \cdot 0.533 \cdot (1 - 0.533) + 0.02^2 \cdot (10{,}000 - 1)} \right) = 1{,}917.$

[33] This paper reports accuracy for the scorecard applied to its validation sample, but it does not test accuracy for later years nor for sub-populations that are not nationally representative. Performance after November 2012 will resemble that in the 2012 E123 with deterioration over time and across non-nationally representative sub-groups to the extent that the relationships between indicators and poverty status change.

7. Estimates of changes in poverty rates over time

The change in a population's poverty rate between two points in time is estimated as the change in the average poverty likelihood of a sample of households from the population.

With only data from the 2012 E123, this paper cannot test estimates of the annual change in poverty rates for the DRC, and it can only suggest approximate formulas for standard errors. Nevertheless, the relevant concepts are presented here because, in practice, pro-poor programs in the DRC can apply the scorecard to collect their own data and estimate change over time.

7.1 Warning: *Change* is not necessarily *impact*

The scorecard can estimate change. Of course, poverty could get better or worse, and the scorecard does not indicate what caused change. This point is often forgotten or confused, so it bears repeating: the scorecard merely estimates change, and it does not, in and of itself, indicate the causes of change. In particular, estimating the impact of participation requires knowledge or assumptions about what would have happened to participants if they had not been participants. Making judgments or drawing conclusions about causality requires either strong assumptions or a control group that resembles participants in all ways except participation. To belabor the point, the scorecard can help estimate the impact of participation only if there is some way to

know—or explicit assumptions about—what would have happened in the absence of participation. And that must come from beyond the scorecard.

7.2 Estimating annual changes in poverty rates

Consider the illustration begun in the previous section. On 1 January 2019, an organization samples three households who score 20, 30, and 40 and so have poverty likelihoods of 85.4, 75.5, and 53.9 percent (100% of the national line, Table 3). Given the known average error for this line in the validation sample of +3.1 percentage points (Table 7), the corrected baseline estimated poverty rate is the households' average poverty likelihood of [(85.4 + 75.5 + 53.9) ÷ 3] – (+3.1) = 68.5 percent.

After baseline, two sampling approaches are possible for the follow-up round:

- Score a new, independent sample from the same population
- Score the same sample that was scored at baseline

By way of illustration, suppose that three years later on 1 January 2022, the organization samples three additional households who are in the same population as the three original households and finds that their scores are 25, 35, and 45 (poverty likelihoods of 80.1, 66.6, and 43.2 percent, 100% of the national line, Table 3). Adjusting for the known average error, the average poverty likelihood at follow-up is [(80.1 + 66.6 + 43.2) ÷ 3] – (+3.1) = 60.2 percent. The reduction in the poverty rate is

then 68.5 – 60.2 = 8.3 percentage points.[34] Supposing that exactly three years passed between the average baseline interview and the average follow-up interview, the estimated annual decrease in the poverty rate is 8.3 ÷ 3 = 2.8 percentage points per year. That is, about one in 36 participants in this hypothetical example cross the poverty line each year.[35] Among those who start below the line, about one in 25 (2.8 ÷ 68.5 = 4.1 percent) on net end up above the line each year.[36]

Alternatively, suppose that the same three original households who were scored at baseline are scored again on 1 January 2022. Given scores of 25, 35, and 45, their follow-up poverty likelihoods are 80.1, 66.6, and 43.2 percent. The average across households of the difference in each given household's baseline poverty likelihood and its follow-up poverty likelihood is [(85.4 – 80.1) + (75.5 – 66.6) + (53.9 – 43.2)] ÷ 3 = 8.3 percentage points.[37] Assuming in this example that there are exactly three years between each household's interviews, the estimated annual decrease in the poverty rate is (again) 8.3 ÷ 3 = 2.8 percentage points per year.

[34] Of course, such a large reduction in poverty in three years is unlikely, but this is just an example to show how the scorecard can be used to estimate change.
[35] This is a net figure; some start above the line and end below it, and vice versa.
[36] The scorecard does not reveal the reasons for this change.
[37] In this approach, the error for this line in Table 7 should *not* be subtracted off.

Given the assumptions of the scorecard, both approaches give unbiased estimates of the annual change in poverty rates. In general and in practice, however, they will give different estimates due to differences in the timing of interviews, in the composition of the samples, and in the nature of two samples being scored once versus one sample being scored twice (Schreiner, 2014a).

7.3 Precision for estimated change in two independent samples

For two equal-sized independent samples, the same logic as in the previous section can be used to derive a formula relating the confidence interval $\pm c$ with the standard error σ of a poverty-assessment tool's estimate of the change in poverty rates over time:

$$\pm\, c = \pm z \cdot \sigma = \pm z \cdot \alpha \cdot \sqrt{\frac{2 \cdot \hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}}\,.$$

Here, z, c, $\hat{p}$ and N are defined as above, n is the sample size at both baseline and follow-up,[38] and α is the average (across a range of bootstrapped sample sizes) of the ratio of the observed confidence interval from a scorecard divided by the theoretical confidence interval under direct measurement.

[38] This means that—for a given level of precision—estimating the change in a poverty rate between two points in time requires four times as many interviews (not twice as many) as does estimating a poverty rate at a point in time.

As before, the formula for standard errors can be rearranged to give a formula for sample sizes before indirect estimation via a poverty-assessment tool, where $\widetilde{p}$ is based on previous estimates and is assumed equal at both baseline and follow-up: $n = 2 \cdot N \cdot \left(\frac{z^2 \cdot \alpha^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p})}{z^2 \cdot \alpha^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p}) + c^2 \cdot (N - 1)} \right)$. If ϕ can be taken as one, then the formula becomes $n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p})$.

With the available data for the DRC, it is not possible to estimate values of α here. Nevertheless, this α has been estimated for 18 countries (Schreiner 2017a, 2017b, 2017c, 2016a, 2016b, 2016c, 2016d, 2015b, 2015c, 2015d, 2015e, 2013a, 2013b, 2012c, 2010, 2009a, 2009b, and Chen and Schreiner, 2009). The unweighted average of α across countries—after averaging α across poverty lines and pairs of survey rounds within each country—is 1.08. This rough figure is as reasonable as any to use for the DRC.

To illustrate the use of this formula to determine sample size for estimating changes in poverty rates across two independent samples, suppose the desired confidence level is 90 percent ($z = 1.64$), the desired confidence interval is ± 2 percentage points ($\pm c = \pm 0.02$), the poverty line is 100% of the national line, $\alpha = 1.08$, $\widetilde{p} = 0.533$ (the household-level poverty rate in 2012 for 100% of the national line in Table 1), and the population N is large enough relative to the expected sample size n that the finite population correction ϕ can be taken as one (1). Then the baseline

sample size is $n = 2 \cdot \left(\frac{1.08 \cdot 1.64}{0.02}\right)^2 \cdot 0.533 \cdot (1 - 0.533) \cdot 1 = 3{,}905$, and the follow-up sample size is also 3,905.

7.4 Precision of estimates of change for one sample, scored twice

Analogous to previous derivations, the general formula relating the confidence interval $\pm c$ to the standard error σ when using a scorecard to estimate change for a single sample of households, all of whom are scored at two points in time, is:[39]

$$\pm c = \pm z \cdot \sigma = \pm z \cdot \alpha \cdot \sqrt{\frac{\hat{p}_{12} \cdot (1 - \hat{p}_{12}) + \hat{p}_{21} \cdot (1 - \hat{p}_{21}) + 2 \cdot \hat{p}_{12} \cdot \hat{p}_{21}}{n}} \cdot \sqrt{\frac{N - n}{n - 1}},$$

where z, c, α, N, and n are defined as usual, $\hat{p}_{12}$ is the share of all sampled households that move from below the poverty line to above it, and $\hat{p}_{21}$ is the share of all sampled households that move from above the line to below it. With the available data for the DRC, it is not possible to estimate values of α here.

The formula for confidence intervals can be re-arranged to give a formula for sample size before estimation. This requires an estimate (based on information available before estimation) of the expected shares of all households who cross the poverty line $\tilde{p}_{12}$ and $\tilde{p}_{21}$. Before estimation, an agnostic assumption is that the change in the poverty rate will be zero, which implies $\tilde{p}_{12} = \tilde{p}_{21} = \tilde{p}_*$, giving:

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c}\right)^2 \cdot \tilde{p}_* \cdot \sqrt{\frac{N - n}{n - 1}}.$$

[39] See McNemar (1947) and Johnson (2007). John Pezzullo helped find this formula.

Because $\widetilde{p}_*$ could be anything between 0 and 0.5, more information is needed to apply this formula. Suppose that the observed relationship between $\widetilde{p}_*$, the number of years y between baseline and follow-up, and $p_{\text{pre-baseline}} \cdot \left(1 - p_{\text{pre-baseline}}\right)$ is—as in Peru (Schreiner, 2009c)—close to:

$$\widetilde{p}_* = -0.02 + 0.016 \cdot y + 0.47 \cdot \left[p_{\text{pre-baseline}} \cdot \left(1 - p_{\text{pre-baseline}}\right)\right].$$

Given this, a sample-size formula for a sample of households to whom the scorecard is applied twice (once after November 2012 and then again later) is

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c}\right)^2 \cdot \left[-0.02 + 0.016 \cdot y + 0.47 \cdot p_{\text{pre-baseline}} \cdot \left(1 - p_{\text{pre-baseline}}\right)\right] \cdot \sqrt{\frac{N - n}{n - 1}}.$$

In Peru (the only source of a data-based estimate, Schreiner, 2009c), the average α across years and poverty lines is about 1.30.

To illustrate the use of this formula, suppose the desired confidence level is 90 percent ($z = 1.64$), the desired confidence interval is ±2.0 percentage points ($\pm c = \pm 0.02$), the poverty line is 100% of the national line, the sample will first be scored in 2019 and then again in 2022 ($y = 3$), and the population N is so large relative to the expected sample size n that the finite population correction ϕ can be taken as one (1). The pre-baseline household-level poverty rate p_{2019} is taken as 53.3 percent (Table 1), and α is assumed to be 1.30. Then the baseline sample size is

$n = 2 \cdot \left(\frac{1.30 \cdot 1.64}{0.02}\right)^2 \cdot \left[-0.02 + 0.016 \cdot 3 + 0.47 \cdot 0.533 \cdot \left(1 - 0.533\right)\right] \cdot 1 = 3{,}296$. The same group of 3,296 households is scored at follow-up as well.

8. Targeting

When a program uses the scorecard for segmenting clients for differentiated treatment (*targeting*), households with scores at or below a cut-off are labeled *targeted* and given one type of treatment by the program. Households with scores above a cut-off are labeled *non-targeted* and given another type of treatment.

There is a distinction between *targeting status* (having a score at or below a targeting cut-off) and *poverty status* (having consumption below a poverty line). Poverty status is a fact that is defined by whether consumption is below a poverty line as directly measured by a survey. In contrast, targeting status is a program's policy choice that depends on a cut-off and on an indirect estimate from a poverty-assessment tool.

Households that score at or below a given cut-off should be labeled as *targeted*,[40] not as *poor*. After all, unless all targeted households have poverty likelihoods of 100 percent, some of them are non-poor (their consumption is above a given poverty line). In the context of the scorecard, the terms *poor* and *non-poor* have specific definitions. Using these same terms for targeting status is incorrect and misleading.

[40] Others labels are acceptable as long as they describe the segment and do not confuse targeting status (having a score below a program-selected cut-off) with poverty status (having consumption below an externally-defined poverty line). Examples of acceptable labels include: *Groups A, B, and C*; *Households with scores of 29 or less, 30 to 69, or 70 or more*; and *Households that qualify for reduced fees, or that do not qualify.*

Targeting is successful when households truly below a poverty line are targeted (*inclusion*) and when households truly above a poverty line are not targeted (*exclusion*). Of course, no poverty-assessment tool is perfect, and targeting is unsuccessful when households truly below a poverty line are not targeted (*undercoverage*) or when households truly above a poverty line are targeted (*leakage*).

Table 8 depicts these four possible targeting outcomes. Targeting accuracy varies by the cut-off score. A higher cut-off has better inclusion and better undercoverage (but worse exclusion and worse leakage), while a lower cut-off has better exclusion and better leakage (but worse inclusion and worse undercoverage).

Programs should weigh these trade-offs when setting a cut-off. A formal way to do this is to assign net benefits—based on a program's values and mission—to each of the four possible targeting outcomes and then to choose the cut-off that maximizes total net benefits (Adams and Hand, 2000; Hoadley and Oliver, 1998).

Table 9 shows the distribution of households by targeting outcome for the DRC. For an example cut-off of 39 or less, outcomes for 100% of the national line in the validation sample are:

- Inclusion: 38.8 percent are below the line and correctly targeted
- Undercoverage: 14.4 percent are below the line and mistakenly not targeted
- Leakage: 13.4 percent are above the line and mistakenly targeted
- Exclusion: 33.3 percent are above the line and correctly not targeted

Increasing the cut-off to 41 or less improves inclusion and undercoverage but worsens leakage and exclusion:

- Inclusion: 42.0 percent are below the line and correctly targeted
- Undercoverage: 11.3 percent are below the line and mistakenly not targeted
- Leakage: 16.1 percent are above the line and mistakenly targeted
- Exclusion: 30.6 percent are above the line and correctly not targeted

Which cut-off is preferred depends on total net benefit. If each targeting outcome has a per-household benefit or cost, then total net benefit for a given cut-off is:

Benefit per household correctly included	x	Households correctly included	–
Cost per household mistakenly not covered	x	Households mistakenly not covered	–
Cost per household mistakenly leaked	x	Households mistakenly leaked	+
Benefit per household correctly excluded	x	Households correctly excluded.	

To set an optimal cut-off, a program would:

- Assign benefits and costs to possible outcomes, based on its values and mission
- Tally total net benefits for each cut-off using Table 9 for a given poverty line
- Select the cut-off with the highest total net benefit

The most difficult step is assigning benefits and costs to targeting outcomes. A program that uses targeting—with or without the scorecard—should thoughtfully consider how it values successful inclusion and exclusion versus errors of undercoverage and leakage. It is healthy to go through a process of thinking explicitly and intentionally about how possible targeting outcomes are valued.

A common choice of benefits and costs is the "hit rate", where total net benefit is the number of households correctly included or correctly excluded:

Hit rate =	1	x	Households correctly included	–
	0	x	Households mistakenly undercovered	–
	0	x	Households mistakenly leaked	+
	1	x	Households correctly excluded.	

Table 9 shows the hit rate for all cut-offs for the scorecard. For the example of 100% of the national line in the validation sample, total net benefit under the hit rate is 72.6 for a cut-off of 41 or less, with about three in four households in the DRC correctly classified.

The hit rate weighs successful inclusion of households below the poverty line the same as successful exclusion of households above the line. If a program values inclusion more (say, twice as much) than exclusion, then it can reflect this by setting the benefit for inclusion to 2 and the benefit for exclusion to 1. Then the chosen cut-off will maximize (2 x Households correctly included) + (1 x Households correctly excluded).[41]

[41] Table 9 also reports BPAC, the Balanced Poverty Accuracy Criterion adopted by USAID for certifying poverty-assessment tools for use by its microenterprise partners. IRIS Center (2005) made BPAC to consider accuracy in terms of the errors in estimated poverty rates and in terms of targeting inclusion. BPAC = (Inclusion – |Undercoverage – Leakage|) x [100 ÷ (Inclusion + Undercoverage)]. Schreiner (2014b) explains why BPAC does not add information over-and-above that provided by the other, more-standard, disaggregated measures used here.

As an alternative to assigning benefits and costs to targeting outcomes and then choosing a cut-off to maximize total net benefits, a program could set a cut-off to achieve a desired poverty rate among targeted households. The third column of Table 10 ("% targeted HHs who are poor") shows, for the scorecard applied to the validation sample, the estimated poverty rate among households who score at or below a given cut-off. For the example of 100% of the national line, targeting households in the validation sample who score 39 or less would target 52.3 percent of all households (second column) and would be associated with an estimated poverty rate among those targeted of 74.3 percent (third column).

Table 10 also reports two other measures of targeting accuracy. The first is a version of coverage ("% poor HHs who are targeted"). For the example of 100% of the national line with the validation sample and a cut-off of 39 or less, an estimated 72.9 percent of all poor households are covered.

The final targeting measure in Table 10 is the number of successfully targeted poor households for each non-poor household mistakenly targeted (right-most column). For 100% of the national line with the validation sample and a cut-off of 39 or less, it is estimated that covering about 2.9 poor households means leaking to 1 non-poor household.

9. Conclusion

Pro-poor programs in the DRC can use the scorecard to segment clients for differentiated treatment as well as to estimate:

- The likelihood that a household has consumption below a given poverty line
- The poverty rate of a population at a point in time
- The annual change in the poverty rate of a population

The scorecard is inexpensive to use and can be understood by non-specialists. It is designed to be practical for pro-poor programs in the DRC that want to improve how they monitor and manage their social performance.

The scorecard is constructed with data from about three-fifths of the observations on households in the DRC's 2012 E123. Those households' scores are then calibrated to poverty likelihoods for 18 poverty lines. The scorecard's accuracy (errors and standard errors) for targeting and for estimating poverty rates at a point in time is tested out-of-sample on data that is not used in scorecard construction.

When the scorecard is applied to the 18 poverty lines in the validation sample, the maximum absolute value of the average error for point-in-time estimates of poverty rates is 4.8 percentage points, and the average of the absolute values of the average error across the 18 lines is about 2.3 percentage points. Corrected estimates may be found by subtracting the known error for a given poverty line from original, uncorrected estimates.

For $n = 16{,}384$ and 90-percent confidence, the precision of point-in-time estimates of poverty rates is ± 0.7 percentage points or smaller. With $n = 1{,}024$, the 90-percent confidence intervals are ± 3.1 percentage points or smaller.

If an organization wants to use the scorecard for segmenting clients for differentiated treatment, then the results here provide useful information for selecting a targeting cut-off that fits its values and mission.

Although the statistical technique is innovative, and although technical accuracy is important, the design of the scorecard focuses on low-cost, transparency, and ease-of-use. After all, accuracy is irrelevant if an organization's managers feel so daunted by a tool's complexity or its cost that they do not even try to use it.

For this reason, the scorecard uses 10 indicators that are straightforward, low-cost, and verifiable. Points are all zeros or positive integers, and scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line). Scores are converted to poverty likelihoods via look-up tables, and targeting cut-offs are likewise straightforward to apply. The design attempts to facilitate voluntary adoption by helping program managers to understand and to trust the scorecard and by allowing non-specialists to add up scores quickly in the field.

In summary, the scorecard is a low-cost, practical, objective, transparent way for pro-poor programs in the DRC to estimate consumption-based poverty rates, track changes in poverty rates over time, and segment participants for differentiated treatment. The same approach can be applied to any country with similar data.

References

Adams, Niall M.; and David J. Hand. (2000) "Improving the Practice of Classifier Performance Assessment", *Neural Computation*, Vol. 12, pp. 305–311.

Baesens, Bart; Van Gestel, Tony; Viaene, Stijn; Stepanova, Maria; Suykens, Johan A.K.; and Jan Vanthienen. (2003) "Benchmarking State-of-the-Art Classification Algorithms for Credit Scoring", *Journal of the Operational Research Society*, Vol. 54, pp. 627–635.

Brown, Caitlin; Ravallion, Martin; and Dominique van de Walle. (2016) "A Poor Means Test? Econometric Targeting in Africa", World Bank Policy Research Working Paper No. 7915, documents.worldbank.org/curated/en/484991481639919564/pdf/WPS7915.pdf, retrieved 30 December 2017.

Caire, Dean. (2004) "Building Credit Scorecards for Small-Business Lending in Developing Markets", microfinance.com/English/Papers/Scoring_SMEs_Hybrid.pdf, retrieved 30 December 2017.

_____; and Mark Schreiner. (2012) "Cross-Tab Weighting for Credit Scorecards in Developing Markets", microfinance.com/English/Papers/Cross_Tab_Weights_for_Scoring.pdf, retrieved 30 December 2017.

Camacho, Adriana; and Emily Conover. (2011) "Manipulation of Social-Program Eligibility", *American Economic Journal: Economic Policy*, Vol. 3, No. 2, pp. 41–65.

Chen, Shiyuan; and Mark Schreiner. (2009) "Scorocs Simple Poverty Scorecard Tool: Vietnam", SimplePovertyScorecard.com/VNM_2006_ENG.pdf, retrieved 30 December 2017.

Coady, David; Grosh, Margaret; and John Hoddinott. (2004) *Targeting of Transfers in Developing Countries*, hdl.handle.net/10986/14902, retrieved 30 December 2017.

Cochran, William G. (1977) *Sampling Techniques, Third Edition.*

Dawes, Robyn M. (1979) "The Robust Beauty of Improper Linear Models in Decision-Making", *American Psychologist*, Vol. 34, No. 7, pp. 571–582.

Diamond, Alexis; Gill, Michael; Rebolledo Dellepiane, Miguel Angel; Skoufias, Emmanuel; Vinha, Katja; and Yiqing Xu. (2016) "Estimating Poverty Rates in Target Populations: An Assessment of the Simple Poverty Scorecard Poverty-Assessment Tool and Alternative Approaches", World Bank Policy Research Working Paper No. 7793, hdl.handle.net/10986/25038, retrieved 30 December 2017.

Friedman, Jerome H. (1997) "On Bias, Variance, 0–1 Loss, and the Curse-of-Dimensionality", *Data Mining and Knowledge Discovery*, Vol. 1, pp. 55–77.

Fuller, Rob. (2006) "Measuring the Poverty of Microfinance Clients in Haiti", microfinance.com/English/Papers/Scoring_Poverty_Haiti_Fuller.pdf, retrieved 30 December 2017.

Goodman, Leo A.; and Kruskal, William H. (1979) *Measures of Association for Cross Classification*.

Grosh, Margaret; and Judy L. Baker. (1995) "Proxy-Means Tests for Targeting Social Programs: Simulations and Speculation", World Bank LSMS Working Paper No. 118, go.worldbank.org/W9OWN57PD0, retrieved 30 December 2017.

Hand, David J. (2006) "Classifier Technology and the Illusion of Progress", *Statistical Science*, Vol. 22, No. 1, pp. 1–15.

Haslett, Stephen. (2012) "Practical Guidelines for the Design and Analysis of Sample Surveys for Small-Area Estimation", *Journal of the Indian Society of Agricultural Statistics*, Vol. 66, No. 1, pp. 203–212.

Hoadley, Bruce; and Robert M. Oliver. (1998) "Business Measures of Scorecard Benefit", *IMA Journal of Mathematics Applied in Business and Industry*, Vol. 9, pp. 55–64.

Institut National de la Statistique. (2014) "Résultats de l'Enquête sur l'Emploi, le Secteur Informel, et sur la Consommation des Ménages, 2012", www.ins-rdc.org/sites/default/files/Rapport%20enquete%20123.pdf, retrieved 30 December 2017.

IRIS Center. (2007a) "Manual for the Implementation of USAID Poverty Assessment Tools", povertytools.org/training_documents/Manuals/USAID_PAT_Manual_Eng.pdf, retrieved 30 December 2017.

_____. (2007b) "Introduction to Sampling for the Implementation of PATs", povertytools.org/training_documents/Sampling/Introduction_Sampling.ppt, retrieved 30 December 2017.

_____. (2005) "Notes on Assessment and Improvement of Tool Accuracy", povertytools.org/other_documents/AssessingImproving_Accuracy.pdf, retrieved 30 December 2017.

Johnson, Glenn. (2007) "Lesson 3: Two-Way Tables—Dependent Samples", onlinecourses.science.psu.edu/stat504/node/96, retrieved 30 December 2017.

Jolliffe, Dean; and Espen Beer Prydz. (2016) "Estimating International Poverty Lines from Comparable National Thresholds", *Journal of Economic Inequality*, Vol. 14, pp. 185–198.

Kolesar, Peter; and Janet L. Showers. (1985) "A Robust Credit-Screening Model Using Categorical Data", *Management Science*, Vol. 31, No. 2, pp. 124–133.

Lovie, Alexander D.; and Patricia Lovie. (1986) "The Flat-Maximum Effect and Linear Scoring Models for Prediction", *Journal of Forecasting*, Vol. 5, pp. 159–168.

Martinelli, César; and Susan W. Parker. (2007) "Deception and Misreporting in a Social Program", *Journal of the European Economic Association*, Vol. 4, No. 6, pp. 886–908.

Matul, Michal; and Sean Kline. (2003) "Scoring Change: Prizma's Approach to Assessing Poverty", Microfinance Centre for Central and Eastern Europe and the New Independent States Spotlight Note No. 4, mfc.org.pl/wp-content/uploads/2016/04/spotlight4.pdf, retrieved 30 December 2017.

McNemar, Quinn. (1947) "Note on the Sampling Error of the Difference between Correlated Proportions or Percentages", *Psychometrika*, Vol. 17, pp. 153–157.

Myers, James H.; and Edward W. Forgy. (1963) "The Development of Numerical Credit-Evaluation Systems", *Journal of the American Statistical Association*, Vol. 58, No. 303, pp. 779–806.

Narayan, Ambar; and Nobuo Yoshida. (2005) "Proxy-Means Tests for Targeting Welfare Benefits in Sri Lanka", World Bank Report No. SASPR–7, documents.worldbank.org/curated/en/2005/07/6209268/proxy-means-test-targeting-welfare-benefits-sri-lanka, retrieved 30 December 2017.

Onwujekwe, Obinna; Hanson, Kara; and Julia Fox-Rushby. (2006) "Some Indicators of Socio-Economic Status May Not Be Reliable and Use of Indexes with These Data Could Worsen Equity", *Health Economics*, Vol. 15, pp. 639–644.

Rutstein, Shea Oscar; and Kiersten Johnson. (2004) "The DHS Wealth Index", DHS Comparative Reports No. 6, measuredhs.com/pubs/pdf/CR6/CR6.pdf, retrieved 30 December 2017.

SAS Institute Inc. (2004) "The LOGISTIC Procedure: Rank Correlation of Observed Responses and Predicted Probabilities", *SAS/STAT User's Guide, Version 9*, support.sas.com/documentation/cdl/en/statug/63033/HTML/default/viewer.htm#statug_logistic_sect035.htm, retrieved 30 December 2017.

Schreiner, Mark. (forthcoming) "How Accurate is the Scorocs Simple Poverty Scorecard Tool for Sub-National Groups?"

_____. (2017a) "Scorocs Simple Poverty Scorecard Tool: Zambia", SimplePovertyScorecard.com/ZMB_2015_ENG.pdf, retrieved 30 December 2017.

_____. (2017b) "Scorocs Simple Poverty Scorecard Tool: Mexico", SimplePovertyScorecard.com/MEX_2014_ENG.pdf, retrieved 30 December 2017.

_____. (2017c) "Scorocs Simple Poverty Scorecard Tool: El Salvador", SimplePovertyScorecard.com/SLV_2014_ENG.pdf, retrieved 30 December 2017.

_____. (2017d) "Comments on Brown, Ravallion, and van der Walle's 'A Poor Means Test? Econometric Targeting in Africa'".

_____. (2016a) "Scorocs Simple Poverty Scorecard Tool: Guatemala", SimplePovertyScorecard.com/GTM_2014_ENG.pdf, retrieved 30 December 2017.

_____. (2016b) "Scorocs Simple Poverty Scorecard Tool: India", SimplePovertyScorecard.com/IND_2011_ENG.pdf, retrieved 30 December 2017.

_____. (2016c) "Scorocs Simple Poverty Scorecard Tool: Sri Lanka", SimplePovertyScorecard.com/LKA_2012_ENG.pdf, retrieved 30 December 2017.

_____. (2016d) "Scorocs Simple Poverty Scorecard Tool: Cameroon", SimplePovertyScorecard.com/CMR_2014_ENG.pdf, retrieved 30 December 2017.

_____. (2015a) "There's No Place Like Home? How the Interview Method Affects Results with the Progress out of Poverty Index®", microfinance.com/English/Papers/Scoring_Poverty_Interview_Method_Effects_EN.pdf, retrieved 30 December 2017.

_____. (2015b) "Scorocs Simple Poverty Scorecard Tool: Ghana", SimplePovertyScorecard.com/GHA_2012_ENG.pdf, retrieved 30 December 2017.

_____. (2015c) "Scorocs Simple Poverty Scorecard Tool: Bolivia", SimplePovertyScorecard.com/BOL_2013_ENG.pdf, retrieved 30 December 2017.

_____. (2015d) "Scorocs Simple Poverty Scorecard Tool: Malawi", SimplePovertyScorecard.com/MWI_2010_ENG.pdf, retrieved 30 December 2017.

_____. (2015e) "Scorocs Simple Poverty Scorecard Tool: Cambodia", SimplePovertyScorecard.com/KHM_2011_ENG.pdf, retrieved 30 December 2017.

_____. (2014a) "The Process of Poverty-Scoring Analysis", SimplePovertyScorecard.com/Process_Poverty_Scoring_Analysis.pdf, retrieved 30 December 2017.

_____. (2014b) "How Do the Simple Poverty Scorecard and the PAT Differ?", microfinance.com/English/Papers/Scorecard_versus_PAT.pdf, retrieved 30 December 2017.

_____. (2013a) "Scorocs Simple Poverty Scorecard Tool: Bangladesh", SimplePovertyScorecard.com/BGD_2010_ENG.pdf, retrieved 30 December 2017.

_____. (2013b) "Scorocs Simple Poverty Scorecard Tool: Nicaragua", SimplePovertyScorecard.com/NIC_2009_ENG.pdf, retrieved 30 December 2017.

_____. (2012a) "An Expert-Based Poverty Scorecard for Rural China", microfinance.com/English/Papers/Scoring_Poverty_China_EN.pdf, retrieved 30 December 2017.

_____. (2012b) "Scorocs Simple Poverty Scorecard Tool: Colombia", SimplePovertyScorecard.com/COL_2009_ENG.pdf, retrieved 30 December 2017.

_____. (2012c) "Scorocs Simple Poverty Scorecard Tool: Peru", SimplePovertyScorecard.com/PER_2010_ENG.pdf, retrieved 30 December 2017.

_____. (2010) "Scorocs Simple Poverty Scorecard Tool: Honduras", SimplePovertyScorecard.com/HND_2007_ENG.pdf, retrieved 30 December 2017.

_____. (2009a) "Scorocs Simple Poverty Scorecard Tool: Philippines", SimplePovertyScorecard.com/PHL_2004_ENG.pdf, retrieved 30 December 2017.

_____. (2009b) "Scorocs Simple Poverty Scorecard Tool: Pakistan", SimplePovertyScorecard.com/PAK_2005_ENG.pdf, retrieved 30 December 2017.

_____. (2009c) "Scorocs Simple Poverty Scorecard Tool: Peru", SimplePovertyScorecard.com/PER_2007_ENG.pdf, retrieved 30 December 2017.

_____. (2008) "Scorocs Simple Poverty Scorecard Tool: Peru", SimplePovertyScorecard.com/PER_2003_ENG.pdf, retrieved 30 December 2017.

_____. (2006) "Is One Simple Poverty Scorecard Enough for India?", microfinance.com/English/Papers/Scoring_Poverty_India_Segments.pdf, retrieved 30 December 2017.

_____. (2005a) "La Herramienta del Índice de Calificación de la Pobreza de Scorocs™: México", SimplePovertyScorecard.com/MEX_2002_SPA.pdf, retrieved 30 December 2017.

_____. (2005b) "IRIS Questions on the Simple Poverty Scorecard", microfinance.com/English/Papers/Scoring_Poverty_Response_to_IRIS.pdf, retrieved 30 December 2017.

_____. (2002) *Scoring: The Next Breakthrough in Microfinance?* CGAP Occasional Paper No. 7, microfinance.com/English/Papers/Scoring_Breakthrough_CGAP.pdf, retrieved 30 December 2017.

_____; Matul, Michal; Pawlak, Ewa; and Sean Kline. (2014) "Poverty Scoring: Lessons from a Microlender in Bosnia-Herzegovina", *Poverty and Public Policy*, Vol. 6, No. 4, pp. 407–428.

Sharif, Iffath Anwar. (2009) "Building a Targeting System for Bangladesh Based on Proxy-Means Testing", World Bank Social Protection Discussion Paper No. 0914, siteresources.worldbank.org/SOCIALPROTECTION/Resources/SP-Discussion-papers/Safety-Nets-DP/0914.pdf, retrieved 30 December 2017.

Stillwell, William G.; Barron, F. Hutton; and Ward Edwards. (1983) "Evaluating Credit Applications: A Validation of Multi-Attribute Utility-Weight Elicitation Techniques", *Organizational Behavior and Human Performance*, Vol. 32, pp. 87–108.

Tarozzi, Alessandro; and Angus Deaton. (2009) "Using Census and Survey Data to Estimate Poverty and Inequality for Small Areas", *Review of Economics and Statistics*, Vol. 91, No. 4, pp. 773–792.

Toohig, Jeff. (2008) "PPI Pilot Training Guide", microfinancegateway.org/sites/default/files/mfg-en-paper-progress-out-of-poverty-index-ppi-pilot-training-mar-2008.pdf, retrieved 30 December 2017.

United States Congress. (2004) "Microenterprise Results and Accountability Act of 2004 (HR 3818 RDS)", November 20, smith4nj.com/laws/108-484.pdf, retrieved 30 December 2017.

Wainer, Howard. (1976) "Estimating Coefficients in Linear Models: It Don't Make No Nevermind", *Psychological Bulletin*, Vol. 83, pp. 223–227.

World Bank. (2013) "Shared Prosperity: A New Goal for a Changing World", May 8, worldbank.org/en/news/feature/2013/05/08/shared-prosperity-goal-for-changing-world, retrieved 30 December 2017.

_____. (2012) *Targeting Poor and Vulnerable Households in Indonesia*, documents.worldbank.org/curated/en/2012/01/15879773/targeting-poor-vulnerable-households-indonesia, retrieved 30 December 2017.

_____. (2008) "International Comparison Project: Tables of Results", siteresources.worldbank.org/ICPINT/Resources/icp-final-tables.pdf, retrieved 30 December 2017.

Zeller, Manfred. (2004) "Review of Poverty Assessment Tools", pdf.usaid.gov/pdf_docs/PNADH120.pdf, retrieved 30 December 2017.

Interview Guide

The excerpts quoted here are from:

Institut National de la Statistique. (2011) « Enquête 1–2–3 : Manuel de l'Enquêteur » [the *Manual*].

Basic interview instructions

Fill out the scorecard header and the "Back-page Worksheet" first, following the directions on the "Back-page Worksheet".

In the scorecard header, fill in the number of household members based on the list you compiled as part of the "Back-page Worksheet".

Do not directly ask the first scorecard indicator ("How many household members are there?"). Instead, fill in the appropriate answer based on the number of household members that you listed on the "Back-page Worksheet".

Do not directly ask the second scorecard indicator ("Do all household members ages 7 to 16 go to school in the current school year?"). Instead, fill in the appropriate answer based on the information that you collected on the "Back-page Worksheet".

Ask all of the other scorecard questions directly of the respondent.

General interviewing advice

Study this "Guide" carefully, and carry it with you while you work. Follow the instructions in this "Guide" (including this one).

Remember that the respondent need not be the same person as the household member who is a participant with your organization. Likewise, the "field agent" to be recorded in the scorecard header is not necessarily the same as you the enumerator who is conducting the interview. Rather, the "field agent" is the employee of the pro-poor program with whom the participant has an on-going relationship. If the program does not have such a field agent, then the relevant spaces in the scorecard header may be left blank.

Read each question word-for-word, in the order presented in the scorecard.

When you mark a response to a scorecard indicator, circle the spelled-out response option and its point value, and write the point value in the "Score" column, like this:

2. Do all household members ages 7 to 16 go to school in the current school year?	A. No	0	
	B. Yes	3	3
	C. No members 7 to 16	6	

To help to reduce transcription errors, you should circle the response option, the printed points, and the hand-written points that correspond to the response.

When an issue comes up that is not addressed here, its resolution should be left to the unaided judgment of the enumerator, as that apparently was the practice of the DRC's INS in the 2012 E123. That is, an organization using the scorecard poverty-assessment tool should not promulgate any definitions or rules (other than those in this "Guide") to be used by all its field agents. Anything not explicitly addressed in this "Guide" is to be left to the unaided judgment of each individual enumerator.

Do not read the response options to the respondent. Simply read the question, and then stop; wait for a response. If the respondent asks for clarification or otherwise hesitates or seems confused, then read the question again or provide additional assistance based on this "Guide" or as you, the enumerator, deem appropriate.

In general, you should accept the responses given by the respondent. Nevertheless, if the respondent says something—or if you see or sense something—that suggests that the response may not be accurate, that the respondent is uncertain, or that the respondent desires assistance in figuring out how to respond, then you should read the question again and provide whatever help you deem appropriate based on this "Guide".

While most indicators in the scorecard are verifiable, you do not—in general—need to verify responses. You should verify a response only if something suggests to you that the response may be inaccurate and thus that verification might improve data accuracy. For example, you might choose to verify if the respondent hesitates, seems nervous, or otherwise gives signals that he/she may be lying or be confused. Likewise, verification is probably appropriate if a child in the household or a neighbor says something that does not square with the respondent's answer. Verification is also a good idea if you can see something yourself—such as a consumer durable that the respondent avers not to possess, or a child eating in the room who has not been counted as a member of the household—that suggests that a response may be inaccurate.

In general, the application of the scorecard should mimic as closely as possible the application of the 2012 E123 by the DRC's INS. For example, interviews should take place in respondents' homesteads because the 2012 E123 took place in respondents' homesteads.

Translation:

As of this writing, the scorecard itself, the "Back-page Worksheet", and this "Guide" are available only in French and English. There are not yet professional translations to other major local languages spoken in the DRC such as Kituba, Kiswahili, Lingala, and Tshliba. Users should check scorocs.com to see what translations have been completed since this writing.

If there is not yet a professional translation to a given local language, then users should contact the author of this document for help in creating such a translation. In particular, the translation of scorecard indicators should follow as closely as possible the meaning of the original French wording in the 2012 E123 questionnaire. Likewise, the *Enumerator Manual* for the 2012 E123 was written in French, so the quoted parts of this "Guide" must be translated from the *Manual*'s original French, not from this English "Guide" here.

Who should be the respondent?

Remember that the respondent does not need to be the same person as the household member who is a participant with your organization.

The *Manual* does not indicate which household member(s) is/are to be preferred as the respondent(s).

Who is the head of the household?

Note that the head of the household may or may not be the same person who participates with your organization (although the head of the household can be that person).

According to p. 8 of the *Manual* (Phase 1), "The head of the household is the person whom the other members of the household recognize as the head.

"The head of a household must be a member of the household.

For example, "Mr. Pepé has two wives: Fifi (the first/eldest), and Mimi (the second/youngest). Each of the two wives lives in her own residence in different neighborhoods of the city. Mr. Pepé normally lives in the residence of Fifi, his first/eldest wife. Three days a week, however, he stays in the residence of Mimi, his second/youngest wife. Mr. Pepé is the head of the household in which his first/eldest wife Fifi is also a member. Mr. Pepé's second/youngest wife Mimi is the head of her own distinct household.

As another example, suppose that "Georges lives with his wife, their three children, and his younger brother in Georges' residence in Kinshasa. Georges is a civil servant, and he has been assigned to work for 12 months in Anvers. If the survey takes place during his absence, then Georges is not a member of his family's household, and thus he cannot be the head of his family's household. Instead, Georges' wife is the head of the family's household."

Advice for your work as an enumerator

According to p. 25 of the *Manual* (Phase 1), "The quality of responses depends on:

- The good will and trust that you, the enumerator, cultivate with the respondent
- Your ability to master the concepts associated with the scorecard's questions to 'translate' those concepts into a language and vocabulary that is simple and understandable for the respondent"

According to p. 26 of the *Manual* (Phase 1), "Read the questions aloud, and read them loud enough to be easily understood. Then let the respondent answer on his/her own."

Guidelines for each indicator in the scorecard

1. How many household members are there?
    A. Nine or more
    B. Eight
    C. Seven
    D. Six
    E. Five
    F. Four
    G. Three
    H. Two
    I. One

Do not ask this question directly of the respondent. Instead, mark the response based on the information you already gathered about household members on the "Back-page Worksheet".

According to pp. 6–7 of the *Manual* (Phase 1), "A *household* is a group of people—regardless of blood or marital relationships—who live in the same residence, who eat meals together, who share all or part of their income for the good of the group, and who acknowledge the authority of one household member (the 'head') when it comes to spending decisions.

"A household generally is made up of a head, his/her spouse(s), their unmarried children, and possibly other people who may or may not be related with the other household members by blood or marriage.

"A household may be made up of only one person living alone, one person with his/her children, or one person with other people who may or may not be related with the other household members.

"A person is [counted as a *member of the household*] if he/she usually lives with the household in its residence, that is, if he/she has lived there for at least six months. If a person currently living with the household has been there for less than six months but expects to remain for a total duration of at least six months, then the person is counted as a household member. For example, a student who has come to live with a household for the duration of the school year is counted as a member of the household where he/she is staying.

"A *visitor* is anyone who does not usually live with the household, that is, who has not lived there for at least six months and does not expect to stay for a total duration of at least six months. [A visitor is not a member of the household.]

"A lodger who does not eat with the household with whom he/she lodges is not a member of the household with whom he/she lodges.

"A domestic servant is a member of his/her employing household if he/she lives and/or eats meals with the employing household.

"Adult married children and their dependents make up distinct households apart from the households of their parents.

"If—as is sometimes the case in polygamous marriages—the wife does not live in the same residence as her husband, then the wife and her dependents are members of a household in which the wife is the head. The husband is considered to be the head of (and a member of) the household where he usually lives.

"If a group of unrelated, unmarried people live in the same residence but each independently provides for his/her own basic needs, then each person makes up his/her own one-person household."

2. Do all household members ages 7 to 16 go to school in the current school year?
    A. No
    B. Yes
    C. No members 7 to 16

Do not ask this question directly of the respondent. Instead, mark the response based on the information you collected about household members, their ages, and their school attendance on the "Back-page Worksheet".

When figuring out how to mark the appropriate response, keep in mind that this indicator can be viewed as a combination of two questions:

- Are there any household members ages 7 to 16?
- Do all household members ages 7 to 16 go to school in the current school year?

Mark the response on the scorecard according to the combination of responses the two questions above:

Are there any household members ages 7 to 16?	**Do all household members ages 7 to 16 go to school in the current school year?**	**Response**
No	N/A	C
Yes	No	A
No	N/A	C
Yes	Yes	B

According to p. 12 of the *Manual* (Phase 1), "This question concerns whether a person has gone to school during the current school year."

According to p. 8 of the *Manual* (Phase 1), "Record age in completed years, that is, the person's age on his/her more-recent birthday."

3. In the past week, did the male head/spouse work at least one hour?
    A. No
    B. No male head/spouse
    C. Yes

According to p. 27 of the *Manual* (Phase 1), *work* "produces goods or services—regardless of whether they are actually sold on the market—in return for a salary or payment in cash or in kind (if working for someone else for a wage or salary) or in return for profit or for use in the household's own consumption (if self-employed).

Work thus includes self-employment and the production of goods or services that may be sold or traded or that may be consumed by members of the producing household itself (such as food from a household's farm, or clothes from a household's tailor shop).

For the purposes of this question, *work* does not include chores such as caring for children, cooking meals for the household, washing clothes or dishes, or cleaning the residence.

Remember that you already know the name of the male head/spouse (and whether he exists) from compiling the "Back-page Worksheet". Thus, if there is a male head/spouse, do not mechanically ask, "In the past week, did the male head/spouse work at least one hour?". Instead, use the actual name of the male head/spouse, for example: "In the past week, did Claude work at least one hour?" If there is no male head/spouse, then mark "B. No male head/spouse" and go on to the next question.

For the purposes of the scorecard, the *male head/spouse* is defined as:

- The household head, if the head is male
- The spouse/conjugal partner of the household head, if the head is female
- Non-existent, if the head is female and if she does not have a spouse/conjugal partner who is a member of her household

Note that the head of the household may or may not be the same person who participates with your organization (although the head of the household can be that person).

According to p. 8 of the *Manual* (Phase 1), "The head of the household is the person whom the other members of the household recognize as the head.

"The head of a household must be a member of the household.

For example, "Mr. Pepé has two wives: Fifi (the first/eldest), and Mimi (the second/youngest). Each of the two wives lives in her own residence in different neighborhoods of the city. Mr. Pepé normally lives in the residence of Fifi, his first/eldest wife. Three days a week, however, he stays in the residence of Mimi, his second/youngest wife. Mr. Pepé is the head of the household in which his first/eldest wife Fifi is also a member. Mr. Pepé's second/youngest wife Mimi is the head of her own distinct household.

As another example, suppose that "Georges lives with his wife, their three children, and his younger brother in Georges' residence in Kinshasa. Georges is a civil servant, and he has been assigned to work for 12 months in Anvers. If the survey takes place during his absence, then Georges is not a member of his family's household, and thus he cannot be the head of his family's household. Instead, Georges' wife is the head of the family's household."

4. Can the (eldest) female head/spouse write a letter in some language?
    A. No
    B. No female head/spouse
    C. Yes

Remember that you already know the name of the (eldest) female head/spouse (and whether she exists) from compiling the "Back-page Worksheet". Thus, if there is a female head/spouse, do not mechanically ask, "Can the (eldest) female head/spouse write a letter in some language?". Instead, use the actual name of the (eldest) female head/spouse, for example: "Can Mariette write a letter in some language?" If there is no female head/spouse, then mark "B. No female head/spouse" and go on to the next question.

For the purposes of the scorecard, the *(oldest) female head/spouse* is defined as:

- The household head, if the head is female
- The (eldest) spouse/conjugal partner of the household head, if the head is male
- Non-existent, if the head is male and if he does not have a spouse/conjugal partner who is a member of his household

Note that the head of the household may or may not be the same person who participates with your organization (although the head of the household can be that person).

According to p. 8 of the *Manual* (Phase 1), "The head of the household is the person whom the other members of the household recognize as the head.

"The head of a household must be a member of the household.

For example, "Mr. Pepé has two wives: Fifi (the first/eldest), and Mimi (the second/youngest). Each of the two wives lives in her own residence in different neighborhoods of the city. Mr. Pepé normally lives in the residence of Fifi, his first/eldest wife. Three days a week, however, he stays in the residence of Mimi, his second/youngest wife. Mr. Pepé is the head of the household in which his first/eldest wife Fifi is also a member. Mr. Pepé's second/youngest wife Mimi is the head of her own distinct household.

As another example, suppose that "Georges lives with his wife, their three children, and his younger brother in Georges' residence in Kinshasa. Georges is a civil servant, and he has been assigned to work for 12 months in Anvers. If the survey takes place during his absence, then Georges is not a member of his family's household, and thus he cannot be the head of his family's household. Instead, Georges' wife is the head of the family's household."

5. What is the main material of the floor of the residence?
    A. Packed earth/straw, or other
    B. Concrete slab, tile, planks, or wood

The *Manual* provides no additional information about this indicator.

6. What is the main material of the walls of the residence?
    A. Mud bricks, leaves, woven reeds, or other
    B. Concrete blocks, planks, or wood
    C. Packed-earth blocks
    D. Baked or stabilized bricks, or reinforced concrete

According to p. 3 of the *Manual* (Phase 1), "Mark the response that corresponds with what the respondent reports as the main material of the walls of the residence's main building (which may differ from the material of the walls of other buildings)."

7. What is the main cooking fuel used by the household?
    A. Firewood, or other
    B. Charcoal, sawdust, or wood scraps
    C. Electricity, kerosene, or LPG

According to p. 4 of the *Manual* (Phase 1), "Mark the response corresponding with the cooking fuel that the household uses the most."

8. What is the main source of lighting used by the household?
    A. Burning wood, or other
    B. Battery-powered light, kerosene lamp (home-made or manufactured), or candles
    C. Electricity, generator, or LPG

According to p. 4 of the *Manual* (Phase 1), "Mark the response corresponding with the lighting source that the household uses the most."

9. Do household members have any beds/mattresses in good working order?
    A. No
    B. Yes

According to p. 6 of the *Manual* (Phase 1), "The beds/mattresses should be in good working order or easily repairable. Do not count any beds/mattresses that are used to produce income."

10. If any household member has agriculture land or fields, then does any household member raise any goats, pigs, sheep, cattle, poultry, rabbits, or guinea pigs?
    A. No agricultural land
    B. Ag. land, but no livestock
    C. Ag. land, and livestock

When figuring out how to mark the appropriate response, keep in mind that this indicator can be viewed as a combination of two questions:

- Do any household members have agriculture land or fields?
- Do any household members raise any goats, pigs, sheep, cattle, poultry, rabbits, or guinea pigs?

Mark the response on the scorecard according to the combination of responses the two questions above:

Do any household members have agriculture land or fields?	**Do any household members raise any goats, pigs, sheep, cattle, poultry, rabbits, or guinea pigs?**	**Response**
No	No	A
Yes	No	B
No	Yes	A
Yes	Yes	C

According to p. 4 of the *Manual* (Agriculture), "Ask whether the household farmed in the past 12 months."

According to p. 21 of the *Manual* (Agriculture), "Ask whether the household has any goats, pigs, sheep, cattle, poultry, rabbits, or guinea pigs."

Table 1 (All of DRC): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		896	1,623	2,435	3,247
	Rate	Households	9,630	17.9	52.2	74.9	85.7
	Rate	People		24.6	62.6	83.3	92.0
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	11,519	21.5	53.9	75.9	87.3
	Rate	People		28.6	64.9	84.6	93.1
All							
	Line	People		638	1,157	1,735	2,313
	Rate	Households	21,149	20.2	53.3	75.5	86.7
	Rate	People		27.0	64.0	84.1	92.7

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (All of DRC): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,649	2,639	3,299	6,598	1,600	2,695	4,632	18,274
	Rate	Households	9,630	67.7	86.1	91.0	98.5	66.2	86.4	95.8	99.9
	Rate	People		77.6	92.8	96.0	99.5	76.3	93.1	98.5	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	11,519	70.4	88.2	93.1	99.1	69.0	88.8	97.5	100.0
	Rate	People		81.1	94.3	97.0	99.8	79.8	94.6	99.2	100.0
All											
	Line	People		1,175	1,880	2,350	4,700	1,140	1,920	3,299	13,017
	Rate	Households	21,149	69.5	87.4	92.3	98.9	68.0	87.9	96.9	100.0
	Rate	People		79.7	93.7	96.6	99.7	78.5	94.1	98.9	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (All of DRC): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				$<$ 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		732	579	839	985	1,151	1,661
	Rate	Households	9,630	21.5	11.8	28.4	37.6	47.4	68.1
	Rate	People		28.9	17.0	37.0	47.3	57.5	77.9
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	11,519	25.6	15.9	32.2	41.0	50.1	70.7
	Rate	People		33.9	21.9	41.9	51.7	61.5	81.3
All									
	Line	People		521	413	598	702	820	1,183
	Rate	Households	21,149	24.2	14.5	30.9	39.8	49.2	69.8
	Rate	People		32.0	20.0	40.0	50.0	60.0	80.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kinshasa): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
				National (2012 def.)			
				Food	100%	150%	200%
Urban							
	Line	People		1,200	2,176	3,264	4,352
	Rate	Households	1,956	10.0	40.2	67.8	82.3
	Rate	People		16.1	52.9	78.4	90.5
Rural							
	Line	People		1,200	2,176	3,264	4,352
	Rate	Households	1,956	10.0	40.2	67.8	82.3
	Rate	People		16.1	52.9	78.4	90.5
All							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	831	25.6	74.4	90.6	94.9
	Rate	People		33.1	82.1	94.7	97.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kinshasa): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		2,211	3,537	4,421	8,842	2,144	3,611	6,207	24,490
	Rate	Households	1,956	58.2	81.9	88.0	98.2	56.1	82.3	94.8	99.9
	Rate	People		71.0	90.8	94.9	99.5	69.2	91.1	98.3	100.0
Rural											
	Line	People		2,211	3,537	4,421	8,842	2,144	3,611	6,207	24,490
	Rate	Households	1,956	58.2	81.9	88.0	98.2	56.1	82.3	94.8	99.9
	Rate	People		71.0	90.8	94.9	99.5	69.2	91.1	98.3	100.0
All											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	831	84.9	94.7	97.5	98.9	83.9	94.9	98.6	99.7
	Rate	People		91.8	97.1	98.9	99.5	90.9	97.2	99.2	99.9

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kinshasa): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		981	776	1,125	1,320	1,542	2,226
	Rate	Households	1,956	11.9	5.7	17.0	25.2	33.6	58.8
	Rate	People		18.7	10.0	25.4	35.5	45.0	71.5
Rural									
	Line	People		981	776	1,125	1,320	1,542	2,226
	Rate	Households	1,956	11.9	5.7	17.0	25.2	33.6	58.8
	Rate	People		18.7	10.0	25.4	35.5	45.0	71.5
All									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	831	33.4	14.1	45.6	59.0	69.8	85.0
	Rate	People		41.7	19.4	55.0	69.0	78.5	91.8

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Bandundu): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
				National (2012 def.)			
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	831	25.6	74.4	90.6	94.9
	Rate	People		33.1	82.1	94.7	97.0
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	1,415	30.3	64.8	86.3	93.9
	Rate	People		39.8	74.9	92.3	96.9
All							
	Line	People		564	1,022	1,533	2,044
	Rate	Households	2,246	29.0	67.4	87.5	94.2
	Rate	People		37.7	77.1	93.0	96.9

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Bandundu): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	831	84.9	94.7	97.5	98.9	83.9	94.9	98.6	99.7
	Rate	People		91.8	97.1	98.9	99.5	90.9	97.2	99.2	99.9
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	1,415	80.9	94.8	97.7	100.0	79.4	95.1	99.8	100.0
	Rate	People		89.2	97.9	99.1	100.0	88.2	98.1	99.9	100.0
All											
	Line	People		1,038	1,661	2,077	4,154	1,007	1,696	2,916	11,504
	Rate	Households	2,246	82.0	94.8	97.7	99.7	80.7	95.1	99.4	99.9
	Rate	People		90.0	97.7	99.1	99.8	89.0	97.8	99.7	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Bandundu): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	831	33.4	14.1	45.6	59.0	69.8	85.0
	Rate	People		41.7	19.4	55.0	69.0	78.5	91.8
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	1,415	35.5	21.9	44.0	52.7	61.6	81.2
	Rate	People		46.3	30.3	55.2	64.2	72.7	89.4
All									
	Line	People		461	365	528	620	724	1,046
	Rate	Households	2,246	34.9	19.7	44.5	54.5	63.9	82.2
	Rate	People		44.9	26.9	55.2	65.7	74.5	90.2

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Bas-Congo): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	501	2.2	29.0	58.8	76.4
	Rate	People		3.1	37.6	70.7	86.6
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	475	5.7	40.6	66.1	80.0
	Rate	People		8.9	54.3	79.5	90.1
All							
	Line	People		562	1,018	1,528	2,037
	Rate	Households	976	4.8	37.5	64.2	79.0
	Rate	People		7.1	49.3	76.9	89.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Bas-Congo): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	501	48.2	77.1	85.1	98.7	47.2	77.8	93.4	99.9
	Rate	People		59.8	87.5	93.4	99.5	58.5	88.0	97.5	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	475	60.3	80.2	88.9	98.3	57.9	81.5	94.6	100.0
	Rate	People		74.9	90.8	95.6	99.6	72.3	91.4	98.2	100.0
All											
	Line	People		1,035	1,656	2,070	4,139	1,004	1,691	2,906	11,464
	Rate	Households	976	57.1	79.4	87.9	98.4	55.1	80.5	94.3	100.0
	Rate	People		70.4	89.8	94.9	99.6	68.2	90.4	98.0	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Bas-Congo): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	501	3.3	1.7	9.0	16.5	23.0	49.2
	Rate	People		4.3	2.1	12.5	21.3	29.3	61.2
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	475	8.8	2.7	15.3	25.9	34.4	60.5
	Rate	People		13.3	4.4	22.6	36.4	47.0	75.0
All									
	Line	People		459	363	527	618	722	1,042
	Rate	Households	976	7.4	2.5	13.6	23.4	31.4	57.5
	Rate	People		10.7	3.7	19.6	31.9	41.7	70.9

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Katanga): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	1,653	14.4	40.0	62.9	77.2
	Rate	People		17.3	48.5	73.3	85.8
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	1,739	25.7	58.7	78.6	88.0
	Rate	People		32.3	69.6	87.7	94.4
All							
	Line	People		566	1,026	1,539	2,052
	Rate	Households	3,392	22.6	53.5	74.3	85.0
	Rate	People		27.6	63.0	83.2	91.7

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Katanga): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	1,653	55.9	78.6	86.3	96.6	54.4	79.0	92.6	99.9
	Rate	People		66.6	88.1	93.1	98.9	65.1	88.4	97.1	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	1,739	73.2	89.3	93.4	99.1	72.0	89.7	97.3	100.0
	Rate	People		84.5	95.8	97.8	99.8	83.4	95.9	99.2	100.0
All											
	Line	People		1,042	1,668	2,085	4,169	1,011	1,703	2,927	11,547
	Rate	Households	3,392	68.4	86.4	91.4	98.4	67.1	86.7	96.0	100.0
	Rate	People		78.8	93.4	96.3	99.5	77.7	93.6	98.6	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Katanga): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	1,653	17.3	10.2	22.6	29.3	38.3	56.6
	Rate	People		21.0	12.3	27.7	35.7	46.2	67.1
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	1,739	30.8	21.3	36.7	45.0	55.2	73.5
	Rate	People		39.1	27.1	46.1	55.2	66.6	84.7
All									
	Line	People		462	366	530	622	727	1,050
	Rate	Households	3,392	27.1	18.2	32.8	40.6	50.6	68.8
	Rate	People		33.5	22.5	40.3	49.1	60.2	79.2

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kasaï Occidental): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	740	33.5	75.0	89.8	95.7
	Rate	People		42.4	84.0	94.7	98.2
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	1,181	31.2	61.6	81.5	90.4
	Rate	People		40.0	72.6	90.1	95.8
All							
	Line	People		563	1,020	1,530	2,040
	Rate	Households	1,921	31.8	65.2	83.7	91.8
	Rate	People		40.8	76.0	91.5	96.5

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kasaï Occidental): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	740	86.5	96.7	98.7	100.0	85.8	96.7	99.7	100.0
	Rate	People		92.5	98.8	99.6	100.0	91.9	98.8	99.9	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	1,181	76.4	91.6	94.7	99.7	74.7	91.8	98.9	100.0
	Rate	People		87.2	97.0	98.4	99.9	85.9	97.0	99.7	100.0
All											
	Line	People		1,036	1,658	2,072	4,145	1,005	1,693	2,910	11,480
	Rate	Households	1,921	79.1	93.0	95.7	99.8	77.6	93.1	99.1	100.0
	Rate	People		88.8	97.5	98.7	99.9	87.7	97.6	99.7	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kasaï Occidental): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	740	38.7	24.6	48.8	59.9	71.1	86.5
	Rate	People		48.4	32.6	58.4	69.1	80.3	92.5
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	1,181	34.0	24.8	41.0	49.7	57.8	76.7
	Rate	People		43.5	33.2	51.2	60.7	69.4	87.5
All									
	Line	People		460	364	527	619	723	1,044
	Rate	Households	1,921	35.3	24.8	43.1	52.4	61.4	79.3
	Rate	People		45.0	33.0	53.4	63.3	72.7	89.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kasaï Oriental): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	744	16.7	49.6	79.3	88.1
	Rate	People		24.2	59.7	87.1	93.7
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	1,144	37.4	71.7	85.9	93.5
	Rate	People		46.9	80.8	92.2	97.3
All							
	Line	People		560	1,015	1,522	2,030
	Rate	Households	1,888	31.2	65.1	83.9	91.9
	Rate	People		40.3	74.6	90.7	96.3

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kasaï Oriental): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	744	72.6	88.7	92.5	99.8	71.4	89.8	97.8	100.0
	Rate	People		81.5	94.5	96.3	100.0	80.5	95.3	99.5	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	1,144	82.6	94.5	96.5	99.6	81.7	95.0	99.3	100.0
	Rate	People		90.2	98.1	99.0	99.9	89.4	98.4	99.9	100.0
All											
	Line	People		1,031	1,650	2,062	4,125	1,000	1,685	2,895	11,424
	Rate	Households	1,888	79.7	92.8	95.3	99.6	78.6	93.4	98.8	100.0
	Rate	People		87.6	97.1	98.2	99.9	86.8	97.5	99.7	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Kasaï Oriental): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	744	20.9	10.9	27.7	35.1	48.6	72.6
	Rate	People		29.4	16.2	37.5	45.2	59.6	81.5
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	1,144	44.4	29.8	51.1	60.2	69.1	82.8
	Rate	People		54.2	38.6	61.2	70.4	78.2	90.3
All									
	Line	People		458	362	525	616	719	1,039
	Rate	Households	1,888	37.4	24.2	44.1	52.7	63.0	79.8
	Rate	People		47.0	32.0	54.2	63.0	72.8	87.7

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Équateur): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	1,182	36.0	74.7	88.9	93.5
	Rate	People		45.0	82.1	94.3	97.3
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	2,377	29.1	63.5	84.7	91.8
	Rate	People		38.1	74.0	91.1	95.6
All							
	Line	People		564	1,021	1,532	2,043
	Rate	Households	3,559	31.0	66.7	85.9	92.3
	Rate	People		40.2	76.4	92.1	96.1

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Équateur): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	1,182	83.2	93.4	96.1	99.5	82.3	93.6	97.7	100.0
	Rate	People		89.0	97.5	98.9	99.9	88.1	97.7	99.4	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	2,377	79.0	92.7	95.4	99.6	77.6	92.8	98.7	100.0
	Rate	People		87.6	96.4	98.0	99.8	86.4	96.5	99.5	100.0
All											
	Line	People		1,038	1,660	2,076	4,151	1,007	1,695	2,914	11,497
	Rate	Households	3,559	80.2	92.9	95.6	99.5	78.9	93.0	98.4	100.0
	Rate	People		88.0	96.8	98.3	99.9	86.9	96.8	99.5	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Équateur): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	1,182	41.5	25.2	49.2	58.3	70.3	83.3
	Rate	People		50.3	34.6	58.1	67.7	78.1	89.0
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	2,377	34.1	21.2	41.5	50.5	58.9	79.5
	Rate	People		44.3	28.7	53.0	62.7	70.5	87.9
All									
	Line	People		460	364	528	620	724	1,045
	Rate	Households	3,559	36.2	22.3	43.7	52.7	62.1	80.5
	Rate	People		46.1	30.5	54.6	64.2	72.8	88.3

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Nord-Kivu): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	732	23.0	60.7	78.1	85.1
	Rate	People		30.7	69.3	84.1	89.5
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	475	5.6	31.2	56.9	76.2
	Rate	People		8.2	40.0	65.7	82.8
All							
	Line	People		564	1,022	1,533	2,045
	Rate	Households	1,207	10.8	39.9	63.1	78.9
	Rate	People		15.1	49.0	71.3	84.9

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Nord-Kivu): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	732	72.3	86.2	90.5	98.2	71.0	86.6	96.5	99.7
	Rate	People		79.4	90.7	94.3	99.3	78.2	91.4	98.2	99.7
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	475	51.0	77.9	87.4	98.8	50.0	79.1	95.1	100.0
	Rate	People		60.5	85.4	93.0	99.7	59.2	86.5	98.2	100.0
All											
	Line	People		1,039	1,662	2,077	4,155	1,008	1,697	2,917	11,507
	Rate	Households	1,207	57.3	80.4	88.3	98.6	56.2	81.4	95.5	99.9
	Rate	People		66.3	87.0	93.4	99.5	65.0	88.0	98.2	99.9

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Nord-Kivu): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	732	27.1	16.1	36.5	46.3	54.6	72.3
	Rate	People		35.4	22.7	46.1	55.2	63.8	79.4
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	475	8.0	3.2	11.4	18.4	27.9	51.3
	Rate	People		11.1	5.0	16.0	25.0	36.2	60.7
All									
	Line	People		461	365	529	620	725	1,046
	Rate	Households	1,207	13.7	7.0	18.8	26.6	35.8	57.5
	Rate	People		18.5	10.5	25.2	34.3	44.7	66.4

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Sud-Kivu): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
					National (2012 def.)		
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	323	36.8	77.3	90.4	96.4
	Rate	People		40.7	83.7	94.0	98.5
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	458	10.9	47.6	71.7	86.6
	Rate	People		13.2	53.8	77.1	89.9
All							
	Line	People		564	1,022	1,533	2,043
	Rate	Households	781	17.8	55.6	76.7	89.2
	Rate	People		21.6	62.9	82.3	92.5

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Sud-Kivu): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	323	88.8	96.9	98.0	99.8	87.6	97.1	98.3	100.0
	Rate	People		92.7	99.1	99.4	99.9	91.9	99.1	99.6	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	458	67.5	87.6	92.5	98.9	66.2	88.3	98.0	100.0
	Rate	People		73.5	91.0	94.7	99.6	72.4	91.6	99.3	100.0
All											
	Line	People		1,038	1,661	2,076	4,152	1,007	1,696	2,915	11,500
	Rate	Households	781	73.2	90.1	94.0	99.1	72.0	90.7	98.1	100.0
	Rate	People		79.4	93.4	96.2	99.7	78.4	93.9	99.4	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Sud-Kivu): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	323	44.3	25.1	50.4	63.3	75.3	88.8
	Rate	People		49.2	26.3	56.8	70.3	80.9	92.7
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	458	14.3	6.2	21.5	31.9	43.2	67.7
	Rate	People		17.7	8.6	26.1	36.5	49.2	73.9
All									
	Line	People		461	364	528	620	724	1,045
	Rate	Households	781	22.3	11.3	29.3	40.3	51.8	73.4
	Rate	People		27.3	14.0	35.5	46.8	58.9	79.6

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Maniema): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
				National (2012 def.)			
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	185	10.6	32.9	70.7	81.0
	Rate	People		20.1	45.0	82.4	90.1
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	404	15.8	59.7	85.7	94.9
	Rate	People		24.7	69.7	90.7	96.8
All							
	Line	People		547	992	1,488	1,985
	Rate	Households	589	14.4	52.6	81.7	91.2
	Rate	People		23.6	63.6	88.7	95.1

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Maniema): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	185	60.1	84.7	89.8	96.1	58.9	85.0	94.1	100.0
	Rate	People		73.6	93.2	97.0	99.3	72.8	93.4	98.6	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	404	80.1	94.8	99.2	100.0	79.3	96.0	100.0	100.0
	Rate	People		87.2	97.7	99.7	100.0	86.8	98.4	100.0	100.0
All											
	Line	People		1,008	1,613	2,016	4,033	978	1,647	2,831	11,169
	Rate	Households	589	74.8	92.1	96.7	99.0	73.9	93.1	98.4	100.0
	Rate	People		83.8	96.6	99.0	99.8	83.3	97.2	99.6	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Maniema): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	185	14.6	7.8	18.6	22.6	28.6	60.9
	Rate	People		24.4	16.0	29.5	33.6	41.2	74.2
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	404	20.0	7.7	32.6	48.9	58.2	80.6
	Rate	People		28.8	12.9	43.8	60.3	69.5	87.6
All									
	Line	People		447	354	513	602	703	1,015
	Rate	Households	589	18.6	7.7	28.9	41.9	50.4	75.4
	Rate	People		27.7	13.7	40.2	53.7	62.5	84.3

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Orientale): National poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)			
				National (2012 def.)			
				Food	100%	150%	200%
Urban							
	Line	People		761	1,379	2,068	2,758
	Rate	Households	783	12.0	50.3	72.7	84.0
	Rate	People		18.9	59.9	79.2	90.0
Rural							
	Line	People		477	865	1,297	1,729
	Rate	Households	1,851	13.4	40.7	65.6	81.9
	Rate	People		19.6	53.5	77.0	90.5
All							
	Line	People		562	1,018	1,527	2,035
	Rate	Households	2,634	13.1	43.1	67.4	82.4
	Rate	People		19.4	55.4	77.7	90.3

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-adult-equivalent per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Orientale): International 2005 and 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
				$1.25	$2.00	$2.50	$5.00	$1.90	$3.20	$5.50	$21.70
Urban											
	Line	People		1,401	2,242	2,802	5,604	1,359	2,289	3,934	15,521
	Rate	Households	783	66.2	84.7	90.2	98.2	65.0	85.1	94.8	100.0
	Rate	People		74.0	91.6	94.8	99.3	72.7	91.8	97.7	100.0
Rural											
	Line	People		878	1,406	1,757	3,514	852	1,435	2,467	9,732
	Rate	Households	1,851	58.4	81.9	88.9	98.1	56.5	82.5	95.2	100.0
	Rate	People		73.0	91.7	95.4	99.4	71.2	92.0	98.3	100.0
All											
	Line	People		1,034	1,654	2,068	4,136	1,003	1,689	2,903	11,455
	Rate	Households	2,634	60.4	82.6	89.3	98.2	58.7	83.2	95.1	100.0
	Rate	People		73.3	91.6	95.2	99.4	71.6	91.9	98.1	100.0

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 1 (Orientale): Relative and percentile-based poverty lines and poverty rates for households and people by urban/rural/all in 2012

Area	Line or Rate	Households or People	n	Poverty lines and poverty rates (%)					
				Poorest 1/2	Percentile-based lines (2012 def.)				
				< 100% Natl.	20th	40th	50th	60th	80th
Urban									
	Line	People		622	492	713	836	977	1,411
	Rate	Households	783	13.7	8.9	21.6	32.3	44.4	66.4
	Rate	People		21.3	14.5	28.7	41.3	53.5	74.1
Rural									
	Line	People		390	308	447	525	613	885
	Rate	Households	1,851	16.6	9.0	21.9	28.7	37.0	58.6
	Rate	People		24.6	13.4	31.9	40.5	50.4	73.1
All									
	Line	People		459	363	526	617	721	1,041
	Rate	Households	2,634	15.8	9.0	21.8	29.6	38.9	60.5
	Rate	People		23.6	13.7	30.9	40.8	51.3	73.4

Source: 2012 E123

Poverty rates are percentages.

Poverty lines are CDF per-person per-day.

Poverty lines are CDF in prices in Kinshasa on average from Sept. 2012 to March 2013.

Table 2: Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
1,546	How many household members are there? (Nine or more; Eight; Seven; Six; Five; Four; Three; Two; One)
1,248	How many household members are 18-years-old or younger? (Six or more; Five; Four; Three; Two; One; None)
1,221	How many household members are 17-years-old or younger? (Six or more; Five; Four; Three; Two; One; None)
1,183	How many household members are 16-years-old or younger? (Five or more; Four; Three; Two; One; None)
1,143	How many household members are 15-years-old or younger? (Five or more; Four; Three; Two; One; None)
1,084	How many household members are 14-years-old or younger? (Five or more; Four; Three; Two; One; None)
1,035	How many household members are 13-years-old or younger? (Five or more; Four; Three; Two; One; None)
936	How many household members are 12-years-old or younger? (Five or more; Four; Three; Two; One; None)
849	How many household members are 11-years-old or younger? (Four or more; Three; Two; One; None)
798	Do all household members ages 7 to 15 go to school in the current school year? (No; Yes; No members 7 to 15)
796	Do all household members ages 7 to 16 go to school in the current school year? (No; Yes; No members 7 to 16)
779	Do all household members ages 7 to 14 go to school in the current school year? (No; Yes; No members 7 to 14)
754	Do all household members ages 7 to 17 go to school in the current school year? (No; Yes; No members 7 to 17)
749	Do all household members ages 7 to 13 go to school in the current school year? (No; Yes; No members 7 to 13)
729	Do all household members ages 7 to 18 go to school in the current school year? (No; Yes; No members 7 to 18)
673	Do all household members ages 7 to 12 go to school in the current school year? (No; Yes; No members 7 to 12)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
634	Do all household members ages 7 to 11 go to school in the current school year? (No; Yes; No members 7 to 11)
461	What is the highest level (and grade in that level) in school which the (eldest) female/head spouse has successfully completed? (None, non-formal program, or other; Primary, grades 1 to 6; Secondary, grades 1 to 5; Secondary, grade 6; No female head/spouse; College, post-graduate, or professional (INPP), any year)
456	How many household members are 6-years-old or younger? (Three or more; Two; One; None)
395	If the (eldest) female head/spouse worked for at least one hour in the past week, then what was her status in her main occupation? (Worker in a family business, or apprentice; Self-employed with no paid employees, business owner with paid employees, or manual laborer; Does not work; Senior executive, middle manager or supervisor, front-line manager, skilled employee or worker, or semi-skilled employee or worker; No female head/spouse)
394	If the (eldest) female head/spouse worked for at least one hour in the past week, then how was she paid, or how did she receive income, in her main occupation? (Is not remunerated, or by the job; In kind (products, meals, lodging, and so on); Business profits; Does not work; Set salary (monthly, bimonthly, or weekly), By the days or hours worked, or by commission; No female head/spouse)
362	Does the household head have a spouse/conjugal partner? (Yes; Male head without a spouse/conjugal partner; Female head without a spouse/conjugal partner)
323	Can the (eldest) female head/spouse write a letter in some language? (No; No female head/spouse; Yes)
321	In the past week, how many household members worked at least one hour? (None; One; Two; Three or more)
306	In the past week, did the (eldest) female head/spouse work at least one hour? (Yes; No; No female head/spouse)
268	How does the household dispose of its garbage? (Other; Buried; Dumped in ditch; Burned; Unauthorized dump; Composted; Dumped in surface water; Public or private trash service)
262	Does any household member have a VCR, DVD, or satellite dish in good working order? (No; Yes)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
262	What is the highest level (and grade in that level) in school which the male/head spouse has successfully completed? (None, non-formal program, or other; Primary, grades 1 to 5; Primary, grade 6, or secondary, grade 1; Secondary, grades 2 to 4; Secondary, graded 5 or 6; No male head/spouse; College, post-graduate, or professional (INPP), any year)
261	What is the main cooking fuel used by the household? (Firewood, or other; Charcoal, sawdust, or wood scraps; Electricity, kerosene, or LPG)
258	What is the main source of lighting used by the household? (Burning wood, or other; Battery-powered light, kerosene lamp (home-made or manufactured), or candles; Electricity, generator, or LPG)
254	Does any household member have a refrigerator or freezer in good working order? (No; Yes)
245	Does any household member have a TV in good working order? (No; Yes)
236	Among the household members who worked for at least one hour in the past week, how many in their main occupation were self-employed? (None; One; Two; Three or more)
228	What is the main material of the floor of the residence? (Packed earth/straw, or other; Concrete slab, tile, planks, or wood)
211	What is the main material of the walls of the residence? (Mud bricks, leaves, woven reeds, or other; Concrete blocks, planks, or wood; Packed-earth blocks; Baked or stabilized bricks, or reinforced concrete)
211	What is the main toilet arrangement used by the household? (None, hole in the yard/plot, or other; Public improved latrine; Private improved latrine; Flush toilet shared with other households, private flush toilet outside the residence, or private flush toilet inside the residence)
206	Among the household members who worked for at least one hour in the past week, how many in their main occupation were paid by the days or hours worked, by the job, on commission, in kind (products, meals, lodging, and so on), or were not remunerated? (Two or more; One; None)
196	Does any household member have a hot plate, toaster oven, oven, electric stove, gas stove, or improved wood cookstove in good working order? (No; Yes)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
167	What type of residence does the household live in? (Traditional detached house; Various unconnected buildings; Townhouse (ONL type), or other; Detached modern house on its own lot, studio apartment, apartment, or villa)
160	What is the main material of the roof of the residence? (Thatch/straw, or tile; Salvaged metal sheets; Galvanized metal sheets, corrugated asbesto sheets, slate, cement slab, or other)
157	If any member of the household has agriculture land or fields, then does any member have a storage bin? (Farmland, and bin; No farmland; Farmland, but no bin)
152	If the male head/spouse worked for at least one hour in the past week, then what was his status in his main occupation? (Worker in a family business; Does not work; Self-employed with no paid employees, business owner with paid employees, apprentice, or manual laborer; Skilled employee or worker, front-line manager, semi-skilled employee or worker, middle manager or supervisor, or senior executive; No male head/spouse)
137	If the male head/spouse worked for at least one hour in the past week, then how was he paid, or how did he receive income, in his main occupation? (Business profits, in kind (products, meals, lodging, and so on), by the job, or is not remunerated; Does not work; Set salary (monthly, bimonthly, or weekly), by the days or hours worked, or on commission; No male head/spouse)
135	What is the main source of drinking water for the household? (Protected well; Borewell, or public standpipe; Unprotected spring, surface water, or other; Faucet of another household, or protected spring; Unprotected well, faucet outside the residence, or faucet inside the residence)
135	If any member of the household has agriculture land or fields, then does any member have a mortar and pestle or a storage bin? (No farmland; Farmland, but no bin nor mortar and pestle; Farmland, and bin or mortar and pestle)
135	If any member of the household has agriculture land or fields, then does any member use a morter and pestle? (No farmland; Farmland, but no mortar and pestle; Farmland, and mortar and pestle)
134	If any household member has agriculture land or fields, then does any household member raise any goats, pigs, sheep, cattle, poultry, rabbits, or guinea pigs? (No agricultural land; Ag. land, but no livestock; Ag. land, and livestock)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
134	Does any member of the household have farmland? (Yes; No)
125	How many cell phones do members of the household have in good working order? (None; One; Two or more)
104	What is the household's tenancy status in its residence? (Owner, housed for free by a someone outside the household, or other; Housed on a plot possessed by the family; Renter, housed by employer, or rent-to-own)
71	Does any household member have a dresser, wardrobe, desk, or dining-room set in good working order? (No; Yes)
58	Can the male head/spouse write a letter in some language? (No; Yes; No male head/spouse)
56	Does any household member have a calculator or a microcomputer in good working order? (No; Yes)
56	How many bedrooms does the household have? (One; Two; Three or more)
55	How many rooms does the residence have (bedrooms, living rooms, and dining rooms)? (One; Two; Three; Four or more)
54	In the past week, did the male head/spouse work at least one hour? (No; No male head/spouse; Yes)
51	Does any household member have a plain radio/radio cassette or a radio-tape player in good working order? (No; Yes)
48	Among the household members who worked for at least one hour in the past week, were any in their main occupation paid a fixed salary or wage (monthly, bimonthly, or weekly)? (No; Yes)
46	Do household members have any beds/mattresses in good working order? (No; Yes)
41	Among the household members who worked for at least one hour in the past week, were any in their main occupation a senior executive, middle manager, front-line manager/supervisor, an employee/laborer (skilled or semi-skilled), or a business owner with paid employees? (No; Yes)
41	Do any members of the household have a residence in good working order? (No; Yes)
30	Does any household member raise any goats, pigs, sheep, cattle, poultry or rabbits/guinea pigs? (No; Yes)
29	Does any household member have a radio-tape player in good working order? (No; Yes)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
23	Does any household member raise any poultry or rabbits/guinea pigs? (No; Yes)
22	Does any household member have a plain radio/radio cassette in good working order? (No; Yes)
22	Does any household member raise any goats, pigs, sheep, or cattle? (No; Yes)
18	Does any household member have a floor lamp in good working order? (No; Yes)
13	How many tables do members of the household have in good working order? (None; One; Two or more)
7	How many chairs do members of the household have in good working order? (One; Two; Three; Four; Five or more)
6	Does any household member have a bicycle, motorcycle/moped, truck, or private car (not a company car) in good working order? (No; Yes)
0	Do any household members have a mosquito net? (No; Yes)

Source: 2012 E123 with 100% of the national poverty line

Tables for
100% of the National Poverty Line

(and Tables Pertaining
to All Poverty Lines)

Table 3 (100% of the national line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	92.3
18–21	85.4
22–24	83.1
25–27	80.1
28–29	78.3
30–31	75.5
32–33	71.7
34–35	66.6
36–37	64.4
38–39	58.4
40–41	53.9
42–43	51.0
44–45	43.2
46–47	37.0
48–50	31.3
51–54	24.2
55–58	21.8
59–62	14.2
63–68	11.5
69–100	2.3

Table 4 (100% of the national line): Derivation of estimated poverty likelihoods

Score	Households in range and < poverty line		All households in range		Poverty likelihood (%)
0–17	7,060	÷	7,652	=	92.3
18–21	6,879	÷	8,058	=	85.4
22–24	6,629	÷	7,978	=	83.1
25–27	7,172	÷	8,949	=	80.1
28–29	5,366	÷	6,851	=	78.3
30–31	5,126	÷	6,785	=	75.5
32–33	5,669	÷	7,911	=	71.7
34–35	5,560	÷	8,348	=	66.6
36–37	5,497	÷	8,538	=	64.4
38–39	4,770	÷	8,162	=	58.4
40–41	4,157	÷	7,715	=	53.9
42–43	3,393	÷	6,659	=	51.0
44–45	2,827	÷	6,549	=	43.2
46–47	2,377	÷	6,424	=	37.0
48–50	2,109	÷	6,733	=	31.3
51–54	2,040	÷	8,414	=	24.2
55–58	1,609	÷	7,381	=	21.8
59–62	977	÷	6,901	=	14.2
63–68	843	÷	7,316	=	11.5
69–100	162	÷	7,116	=	2.3

Number of all households normalized to sum to 100,000.

Table 5 (100% of the national line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+2.4	2.2	2.7	3.6
18–21	+0.4	2.5	3.1	4.1
22–24	+11.1	4.1	4.8	6.1
25–27	+2.4	2.4	2.9	4.1
28–29	+11.3	4.6	5.2	7.4
30–31	–4.3	3.5	3.8	4.4
32–33	+2.1	3.3	3.9	5.1
34–35	+2.3	3.1	3.9	5.0
36–37	+3.9	3.7	4.6	5.9
38–39	+8.8	4.0	4.9	6.4
40–41	+1.0	3.5	4.0	5.0
42–43	+15.8	3.3	3.9	5.0
44–45	–13.2	8.8	9.1	9.8
46–47	–4.0	4.1	4.9	6.5
48–50	+5.0	2.9	3.5	4.8
51–54	–0.2	3.0	3.5	4.7
55–58	+3.4	2.6	3.2	4.1
59–62	+2.3	2.4	2.8	3.7
63–68	+5.3	1.4	1.6	2.1
69–100	+0.3	0.8	1.0	1.2

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (100% of the national line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.4	70.7	79.4	86.3
4	+1.9	40.9	49.8	59.4
8	+2.0	32.7	37.6	46.4
16	+2.0	23.1	28.6	38.0
32	+2.7	16.7	19.8	25.8
64	+2.8	12.2	14.3	18.8
128	+2.9	8.4	10.1	13.5
256	+3.0	6.0	6.9	9.0
512	+3.1	4.3	5.0	6.5
1,024	+3.1	3.0	3.6	4.7
2,048	+3.1	2.2	2.6	3.4
4,096	+3.1	1.6	1.9	2.6
8,192	+3.1	1.1	1.3	1.7
16,384	+3.1	0.7	0.9	1.2

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 7 (National lines): Errors in households' estimated poverty rates at a point in time, precision, and the α factor for precision

	Poverty lines			
		National (2012 def.)		
	Food	**100%**	**150%**	**200%**
Error (estimate minus observed value)	+1.6	+3.1	+3.2	+1.8
Precision of estimate	0.6	0.7	0.7	0.6
Alpha factor for precision	1.16	1.19	1.25	1.34

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.
Errors (differences between estimates and observed values) are in units of percentage points.
Precision is measured as 90-percent confidence intervals in units of ± percentage points.
Errors and precision estimated from 1,000 bootstraps with n = 16,384.
Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Table 7 (International 2005 and 2011 PPP lines): Errors in households' estimated poverty rates at a point in time, precision, and the α factor for precision

	Poverty lines							
	Intl. 2005 PPP (2012 def.)				Intl. 2011 PPP (2012 def.)			
	$1.25	**$2.00**	**$2.50**	**$5.00**	**$1.90**	**$3.20**	**$5.50**	**$21.70**
Error (estimate minus observed value)	+4.6	+2.5	+1.3	–0.1	+4.5	+2.5	+0.4	0.0
Precision of estimate	0.7	0.6	0.5	0.2	0.7	0.6	0.3	0.0
Alpha factor for precision	1.25	1.39	1.47	1.08	1.24	1.40	1.27	0.28

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Errors (differences between estimates and observed values) are in units of percentage points.

Precision is measured as 90-percent confidence intervals in units of ± percentage points.

Errors and precision estimated from 1,000 bootstraps with n = 16,384.

Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Table 7 (Relative and percentile-based lines): Errors in households' estimated poverty rates at a point in time, precision, and the α factor for precision

	Poverty lines					
	Poorest 1/2	Percentile-based lines (2012 def.)				
	< 100% Natl.	20th	40th	50th	60th	80th
Error (estimate minus observed value)	+2.2	+1.5	+2.4	+2.8	+2.8	+4.8
Precision of estimate	0.7	0.6	0.7	0.7	0.7	0.7
Alpha factor for precision	1.17	1.17	1.17	1.21	1.18	1.25

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Errors (differences between estimates and observed values) are in units of percentage points.

Precision is measured as 90-percent confidence intervals in units of ± percentage points.

Errors and precision estimated from 1,000 bootstraps with n = 16,384.

Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Table 8 (All poverty lines): Possible targeting outcomes

Observed poverty status		Targeting segment: Targeted	Targeting segment: Non-targeted
		Inclusion	**Undercoverage**
Poor		Poor correctly targeted	Poor mistakenly not targeted
		Leakage	**Exclusion**
Non-poor		Non-poor mistakenly targeted	Non-poor correctly not targeted

Table 9 (100% of the national line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	4.8	48.5	0.5	46.3	51.1	–81.1
<=21	9.4	43.8	1.2	45.6	55.0	–62.4
<=24	13.6	39.7	2.2	44.5	58.1	–44.6
<=27	18.5	34.8	3.6	43.1	61.6	–23.7
<=29	22.0	31.3	4.7	42.0	64.1	–8.6
<=31	25.5	27.8	5.8	40.9	66.4	+6.6
<=33	28.9	24.4	7.2	39.5	68.4	+22.0
<=35	32.9	20.4	9.2	37.5	70.4	+40.5
<=37	36.4	16.8	11.3	35.5	71.9	+57.9
<=39	38.8	14.4	13.4	33.3	72.2	+71.0
<=41	42.0	11.3	16.1	30.6	72.6	+69.7
<=43	44.4	8.9	18.9	27.8	72.2	+64.5
<=45	46.2	7.1	20.8	25.9	72.1	+60.9
<=47	47.7	5.6	22.9	23.8	71.5	+57.1
<=50	49.4	3.9	26.1	20.6	70.0	+50.9
<=54	51.0	2.2	30.3	16.4	67.5	+43.2
<=58	52.1	1.2	34.2	12.5	64.6	+35.8
<=62	52.8	0.5	38.0	8.7	61.5	+28.6
<=68	53.2	0.1	42.4	4.4	57.5	+20.5
<=100	53.3	0.0	46.7	0.0	53.3	+12.3

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (100% of the national line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	91.4	9.0	10.7:1
<=21	10.6	89.1	17.7	8.2:1
<=24	15.9	85.9	25.6	6.1:1
<=27	22.2	83.6	34.8	5.1:1
<=29	26.7	82.5	41.3	4.7:1
<=31	31.3	81.5	47.9	4.4:1
<=33	36.1	80.0	54.3	4.0:1
<=35	42.0	78.2	61.7	3.6:1
<=37	47.7	76.4	68.4	3.2:1
<=39	52.3	74.3	72.9	2.9:1
<=41	58.1	72.2	78.8	2.6:1
<=43	63.3	70.1	83.3	2.3:1
<=45	67.0	68.9	86.7	2.2:1
<=47	70.6	67.6	89.5	2.1:1
<=50	75.6	65.4	92.7	1.9:1
<=54	81.3	62.8	95.8	1.7:1
<=58	86.3	60.4	97.8	1.5:1
<=62	90.8	58.1	99.1	1.4:1
<=68	95.5	55.7	99.8	1.3:1
<=100	100.0	53.3	100.0	1.1:1

Scorecard applied to the validation sample.

Tables for the Food Poverty Line

Table 3 (Food line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	59.2
18–21	47.9
22–24	45.2
25–27	35.9
28–29	29.1
30–31	29.1
32–33	27.3
34–35	22.4
36–37	19.7
38–39	15.3
40–41	12.8
42–43	10.7
44–45	7.7
46–47	7.7
48–50	7.7
51–54	3.6
55–58	3.5
59–62	2.5
63–68	1.6
69–100	0.2

Table 5 (Food line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+14.7	3.9	4.5	5.8
18–21	+9.2	3.2	4.0	5.0
22–24	+9.6	4.0	4.8	6.3
25–27	–10.0	6.7	7.1	7.6
28–29	–3.8	3.7	4.0	5.4
30–31	–3.6	4.4	5.2	7.0
32–33	–2.0	3.7	4.4	6.0
34–35	+3.9	2.5	3.0	4.0
36–37	+0.1	3.1	3.6	5.1
38–39	+7.7	1.4	1.7	2.2
40–41	+4.9	1.4	1.7	2.2
42–43	+5.0	1.1	1.3	1.7
44–45	–12.8	8.9	9.2	10.0
46–47	+3.8	1.3	1.5	1.9
48–50	+3.9	1.0	1.1	1.5
51–54	+0.4	0.8	1.0	1.3
55–58	+0.8	0.8	1.0	1.4
59–62	–2.6	2.3	2.6	3.1
63–68	+0.3	0.6	0.7	0.9
69–100	+0.2	0.0	0.0	0.0

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (Food line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	–0.2	62.7	66.3	77.8
4	+0.9	34.0	39.8	53.1
8	+1.4	26.1	30.3	38.8
16	+1.1	19.0	22.8	31.1
32	+1.4	13.6	16.8	21.7
64	+1.5	9.3	11.7	15.4
128	+1.6	6.9	8.2	10.7
256	+1.6	4.9	5.9	7.6
512	+1.6	3.4	4.0	5.5
1,024	+1.6	2.3	2.7	3.5
2,048	+1.6	1.7	2.0	2.7
4,096	+1.6	1.2	1.4	1.9
8,192	+1.6	0.9	1.0	1.3
16,384	+1.6	0.6	0.7	0.9

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (Food line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	3.2	17.2	2.1	77.6	80.7	–58.6
<=21	5.6	14.8	5.0	74.6	80.2	–20.4
<=24	7.6	12.8	8.3	71.3	78.9	+15.2
<=27	10.2	10.1	12.0	67.7	77.9	+41.2
<=29	12.0	8.4	14.7	64.9	76.9	+27.6
<=31	13.2	7.2	18.1	61.5	74.7	+10.9
<=33	14.5	5.8	21.6	58.0	72.5	–6.3
<=35	15.7	4.6	26.3	53.3	69.0	–29.5
<=37	16.8	3.5	30.9	48.8	65.6	–51.9
<=39	17.4	2.9	34.9	44.8	62.2	–71.3
<=41	18.1	2.2	40.0	39.7	57.8	–96.7
<=43	18.7	1.7	44.6	35.0	53.7	–119.4
<=45	19.1	1.2	47.9	31.7	50.8	–135.6
<=47	19.3	1.0	51.3	28.4	47.7	–151.9
<=50	19.6	0.7	55.9	23.7	43.3	–175.0
<=54	19.9	0.4	61.4	18.3	38.2	–201.7
<=58	20.1	0.2	66.2	13.4	33.5	–225.5
<=62	20.3	0.1	70.6	9.1	29.4	–246.9
<=68	20.3	0.0	75.2	4.5	24.8	–269.7
<=100	20.3	0.0	79.7	0.0	20.3	–291.6

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (Food line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	60.3	15.6	1.5:1
<=21	10.6	52.7	27.4	1.1:1
<=24	15.9	47.6	37.2	0.9:1
<=27	22.2	46.0	50.1	0.9:1
<=29	26.7	44.8	58.8	0.8:1
<=31	31.3	42.1	64.8	0.7:1
<=33	36.1	40.1	71.3	0.7:1
<=35	42.0	37.4	77.2	0.6:1
<=37	47.7	35.2	82.6	0.5:1
<=39	52.3	33.3	85.5	0.5:1
<=41	58.1	31.2	89.0	0.5:1
<=43	63.3	29.5	91.7	0.4:1
<=45	67.0	28.5	93.9	0.4:1
<=47	70.6	27.4	94.9	0.4:1
<=50	75.6	26.0	96.5	0.4:1
<=54	81.3	24.5	98.0	0.3:1
<=58	86.3	23.3	98.9	0.3:1
<=62	90.8	22.3	99.6	0.3:1
<=68	95.5	21.3	100.0	0.3:1
<=100	100.0	20.3	100.0	0.3:1

Scorecard applied to the validation sample.

Tables for 150% of the National Poverty Line

Table 3 (150% of the national line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	98.3
18–21	95.9
22–24	94.4
25–27	92.8
28–29	92.2
30–31	92.2
32–33	92.2
34–35	87.8
36–37	86.9
38–39	85.8
40–41	82.6
42–43	80.1
44–45	76.5
46–47	74.2
48–50	65.3
51–54	57.9
55–58	52.5
59–62	41.7
63–68	33.0
69–100	15.9

Table 5 (150% of the national line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+4.2	1.8	2.2	2.7
18–21	–2.4	1.6	1.6	1.7
22–24	+11.9	4.2	4.9	6.3
25–27	–1.6	1.4	1.5	2.0
28–29	–1.6	1.6	1.8	2.3
30–31	+0.3	1.8	2.1	2.7
32–33	+3.6	2.3	2.8	3.7
34–35	–2.5	2.1	2.3	3.0
36–37	–7.1	4.2	4.3	4.4
38–39	+12.1	3.9	4.8	6.5
40–41	+3.9	3.0	3.5	4.8
42–43	+11.6	3.9	4.6	6.2
44–45	–5.1	3.9	4.2	4.7
46–47	+6.7	3.7	4.5	6.1
48–50	+9.8	4.0	4.6	5.8
51–54	+1.8	3.6	4.4	5.9
55–58	+10.3	3.2	3.9	5.2
59–62	+11.6	3.4	4.1	5.6
63–68	–6.4	5.0	5.3	6.0
69–100	+6.3	1.7	2.1	2.8

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (150% of the national line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	–0.2	63.8	73.0	80.7
4	+1.5	36.4	45.5	57.6
8	+1.9	27.3	32.6	45.3
16	+2.3	21.7	25.6	33.7
32	+2.9	15.7	18.6	24.4
64	+3.0	11.5	13.2	16.5
128	+3.1	7.7	9.2	11.6
256	+3.1	5.6	6.6	8.6
512	+3.2	3.9	4.6	6.3
1,024	+3.2	2.8	3.4	4.3
2,048	+3.2	1.9	2.3	3.1
4,096	+3.2	1.3	1.6	2.1
8,192	+3.2	0.9	1.1	1.6
16,384	+3.2	0.7	0.9	1.1

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (150% of the national line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.1	70.4	0.2	24.4	29.4	–86.3
<=21	10.3	65.1	0.3	24.3	34.6	–72.3
<=24	15.2	60.2	0.7	23.9	39.1	–58.8
<=27	21.1	54.3	1.0	23.6	44.7	–42.6
<=29	25.4	50.0	1.3	23.3	48.6	–31.0
<=31	29.6	45.8	1.7	22.9	52.5	–19.2
<=33	33.9	41.5	2.2	22.3	56.2	–7.2
<=35	39.3	36.2	2.8	21.8	61.1	+7.8
<=37	44.4	31.0	3.3	21.3	65.6	+22.1
<=39	48.0	27.5	4.3	20.3	68.2	+32.9
<=41	52.7	22.7	5.4	19.1	71.8	+46.9
<=43	56.7	18.7	6.5	18.0	74.8	+59.1
<=45	59.6	15.8	7.4	17.2	76.8	+67.9
<=47	62.0	13.4	8.5	16.1	78.1	+75.8
<=50	65.4	10.0	10.2	14.4	79.8	+86.5
<=54	69.0	6.4	12.3	12.2	81.2	+83.6
<=58	71.4	4.0	14.9	9.6	81.0	+80.2
<=62	73.2	2.3	17.7	6.9	80.1	+76.6
<=68	74.8	0.6	20.7	3.9	78.7	+72.5
<=100	75.4	0.0	24.6	0.0	75.4	+67.4

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (150% of the national line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	96.2	6.7	25.2:1
<=21	10.6	97.2	13.7	34.2:1
<=24	15.9	95.9	20.2	23.2:1
<=27	22.2	95.4	28.0	20.7:1
<=29	26.7	95.1	33.6	19.2:1
<=31	31.3	94.5	39.2	17.2:1
<=33	36.1	93.8	44.9	15.2:1
<=35	42.0	93.4	52.1	14.1:1
<=37	47.7	93.0	58.8	13.3:1
<=39	52.3	91.8	63.6	11.1:1
<=41	58.1	90.6	69.8	9.7:1
<=43	63.3	89.7	75.2	8.7:1
<=45	67.0	88.9	79.0	8.0:1
<=47	70.6	87.9	82.3	7.3:1
<=50	75.6	86.5	86.7	6.4:1
<=54	81.3	84.8	91.4	5.6:1
<=58	86.3	82.7	94.7	4.8:1
<=62	90.8	80.6	97.0	4.1:1
<=68	95.5	78.3	99.2	3.6:1
<=100	100.0	75.4	100.0	3.1:1

Scorecard applied to the validation sample.

Tables for 200% of the National Poverty Line

Table 3 (200% of the national line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	99.0
18–21	98.8
22–24	98.7
25–27	98.6
28–29	97.0
30–31	97.0
32–33	97.0
34–35	95.8
36–37	95.7
38–39	95.5
40–41	91.8
42–43	91.7
44–45	91.7
46–47	90.0
48–50	85.6
51–54	79.6
55–58	75.4
59–62	65.1
63–68	53.5
69–100	29.8

Table 5 (200% of the national line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+1.2	1.0	1.2	1.5
18–21	–0.8	0.5	0.5	0.6
22–24	+13.1	4.1	4.8	6.0
25–27	–0.4	0.5	0.6	0.8
28–29	–0.2	1.1	1.3	1.6
30–31	+0.9	1.3	1.5	2.0
32–33	+2.0	1.4	1.7	2.3
34–35	–0.7	1.2	1.5	2.0
36–37	–2.1	1.4	1.4	1.5
38–39	+0.7	1.4	1.6	2.1
40–41	–3.1	2.1	2.2	2.4
42–43	+16.0	4.0	4.9	6.1
44–45	–1.7	1.7	1.9	2.4
46–47	+1.7	2.7	3.1	4.1
48–50	–0.7	3.0	3.6	4.6
51–54	–4.8	3.5	3.6	4.1
55–58	+10.7	3.2	3.9	5.3
59–62	+6.4	4.3	5.0	6.1
63–68	–1.9	3.7	4.4	5.4
69–100	+2.1	3.1	3.8	5.5

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (200% of the national line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.1	55.1	68.2	83.6
4	+1.1	29.9	38.7	50.4
8	+0.8	21.5	26.5	36.7
16	+1.2	16.5	20.4	27.8
32	+1.3	12.1	14.3	19.5
64	+1.5	9.2	10.7	14.1
128	+1.6	6.5	7.8	9.8
256	+1.6	4.8	5.8	7.5
512	+1.8	3.3	4.0	5.4
1,024	+1.8	2.3	2.8	3.7
2,048	+1.7	1.6	1.9	2.6
4,096	+1.8	1.2	1.4	1.8
8,192	+1.8	0.8	1.0	1.3
16,384	+1.8	0.6	0.7	0.9

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (200% of the national line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.2	81.4	0.1	13.3	18.5	–88.0
<=21	10.5	76.1	0.1	13.3	23.8	–75.6
<=24	15.5	71.0	0.3	13.1	28.6	–63.7
<=27	21.7	64.8	0.4	13.0	34.7	–49.3
<=29	26.2	60.4	0.5	12.9	39.0	–39.0
<=31	30.6	56.0	0.7	12.7	43.3	–28.5
<=33	35.2	51.4	1.0	12.5	47.6	–17.7
<=35	40.9	45.7	1.1	12.3	53.2	–4.2
<=37	46.4	40.2	1.3	12.1	58.5	+8.7
<=39	50.6	36.0	1.6	11.8	62.4	+18.8
<=41	56.1	30.5	2.0	11.4	67.5	+31.9
<=43	60.6	26.0	2.7	10.8	71.4	+43.1
<=45	64.0	22.6	3.0	10.4	74.4	+51.4
<=47	67.1	19.5	3.5	10.0	77.1	+59.0
<=50	71.5	15.0	4.0	9.4	80.9	+69.9
<=54	76.2	10.4	5.1	8.3	84.5	+82.0
<=58	79.7	6.9	6.6	6.8	86.5	+91.8
<=62	82.6	4.0	8.2	5.2	87.8	+90.5
<=68	85.2	1.4	10.4	3.0	88.2	+88.0
<=100	86.6	0.0	13.4	0.0	86.6	+84.5

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (200% of the national line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	98.4	6.0	60.7:1
<=21	10.6	98.9	12.1	93.1:1
<=24	15.9	97.9	18.0	47.3:1
<=27	22.2	98.1	25.1	52.0:1
<=29	26.7	98.0	30.2	49.0:1
<=31	31.3	97.7	35.4	43.0:1
<=33	36.1	97.4	40.6	37.0:1
<=35	42.0	97.3	47.3	36.6:1
<=37	47.7	97.2	53.6	35.1:1
<=39	52.3	96.9	58.5	31.0:1
<=41	58.1	96.5	64.8	27.6:1
<=43	63.3	95.8	70.0	22.7:1
<=45	67.0	95.5	73.9	21.1:1
<=47	70.6	95.1	77.5	19.4:1
<=50	75.6	94.7	82.6	17.7:1
<=54	81.3	93.7	88.0	15.0:1
<=58	86.3	92.3	92.1	12.1:1
<=62	90.8	90.9	95.4	10.0:1
<=68	95.5	89.1	98.4	8.2:1
<=100	100.0	86.6	100.0	6.5:1

Scorecard applied to the validation sample.

Tables for the $1.25/day 2005 PPP Poverty Line

Table 3 ($1.25/day 2005 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	97.6
18–21	95.0
22–24	93.8
25–27	91.6
28–29	90.3
30–31	90.3
32–33	88.6
34–35	85.1
36–37	83.5
38–39	82.7
40–41	75.7
42–43	74.2
44–45	67.4
46–47	64.0
48–50	54.7
51–54	46.4
55–58	40.0
59–62	28.0
63–68	17.7
69–100	7.4

Table 5 ($1.25/day 2005 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+5.3	2.0	2.5	3.3
18–21	–3.1	1.9	2.0	2.1
22–24	+13.3	4.0	5.0	6.2
25–27	+1.5	1.9	2.2	2.7
28–29	+15.5	4.9	5.7	7.7
30–31	+0.4	2.0	2.3	3.1
32–33	+0.4	2.2	2.7	3.5
34–35	+1.3	2.5	3.0	3.8
36–37	+3.6	3.5	4.3	5.6
38–39	+13.0	4.0	4.9	6.8
40–41	–1.3	3.0	3.5	4.7
42–43	+11.8	4.0	4.6	6.1
44–45	–10.2	6.6	6.9	7.6
46–47	+1.9	3.9	4.7	6.6
48–50	+11.6	3.7	4.4	5.7
51–54	+5.6	3.4	4.0	5.2
55–58	+6.1	3.1	3.6	4.9
59–62	+8.3	2.8	3.3	4.7
63–68	+1.3	2.7	3.2	4.5
69–100	+3.4	1.1	1.3	1.7

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($1.25/day 2005 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.3	68.6	75.2	88.7
4	+2.3	38.0	44.8	55.6
8	+3.0	29.7	35.3	47.4
16	+3.4	22.6	26.0	37.8
32	+4.1	16.5	19.7	25.0
64	+4.2	12.0	14.1	17.5
128	+4.4	8.1	9.6	13.3
256	+4.5	5.9	7.0	9.6
512	+4.7	4.2	4.9	6.4
1,024	+4.7	2.9	3.5	4.6
2,048	+4.6	2.1	2.6	3.6
4,096	+4.6	1.5	1.8	2.3
8,192	+4.6	1.0	1.3	1.6
16,384	+4.6	0.7	0.8	1.1

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($1.25/day 2005 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.0	64.3	0.3	30.4	35.4	–85.2
<=21	10.2	59.1	0.4	30.3	40.5	–70.0
<=24	15.0	54.3	0.9	29.8	44.8	–55.4
<=27	20.7	48.6	1.4	29.3	50.0	–38.1
<=29	24.7	44.6	2.0	28.7	53.4	–25.8
<=31	28.8	40.5	2.5	28.2	57.0	–13.2
<=33	33.0	36.3	3.1	27.6	60.7	–0.2
<=35	38.1	31.2	3.9	26.8	64.9	+15.7
<=37	42.8	26.5	4.9	25.8	68.7	+30.6
<=39	46.2	23.1	6.1	24.6	70.9	+42.1
<=41	50.7	18.6	7.4	23.3	74.1	+57.1
<=43	54.5	14.8	8.8	21.9	76.4	+70.0
<=45	57.2	12.1	9.9	20.8	78.0	+79.2
<=47	59.4	9.9	11.1	19.6	79.0	+83.9
<=50	62.3	7.0	13.3	17.4	79.7	+80.8
<=54	65.1	4.2	16.2	14.5	79.5	+76.6
<=58	67.0	2.3	19.3	11.4	78.4	+72.1
<=62	68.2	1.1	22.6	8.1	76.4	+67.4
<=68	69.1	0.2	26.5	4.2	73.3	+61.8
<=100	69.3	0.0	30.7	0.0	69.3	+55.7

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($1.25/day 2005 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	94.8	7.2	18.1:1
<=21	10.6	96.4	14.7	26.6:1
<=24	15.9	94.5	21.6	17.1:1
<=27	22.2	93.6	29.9	14.6:1
<=29	26.7	92.5	35.6	12.4:1
<=31	31.3	92.0	41.6	11.5:1
<=33	36.1	91.5	47.7	10.7:1
<=35	42.0	90.7	55.0	9.8:1
<=37	47.7	89.8	61.8	8.8:1
<=39	52.3	88.4	66.7	7.6:1
<=41	58.1	87.3	73.2	6.9:1
<=43	63.3	86.1	78.7	6.2:1
<=45	67.0	85.3	82.5	5.8:1
<=47	70.6	84.2	85.7	5.3:1
<=50	75.6	82.4	89.8	4.7:1
<=54	81.3	80.0	93.9	4.0:1
<=58	86.3	77.6	96.7	3.5:1
<=62	90.8	75.1	98.5	3.0:1
<=68	95.5	72.3	99.7	2.6:1
<=100	100.0	69.3	100.0	2.3:1

Scorecard applied to the validation sample.

Tables for the $2.00/day 2005 PPP Poverty Line

Table 3 ($2.00/day 2005 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	99.3
18–21	99.2
22–24	99.2
25–27	99.2
28–29	97.8
30–31	97.8
32–33	97.8
34–35	97.8
36–37	96.7
38–39	96.7
40–41	94.4
42–43	93.8
44–45	93.8
46–47	90.9
48–50	87.2
51–54	82.0
55–58	76.8
59–62	62.8
63–68	52.1
69–100	25.9

Table 5 ($2.00/day 2005 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	–0.1	0.5	0.6	0.8
18–21	–0.4	0.4	0.4	0.5
22–24	+12.5	4.2	5.0	6.0
25–27	–0.1	0.4	0.5	0.7
28–29	–1.3	0.9	1.0	1.1
30–31	0.0	0.9	1.1	1.6
32–33	+1.9	1.3	1.6	2.1
34–35	–0.7	0.7	0.8	1.3
36–37	–1.3	1.0	1.0	1.2
38–39	0.0	1.2	1.4	1.8
40–41	–1.0	1.1	1.3	1.9
42–43	+16.3	4.0	4.7	6.1
44–45	–0.8	1.4	1.6	2.1
46–47	–1.9	2.0	2.5	3.0
48–50	+7.0	3.8	4.5	5.9
51–54	–4.1	3.1	3.3	3.7
55–58	+14.5	3.4	4.0	5.4
59–62	+5.8	4.3	5.0	6.4
63–68	–0.2	3.8	4.3	5.6
69–100	+2.7	2.8	3.5	4.6

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($2.00/day 2005 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.1	50.0	64.9	79.4
4	+1.6	29.8	39.4	53.3
8	+1.3	22.3	27.1	37.9
16	+2.1	17.1	22.1	29.3
32	+2.1	12.4	14.8	20.1
64	+2.2	9.1	11.4	13.8
128	+2.4	6.8	7.8	9.5
256	+2.3	4.8	5.8	7.6
512	+2.5	3.3	3.9	5.4
1,024	+2.5	2.4	2.8	3.8
2,048	+2.5	1.6	1.9	2.6
4,096	+2.5	1.2	1.4	1.9
8,192	+2.5	0.8	1.0	1.3
16,384	+2.5	0.6	0.7	0.9

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($2.00/day 2005 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.2	82.0	0.0	12.7	17.9	–88.0
<=21	10.5	76.7	0.1	12.7	23.2	–75.8
<=24	15.7	71.6	0.2	12.5	28.2	–63.9
<=27	21.9	65.4	0.3	12.5	34.4	–49.5
<=29	26.4	60.9	0.3	12.4	38.8	–39.2
<=31	30.9	56.3	0.4	12.3	43.3	–28.7
<=33	35.5	51.7	0.6	12.2	47.7	–17.9
<=35	41.4	45.9	0.7	12.1	53.4	–4.4
<=37	46.9	40.4	0.8	11.9	58.8	+8.4
<=39	51.3	36.0	1.0	11.7	63.0	+18.6
<=41	56.8	30.5	1.3	11.4	68.2	+31.7
<=43	61.4	25.8	1.9	10.9	72.3	+42.9
<=45	64.9	22.4	2.2	10.6	75.4	+51.1
<=47	68.1	19.2	2.4	10.3	78.4	+58.9
<=50	72.5	14.7	3.0	9.7	82.2	+69.7
<=54	77.4	9.9	4.0	8.8	86.1	+81.8
<=58	80.9	6.4	5.5	7.3	88.1	+91.6
<=62	83.6	3.6	7.2	5.6	89.2	+91.8
<=68	86.1	1.2	9.5	3.3	89.4	+89.2
<=100	87.3	0.0	12.7	0.0	87.3	+85.4

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($2.00/day 2005 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	99.4	6.0	173.7:1
<=21	10.6	99.5	12.1	182.9:1
<=24	15.9	98.6	17.9	72.0:1
<=27	22.2	98.8	25.1	80.1:1
<=29	26.7	98.8	30.2	84.6:1
<=31	31.3	98.7	35.4	76.8:1
<=33	36.1	98.4	40.7	61.6:1
<=35	42.0	98.4	47.4	62.0:1
<=37	47.7	98.3	53.7	57.5:1
<=39	52.3	98.1	58.7	51.2:1
<=41	58.1	97.7	65.1	42.3:1
<=43	63.3	97.1	70.4	33.0:1
<=45	67.0	96.8	74.3	29.9:1
<=47	70.6	96.5	78.0	27.8:1
<=50	75.6	96.0	83.1	23.9:1
<=54	81.3	95.1	88.7	19.6:1
<=58	86.3	93.7	92.7	14.8:1
<=62	90.8	92.1	95.9	11.7:1
<=68	95.5	90.1	98.6	9.1:1
<=100	100.0	87.3	100.0	6.9:1

Scorecard applied to the validation sample.

Tables for the $2.50/day 2005 PPP Poverty Line

Table 3 ($2.50/day 2005 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	99.7
18–21	99.6
22–24	99.6
25–27	99.6
28–29	99.3
30–31	99.3
32–33	99.3
34–35	99.2
36–37	98.5
38–39	98.5
40–41	97.8
42–43	96.7
44–45	96.7
46–47	96.7
48–50	94.1
51–54	92.1
55–58	87.5
59–62	75.9
63–68	67.3
69–100	40.7

Table 5 ($2.50/day 2005 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	–0.3	0.2	0.2	0.2
18–21	–0.2	0.2	0.3	0.3
22–24	+12.6	4.2	5.1	6.0
25–27	+0.2	0.4	0.5	0.6
28–29	–0.7	0.3	0.3	0.3
30–31	+0.2	0.5	0.7	0.9
32–33	–0.3	0.3	0.4	0.5
34–35	+0.5	0.7	0.8	1.1
36–37	–0.9	0.7	0.7	0.7
38–39	+1.1	1.1	1.3	1.7
40–41	–1.8	1.0	1.0	1.1
42–43	+6.9	3.2	3.9	5.1
44–45	–0.9	1.0	1.2	1.5
46–47	+2.3	1.9	2.2	2.8
48–50	+2.4	2.8	3.3	4.4
51–54	–2.0	1.6	1.8	2.1
55–58	+6.6	2.6	3.1	4.1
59–62	–5.3	4.3	4.6	5.4
63–68	+3.2	3.6	4.3	5.3
69–100	+4.1	3.6	4.2	5.9

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($2.50/day 2005 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.8	45.7	54.3	78.3
4	+1.1	24.5	31.7	48.3
8	+0.8	18.3	24.6	34.9
16	+1.2	14.5	18.4	25.1
32	+0.9	10.9	13.1	15.7
64	+1.1	7.7	9.4	11.6
128	+1.2	5.4	6.5	8.5
256	+1.2	4.1	4.8	6.0
512	+1.3	2.8	3.3	4.4
1,024	+1.3	2.1	2.4	3.0
2,048	+1.3	1.4	1.6	2.2
4,096	+1.3	1.0	1.2	1.6
8,192	+1.3	0.7	0.8	1.1
16,384	+1.3	0.5	0.6	0.7

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($2.50/day 2005 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.3	87.2	0.0	7.5	12.8	–88.6
<=21	10.6	81.9	0.0	7.5	18.1	–77.1
<=24	15.7	76.8	0.1	7.4	23.1	–65.8
<=27	22.0	70.5	0.2	7.3	29.3	–52.3
<=29	26.5	66.0	0.2	7.3	33.8	–42.5
<=31	31.1	61.4	0.2	7.3	38.4	–32.5
<=33	35.9	56.6	0.3	7.2	43.1	–22.2
<=35	41.7	50.8	0.3	7.2	48.9	–9.5
<=37	47.3	45.2	0.4	7.1	54.5	+2.8
<=39	51.8	40.7	0.5	7.0	58.8	+12.5
<=41	57.6	34.9	0.5	7.0	64.6	+25.1
<=43	62.5	30.0	0.8	6.8	69.3	+36.0
<=45	66.2	26.3	0.9	6.6	72.8	+44.0
<=47	69.5	23.0	1.1	6.4	75.9	+51.4
<=50	74.3	18.2	1.3	6.2	80.5	+62.0
<=54	79.6	12.9	1.7	5.8	85.4	+74.0
<=58	83.8	8.7	2.6	5.0	88.7	+83.9
<=62	87.4	5.0	3.4	4.1	91.6	+92.7
<=68	90.6	1.9	5.0	2.5	93.1	+94.6
<=100	92.5	0.0	7.5	0.0	92.5	+91.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($2.50/day 2005 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	99.9	5.7	1,019.0:1
<=21	10.6	99.8	11.4	542.8:1
<=24	15.9	99.1	17.0	107.6:1
<=27	22.2	99.2	23.8	118.6:1
<=29	26.7	99.3	28.7	142.0:1
<=31	31.3	99.3	33.6	136.8:1
<=33	36.1	99.3	38.8	136.9:1
<=35	42.0	99.2	45.1	128.0:1
<=37	47.7	99.2	51.2	129.2:1
<=39	52.3	99.1	56.0	106.4:1
<=41	58.1	99.1	62.3	107.4:1
<=43	63.3	98.8	67.6	83.1:1
<=45	67.0	98.7	71.5	75.9:1
<=47	70.6	98.5	75.1	65.2:1
<=50	75.6	98.3	80.3	57.7:1
<=54	81.3	97.9	86.1	46.8:1
<=58	86.3	97.0	90.6	32.9:1
<=62	90.8	96.3	94.5	26.0:1
<=68	95.5	94.8	97.9	18.2:1
<=100	100.0	92.5	100.0	12.3:1

Scorecard applied to the validation sample.

Tables for the $5.00/day 2005 PPP Poverty Line

Table 3 ($5.00/day 2005 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	100.0
18–21	100.0
22–24	100.0
25–27	100.0
28–29	100.0
30–31	100.0
32–33	100.0
34–35	99.9
36–37	99.9
38–39	99.9
40–41	99.9
42–43	99.9
44–45	99.9
46–47	99.9
48–50	99.8
51–54	99.6
55–58	98.6
59–62	98.3
63–68	94.7
69–100	86.7

Table 5 ($5.00/day 2005 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	0.0	0.0	0.0	0.0
18–21	0.0	0.0	0.0	0.0
22–24	0.0	0.0	0.0	0.0
25–27	0.0	0.0	0.0	0.0
28–29	0.0	0.0	0.0	0.0
30–31	0.0	0.0	0.0	0.0
32–33	0.0	0.0	0.0	0.0
34–35	–0.1	0.0	0.0	0.0
36–37	–0.1	0.0	0.0	0.0
38–39	0.0	0.1	0.1	0.1
40–41	–0.1	0.1	0.1	0.1
42–43	–0.1	0.1	0.1	0.1
44–45	–0.1	0.1	0.1	0.1
46–47	–0.1	0.1	0.1	0.1
48–50	–0.2	0.1	0.1	0.1
51–54	+0.7	0.6	0.7	0.9
55–58	–1.3	0.7	0.7	0.7
59–62	+1.1	1.1	1.3	1.6
63–68	+1.2	1.7	2.0	2.6
69–100	–2.8	2.4	2.6	3.3

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($5.00/day 2005 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	–0.4	2.7	6.6	50.0
4	0.0	2.4	12.7	25.8
8	0.0	5.7	9.0	14.6
16	0.0	4.6	6.1	9.1
32	–0.1	3.1	3.8	5.4
64	–0.1	2.0	2.4	4.0
128	–0.1	1.5	1.9	2.6
256	0.0	1.1	1.3	1.8
512	0.0	0.8	1.0	1.3
1,024	0.0	0.6	0.7	0.9
2,048	0.0	0.4	0.5	0.7
4,096	0.0	0.3	0.3	0.5
8,192	0.0	0.2	0.3	0.4
16,384	–0.1	0.2	0.2	0.2

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($5.00/day 2005 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.3	93.6	0.0	1.1	6.4	–89.4
<=21	10.6	88.3	0.0	1.1	11.7	–78.6
<=24	15.9	83.0	0.0	1.1	17.0	–67.9
<=27	22.2	76.7	0.0	1.1	23.3	–55.2
<=29	26.7	72.2	0.0	1.1	27.8	–46.0
<=31	31.3	67.6	0.0	1.1	32.4	–36.7
<=33	36.1	62.8	0.0	1.1	37.2	–27.0
<=35	42.0	56.9	0.0	1.1	43.1	–15.0
<=37	47.7	51.2	0.0	1.1	48.8	–3.5
<=39	52.2	46.7	0.0	1.1	53.3	+5.7
<=41	58.1	40.8	0.0	1.1	59.2	+17.5
<=43	63.3	35.6	0.0	1.1	64.4	+28.0
<=45	67.0	31.9	0.0	1.1	68.1	+35.5
<=47	70.5	28.4	0.0	1.1	71.6	+42.7
<=50	75.5	23.4	0.0	1.1	76.6	+52.8
<=54	81.2	17.7	0.1	1.0	82.2	+64.3
<=58	86.2	12.7	0.1	1.0	87.2	+74.5
<=62	90.6	8.3	0.2	0.9	91.4	+83.4
<=68	95.0	3.9	0.5	0.6	95.6	+92.7
<=100	98.9	0.0	1.1	0.0	98.9	+98.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($5.00/day 2005 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	100.0	5.3	Only poor targeted
<=21	10.6	100.0	10.7	Only poor targeted
<=24	15.9	100.0	16.1	Only poor targeted
<=27	22.2	100.0	22.4	Only poor targeted
<=29	26.7	100.0	27.0	Only poor targeted
<=31	31.3	100.0	31.7	Only poor targeted
<=33	36.1	100.0	36.5	Only poor targeted
<=35	42.0	100.0	42.5	Only poor targeted
<=37	47.7	100.0	48.2	Only poor targeted
<=39	52.3	100.0	52.8	3,963.1:1
<=41	58.1	100.0	58.7	4,407.9:1
<=43	63.3	100.0	64.0	4,799.5:1
<=45	67.0	100.0	67.8	5,084.0:1
<=47	70.6	100.0	71.3	5,351.3:1
<=50	75.6	100.0	76.4	3,021.8:1
<=54	81.3	99.9	82.1	867.0:1
<=58	86.3	99.9	87.2	838.9:1
<=62	90.8	99.7	91.6	370.2:1
<=68	95.5	99.5	96.1	181.6:1
<=100	100.0	98.9	100.0	90.2:1

Scorecard applied to the validation sample.

Tables for the $1.90/day 2011 PPP Poverty Line

Table 3 ($1.90/day 2011 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	97.5
18–21	94.8
22–24	93.3
25–27	90.9
28–29	89.4
30–31	89.4
32–33	87.9
34–35	84.3
36–37	82.2
38–39	79.1
40–41	73.3
42–43	72.4
44–45	64.4
46–47	61.4
48–50	52.1
51–54	44.6
55–58	39.1
59–62	26.1
63–68	16.3
69–100	6.4

Table 5 ($1.90/day 2011 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+5.3	2.0	2.5	3.3
18–21	–3.0	1.9	1.9	2.1
22–24	+13.1	4.0	4.9	6.2
25–27	+1.9	1.9	2.3	2.9
28–29	+15.6	4.8	5.7	7.4
30–31	–0.5	2.0	2.3	3.1
32–33	0.0	2.3	2.7	3.4
34–35	+3.7	2.6	3.1	4.1
36–37	+3.6	3.5	4.2	5.5
38–39	+11.2	4.0	4.9	6.6
40–41	–2.8	3.0	3.5	4.8
42–43	+11.3	4.0	4.7	6.1
44–45	–9.9	6.6	7.0	7.5
46–47	+2.0	4.0	4.9	6.6
48–50	+9.5	3.7	4.3	5.6
51–54	+6.9	3.3	3.9	4.9
55–58	+7.7	3.0	3.5	4.6
59–62	+8.2	2.7	3.2	4.5
63–68	+0.7	2.6	3.2	4.4
69–100	+2.8	1.0	1.3	1.7

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($1.90/day 2011 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.0	68.8	75.1	89.2
4	+2.2	37.9	45.1	56.5
8	+2.6	30.3	35.6	48.0
16	+3.3	22.4	25.9	37.9
32	+3.9	16.5	19.5	25.1
64	+4.1	12.0	14.0	17.1
128	+4.3	8.1	9.4	13.2
256	+4.4	5.9	7.2	9.5
512	+4.6	4.2	4.9	6.3
1,024	+4.6	3.1	3.6	4.6
2,048	+4.5	2.1	2.5	3.5
4,096	+4.5	1.4	1.8	2.4
8,192	+4.5	1.1	1.3	1.6
16,384	+4.5	0.7	0.9	1.2

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($1.90/day 2011 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.0	62.8	0.3	32.0	36.9	–84.9
<=21	10.2	57.6	0.4	31.8	42.0	–69.3
<=24	14.9	52.8	0.9	31.3	46.2	–54.5
<=27	20.6	47.1	1.5	30.7	51.3	–36.8
<=29	24.5	43.2	2.2	30.1	54.6	–24.4
<=31	28.6	39.1	2.7	29.6	58.2	–11.5
<=33	32.8	34.9	3.3	29.0	61.8	+1.8
<=35	37.7	30.0	4.3	28.0	65.7	+17.8
<=37	42.4	25.4	5.4	26.9	69.3	+32.9
<=39	45.7	22.1	6.6	25.7	71.3	+44.5
<=41	50.1	17.7	8.0	24.2	74.3	+59.7
<=43	53.8	14.0	9.5	22.7	76.5	+72.8
<=45	56.3	11.4	10.7	21.5	77.8	+82.1
<=47	58.5	9.3	12.1	20.2	78.6	+82.1
<=50	61.2	6.5	14.3	17.9	79.2	+78.9
<=54	63.9	3.9	17.5	14.8	78.7	+74.2
<=58	65.7	2.1	20.6	11.6	77.3	+69.5
<=62	66.8	1.0	24.0	8.2	75.0	+64.5
<=68	67.5	0.2	28.0	4.3	71.8	+58.7
<=100	67.7	0.0	32.3	0.0	67.7	+52.4

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($1.90/day 2011 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	94.7	7.3	17.7:1
<=21	10.6	96.0	15.0	24.0:1
<=24	15.9	94.1	22.0	15.9:1
<=27	22.2	93.1	30.4	13.4:1
<=29	26.7	91.9	36.2	11.4:1
<=31	31.3	91.5	42.3	10.7:1
<=33	36.1	90.9	48.5	10.0:1
<=35	42.0	89.8	55.7	8.8:1
<=37	47.7	88.8	62.5	7.9:1
<=39	52.3	87.4	67.4	6.9:1
<=41	58.1	86.2	73.9	6.2:1
<=43	63.3	85.0	79.4	5.7:1
<=45	67.0	84.0	83.1	5.2:1
<=47	70.6	82.9	86.3	4.8:1
<=50	75.6	81.1	90.4	4.3:1
<=54	81.3	78.5	94.3	3.7:1
<=58	86.3	76.1	97.0	3.2:1
<=62	90.8	73.5	98.6	2.8:1
<=68	95.5	70.7	99.7	2.4:1
<=100	100.0	67.7	100.0	2.1:1

Scorecard applied to the validation sample.

Tables for the $3.20/day 2011 PPP Poverty Line

Table 3 ($3.20/day 2011 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	99.3
18–21	99.2
22–24	99.2
25–27	99.2
28–29	98.3
30–31	98.3
32–33	98.3
34–35	98.0
36–37	97.0
38–39	97.0
40–41	94.7
42–43	93.9
44–45	93.9
46–47	91.7
48–50	88.0
51–54	83.5
55–58	77.9
59–62	63.5
63–68	53.4
69–100	26.6

Table 5 ($3.20/day 2011 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	–0.1	0.5	0.6	0.8
18–21	–0.5	0.4	0.4	0.4
22–24	+12.5	4.2	5.0	6.0
25–27	0.0	0.4	0.5	0.7
28–29	–0.8	0.7	0.7	1.0
30–31	+0.4	0.9	1.1	1.6
32–33	+2.4	1.3	1.6	2.1
34–35	–0.5	0.7	0.8	1.3
36–37	–1.7	1.1	1.1	1.2
38–39	+0.3	1.2	1.4	1.8
40–41	–2.5	1.6	1.7	1.8
42–43	+16.2	4.0	4.8	6.2
44–45	–1.0	1.4	1.6	2.0
46–47	–1.3	2.0	2.5	3.0
48–50	+7.5	3.8	4.5	5.8
51–54	–3.1	2.6	2.8	3.2
55–58	+14.9	3.5	4.0	5.5
59–62	+5.6	4.2	4.9	6.3
63–68	0.0	3.7	4.4	5.6
69–100	+1.9	3.0	3.7	4.9

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($3.20/day 2011 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.2	50.0	67.3	79.1
4	+1.6	29.4	39.3	53.0
8	+1.3	22.0	26.8	37.4
16	+2.0	16.5	21.7	29.0
32	+2.1	12.5	15.1	20.5
64	+2.2	9.3	11.2	13.9
128	+2.4	6.8	7.7	9.6
256	+2.3	4.8	5.9	7.5
512	+2.5	3.3	4.0	5.2
1,024	+2.5	2.4	2.8	3.6
2,048	+2.5	1.6	1.9	2.6
4,096	+2.5	1.2	1.4	1.8
8,192	+2.5	0.8	0.9	1.3
16,384	+2.5	0.6	0.7	0.9

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($3.20/day 2011 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.2	82.5	0.0	12.2	17.4	–88.1
<=21	10.6	77.2	0.0	12.2	22.7	–75.9
<=24	15.7	72.1	0.2	12.0	27.7	–64.1
<=27	21.9	65.9	0.3	12.0	33.9	–49.8
<=29	26.4	61.4	0.3	11.9	38.3	–39.5
<=31	30.9	56.8	0.4	11.8	42.8	–29.1
<=33	35.6	52.2	0.6	11.7	47.2	–18.3
<=35	41.4	46.4	0.7	11.6	53.0	–5.0
<=37	46.9	40.8	0.8	11.5	58.4	+7.8
<=39	51.3	36.5	1.0	11.3	62.6	+18.0
<=41	56.9	30.8	1.2	11.0	68.0	+31.1
<=43	61.6	26.2	1.7	10.5	72.1	+42.3
<=45	65.1	22.7	2.0	10.3	75.3	+50.5
<=47	68.3	19.5	2.2	10.0	78.3	+58.2
<=50	72.8	15.0	2.8	9.4	82.2	+69.0
<=54	77.6	10.1	3.7	8.6	86.2	+81.1
<=58	81.2	6.6	5.2	7.1	88.3	+90.9
<=62	84.0	3.8	6.8	5.4	89.5	+92.3
<=68	86.5	1.3	9.0	3.2	89.7	+89.7
<=100	87.8	0.0	12.2	0.0	87.8	+86.1

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($3.20/day 2011 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	99.4	6.0	173.7:1
<=21	10.6	99.6	12.0	237.7:1
<=24	15.9	98.7	17.9	76.7:1
<=27	22.2	98.8	25.0	84.2:1
<=29	26.7	98.9	30.1	88.4:1
<=31	31.3	98.8	35.2	79.5:1
<=33	36.1	98.4	40.5	63.1:1
<=35	42.0	98.4	47.1	63.3:1
<=37	47.7	98.4	53.5	61.4:1
<=39	52.3	98.2	58.5	54.0:1
<=41	58.1	97.9	64.9	47.7:1
<=43	63.3	97.3	70.2	36.6:1
<=45	67.0	97.1	74.1	33.1:1
<=47	70.6	96.8	77.8	30.5:1
<=50	75.6	96.3	82.9	26.1:1
<=54	81.3	95.5	88.5	21.1:1
<=58	86.3	94.0	92.5	15.8:1
<=62	90.8	92.5	95.7	12.4:1
<=68	95.5	90.6	98.6	9.6:1
<=100	100.0	87.8	100.0	7.2:1

Scorecard applied to the validation sample.

Tables for the $5.50/day 2011 PPP Poverty Line

Table 3 ($5.50/day 2011 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	100.0
18–21	100.0
22–24	99.9
25–27	99.9
28–29	99.9
30–31	99.9
32–33	99.9
34–35	99.9
36–37	99.9
38–39	99.8
40–41	99.4
42–43	99.4
44–45	99.2
46–47	99.2
48–50	99.1
51–54	98.3
55–58	96.4
59–62	94.7
63–68	86.3
69–100	65.3

Table 5 ($5.50/day 2011 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	0.0	0.0	0.0	0.1
18–21	0.0	0.0	0.0	0.0
22–24	–0.1	0.1	0.1	0.1
25–27	+0.3	0.4	0.5	0.6
28–29	–0.1	0.1	0.1	0.1
30–31	–0.1	0.1	0.1	0.1
32–33	0.0	0.1	0.1	0.2
34–35	–0.1	0.1	0.1	0.1
36–37	–0.1	0.1	0.1	0.1
38–39	+0.7	0.6	0.7	0.9
40–41	–0.6	0.3	0.3	0.3
42–43	–0.4	0.3	0.3	0.3
44–45	–0.3	0.4	0.5	0.6
46–47	+2.0	1.6	1.9	2.3
48–50	–0.4	0.4	0.4	0.6
51–54	+1.1	1.0	1.2	1.5
55–58	+0.5	1.3	1.4	1.8
59–62	+0.4	1.5	1.8	2.2
63–68	+7.8	3.5	4.2	5.4
69–100	–1.5	3.5	4.4	5.4

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($5.50/day 2011 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.5	6.8	44.7	65.1
4	+0.6	18.0	22.2	32.8
8	+0.5	11.0	14.9	25.9
16	+0.6	8.2	10.4	17.1
32	+0.3	5.4	7.1	10.6
64	+0.3	4.1	5.1	7.4
128	+0.4	3.1	3.7	5.5
256	+0.4	2.3	2.8	3.7
512	+0.4	1.6	1.8	2.4
1,024	+0.4	1.1	1.4	1.8
2,048	+0.4	0.8	0.9	1.3
4,096	+0.4	0.6	0.7	0.9
8,192	+0.4	0.4	0.5	0.6
16,384	+0.4	0.3	0.3	0.5

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($5.50/day 2011 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.3	91.6	0.0	3.2	8.4	–89.1
<=21	10.6	86.2	0.0	3.2	13.8	–78.1
<=24	15.9	80.9	0.0	3.2	19.0	–67.2
<=27	22.1	74.7	0.0	3.2	25.3	–54.3
<=29	26.7	70.2	0.0	3.2	29.8	–44.9
<=31	31.3	65.5	0.0	3.2	34.4	–35.3
<=33	36.1	60.7	0.0	3.1	39.2	–25.4
<=35	42.0	54.8	0.0	3.1	45.1	–13.2
<=37	47.7	49.2	0.0	3.1	50.8	–1.5
<=39	52.2	44.7	0.1	3.1	55.3	+7.9
<=41	58.0	38.8	0.1	3.1	61.1	+20.0
<=43	63.2	33.7	0.1	3.1	66.2	+30.6
<=45	66.9	29.9	0.1	3.0	69.9	+38.3
<=47	70.3	26.5	0.2	3.0	73.3	+45.5
<=50	75.3	21.5	0.2	2.9	78.2	+55.8
<=54	80.9	15.9	0.4	2.8	83.6	+67.5
<=58	85.7	11.1	0.6	2.6	88.3	+77.7
<=62	89.9	6.9	0.9	2.2	92.1	+86.6
<=68	93.8	3.0	1.7	1.5	95.3	+95.6
<=100	96.8	0.0	3.2	0.0	96.8	+96.7

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($5.50/day 2011 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	99.9	5.4	1,019.0:1
<=21	10.6	100.0	10.9	2,056.7:1
<=24	15.9	100.0	16.4	3,079.9:1
<=27	22.2	99.9	22.9	761.8:1
<=29	26.7	99.9	27.5	917.8:1
<=31	31.3	99.9	32.3	1,077.0:1
<=33	36.1	99.9	37.3	930.1:1
<=35	42.0	99.9	43.4	1,082.6:1
<=37	47.7	99.9	49.2	1,228.7:1
<=39	52.3	99.8	53.9	591.5:1
<=41	58.1	99.8	59.9	658.0:1
<=43	63.3	99.8	65.2	552.5:1
<=45	67.0	99.8	69.1	452.7:1
<=47	70.6	99.7	72.7	331.7:1
<=50	75.6	99.7	77.8	302.7:1
<=54	81.3	99.5	83.6	191.1:1
<=58	86.3	99.3	88.5	141.1:1
<=62	90.8	99.0	92.8	96.0:1
<=68	95.5	98.2	96.9	54.7:1
<=100	100.0	96.8	100.0	30.4:1

Scorecard applied to the validation sample.

Tables for the $21.70/day 2011 PPP Poverty Line

Table 3 ($21.70/day 2011 PPP): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	100.0
18–21	100.0
22–24	100.0
25–27	100.0
28–29	100.0
30–31	100.0
32–33	100.0
34–35	100.0
36–37	100.0
38–39	100.0
40–41	100.0
42–43	100.0
44–45	100.0
46–47	100.0
48–50	100.0
51–54	100.0
55–58	100.0
59–62	100.0
63–68	100.0
69–100	99.5

Table 5 ($21.70/day 2011 PPP): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	0.0	0.0	0.0	0.1
18–21	0.0	0.0	0.0	0.0
22–24	–0.1	0.1	0.1	0.1
25–27	+0.3	0.4	0.5	0.6
28–29	–0.1	0.1	0.1	0.1
30–31	–0.1	0.1	0.1	0.1
32–33	0.0	0.1	0.1	0.2
34–35	–0.1	0.1	0.1	0.1
36–37	–0.1	0.1	0.1	0.1
38–39	+0.7	0.6	0.7	0.9
40–41	–0.6	0.3	0.3	0.3
42–43	–0.4	0.3	0.3	0.3
44–45	–0.3	0.4	0.5	0.6
46–47	+2.0	1.6	1.9	2.3
48–50	–0.4	0.4	0.4	0.6
51–54	+1.1	1.0	1.2	1.5
55–58	+0.5	1.3	1.4	1.8
59–62	+0.4	1.5	1.8	2.2
63–68	+7.8	3.5	4.2	5.4
69–100	–1.5	3.5	4.4	5.4

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 ($21.70/day 2011 PPP): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.5	6.8	44.7	65.1
4	+0.6	18.0	22.2	32.8
8	+0.5	11.0	14.9	25.9
16	+0.6	8.2	10.4	17.1
32	+0.3	5.4	7.1	10.6
64	+0.3	4.1	5.1	7.4
128	+0.4	3.1	3.7	5.5
256	+0.4	2.3	2.8	3.7
512	+0.4	1.6	1.8	2.4
1,024	+0.4	1.1	1.4	1.8
2,048	+0.4	0.8	0.9	1.3
4,096	+0.4	0.6	0.7	0.9
8,192	+0.4	0.4	0.5	0.6
16,384	+0.4	0.3	0.3	0.5

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 ($21.70/day 2011 PPP): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.3	91.6	0.0	3.2	8.4	–89.1
<=21	10.6	86.2	0.0	3.2	13.8	–78.1
<=24	15.9	80.9	0.0	3.2	19.0	–67.2
<=27	22.1	74.7	0.0	3.2	25.3	–54.3
<=29	26.7	70.2	0.0	3.2	29.8	–44.9
<=31	31.3	65.5	0.0	3.2	34.4	–35.3
<=33	36.1	60.7	0.0	3.1	39.2	–25.4
<=35	42.0	54.8	0.0	3.1	45.1	–13.2
<=37	47.7	49.2	0.0	3.1	50.8	–1.5
<=39	52.2	44.7	0.1	3.1	55.3	+7.9
<=41	58.0	38.8	0.1	3.1	61.1	+20.0
<=43	63.2	33.7	0.1	3.1	66.2	+30.6
<=45	66.9	29.9	0.1	3.0	69.9	+38.3
<=47	70.3	26.5	0.2	3.0	73.3	+45.5
<=50	75.3	21.5	0.2	2.9	78.2	+55.8
<=54	80.9	15.9	0.4	2.8	83.6	+67.5
<=58	85.7	11.1	0.6	2.6	88.3	+77.7
<=62	89.9	6.9	0.9	2.2	92.1	+86.6
<=68	93.8	3.0	1.7	1.5	95.3	+95.6
<=100	96.8	0.0	3.2	0.0	96.8	+96.7

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 ($21.70/day 2011 PPP): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	99.9	5.4	1,019.0:1
<=21	10.6	100.0	10.9	2,056.7:1
<=24	15.9	100.0	16.4	3,079.9:1
<=27	22.2	99.9	22.9	761.8:1
<=29	26.7	99.9	27.5	917.8:1
<=31	31.3	99.9	32.3	1,077.0:1
<=33	36.1	99.9	37.3	930.1:1
<=35	42.0	99.9	43.4	1,082.6:1
<=37	47.7	99.9	49.2	1,228.7:1
<=39	52.3	99.8	53.9	591.5:1
<=41	58.1	99.8	59.9	658.0:1
<=43	63.3	99.8	65.2	552.5:1
<=45	67.0	99.8	69.1	452.7:1
<=47	70.6	99.7	72.7	331.7:1
<=50	75.6	99.7	77.8	302.7:1
<=54	81.3	99.5	83.6	191.1:1
<=58	86.3	99.3	88.5	141.1:1
<=62	90.8	99.0	92.8	96.0:1
<=68	95.5	98.2	96.9	54.7:1
<=100	100.0	96.8	100.0	30.4:1

Scorecard applied to the validation sample.

Tables for the Line Marking the Poorest Half of People below 100% of the National Poverty Line

Table 3 (Line marking the poorest half of people below 100% of the national line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	66.4
18–21	55.4
22–24	53.6
25–27	44.7
28–29	34.6
30–31	34.6
32–33	34.6
34–35	28.9
36–37	23.7
38–39	20.0
40–41	16.6
42–43	14.9
44–45	10.0
46–47	9.3
48–50	9.0
51–54	4.5
55–58	3.7
59–62	2.6
63–68	0.9
69–100	0.0

Table 5 (Line marking the poorest half of people below 100% of the national line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+17.9	4.1	4.6	6.3
18–21	+11.1	3.3	3.9	4.8
22–24	+15.0	3.7	4.5	5.8
25–27	–5.9	4.6	4.9	5.7
28–29	–0.8	3.5	4.1	5.5
30–31	–5.2	4.7	5.3	6.7
32–33	+1.4	3.8	4.5	6.1
34–35	+4.5	2.8	3.2	4.1
36–37	–5.0	4.3	4.6	5.8
38–39	+8.0	2.0	2.3	3.0
40–41	+7.4	1.4	1.7	2.2
42–43	+6.5	1.6	2.0	2.6
44–45	–15.3	10.1	10.4	11.2
46–47	+0.3	2.0	2.4	3.3
48–50	+3.2	1.5	1.7	2.3
51–54	+0.8	0.9	1.1	1.4
55–58	+0.9	0.9	1.0	1.4
59–62	–2.5	2.3	2.5	3.1
63–68	–1.0	0.9	1.0	1.3
69–100	0.0	0.0	0.0	0.0

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (Line marking the poorest half of people below 100% of the national line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	0.0	65.9	70.2	80.9
4	+1.5	34.9	40.3	57.9
8	+1.7	27.3	32.6	41.5
16	+1.8	20.2	23.8	31.6
32	+2.0	14.4	17.8	22.5
64	+2.1	10.1	11.9	15.7
128	+2.1	7.5	8.7	11.1
256	+2.2	5.3	5.9	8.2
512	+2.2	3.5	4.3	5.8
1,024	+2.2	2.5	2.9	3.7
2,048	+2.2	1.8	2.2	2.7
4,096	+2.2	1.3	1.5	2.0
8,192	+2.2	0.9	1.1	1.4
16,384	+2.2	0.7	0.7	1.0

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (Line marking the poorest half of people below 100% of the national line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	3.5	20.6	1.8	74.1	77.6	–63.7
<=21	6.3	17.8	4.4	71.5	77.8	–30.0
<=24	8.6	15.5	7.3	68.6	77.1	+1.4
<=27	11.6	12.5	10.6	65.3	76.9	+40.0
<=29	13.5	10.6	13.2	62.7	76.1	+45.1
<=31	15.0	9.1	16.3	59.6	74.7	+32.4
<=33	16.5	7.6	19.6	56.3	72.9	+18.9
<=35	18.1	6.0	23.9	52.0	70.1	+0.8
<=37	19.6	4.5	28.1	47.8	67.3	–16.7
<=39	20.4	3.7	31.8	44.1	64.5	–32.1
<=41	21.3	2.8	36.8	39.1	60.3	–52.8
<=43	22.0	2.1	41.3	34.6	56.5	–71.4
<=45	22.5	1.6	44.5	31.4	54.0	–84.5
<=47	22.9	1.2	47.6	28.3	51.2	–97.6
<=50	23.3	0.8	52.2	23.7	47.0	–116.7
<=54	23.7	0.4	57.6	18.3	41.9	–139.1
<=58	23.9	0.2	62.5	13.4	37.3	–159.2
<=62	24.0	0.1	66.8	9.1	33.1	–177.2
<=68	24.1	0.0	71.4	4.5	28.6	–196.4
<=100	24.1	0.0	75.9	0.0	24.1	–214.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (Line marking the poorest half of people below 100% of the national line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	66.2	14.5	2.0:1
<=21	10.6	59.0	26.0	1.4:1
<=24	15.9	53.9	35.5	1.2:1
<=27	22.2	52.2	48.0	1.1:1
<=29	26.7	50.4	55.9	1.0:1
<=31	31.3	48.0	62.4	0.9:1
<=33	36.1	45.8	68.6	0.8:1
<=35	42.0	43.1	75.1	0.8:1
<=37	47.7	41.0	81.2	0.7:1
<=39	52.2	39.1	84.7	0.6:1
<=41	58.1	36.6	88.2	0.6:1
<=43	63.3	34.7	91.1	0.5:1
<=45	67.0	33.6	93.6	0.5:1
<=47	70.5	32.5	95.1	0.5:1
<=50	75.6	30.9	96.8	0.4:1
<=54	81.3	29.1	98.2	0.4:1
<=58	86.3	27.6	99.0	0.4:1
<=62	90.8	26.4	99.6	0.4:1
<=68	95.5	25.2	100.0	0.3:1
<=100	100.0	24.1	100.0	0.3:1

Scorecard applied to the validation sample.

Tables for the First-Quintile (20th-Percentile) Poverty Line

Table 3 (First-quintile line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	50.5
18–21	37.2
22–24	32.0
25–27	25.5
28–29	22.4
30–31	21.5
32–33	18.3
34–35	14.8
36–37	13.0
38–39	10.6
40–41	8.0
42–43	6.6
44–45	4.5
46–47	4.5
48–50	4.5
51–54	1.8
55–58	1.2
59–62	0.6
63–68	0.6
69–100	0.0

Table 5 (First-quintile line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+11.9	3.5	4.1	5.6
18–21	+6.6	3.0	3.5	4.7
22–24	+10.5	2.9	3.4	4.8
25–27	–11.4	7.4	7.7	8.6
28–29	+0.5	2.8	3.4	4.7
30–31	+1.6	3.7	4.6	5.6
32–33	+7.2	1.8	2.3	3.0
34–35	+3.4	2.2	2.6	3.3
36–37	–2.9	2.9	3.4	4.9
38–39	+4.4	1.3	1.5	2.2
40–41	+4.4	0.8	1.0	1.3
42–43	+3.1	0.8	1.0	1.3
44–45	–13.2	9.0	9.5	10.1
46–47	+0.8	1.3	1.6	2.0
48–50	+2.2	0.7	0.8	1.1
51–54	+0.3	0.5	0.6	0.8
55–58	+0.3	0.5	0.6	0.8
59–62	–0.1	0.4	0.5	0.6
63–68	+0.4	0.2	0.2	0.3
69–100	0.0	0.0	0.0	0.0

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (First-quintile line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.2	57.9	67.9	73.0
4	+0.7	29.4	37.1	48.9
8	+1.4	22.7	26.8	36.1
16	+1.1	17.2	20.1	26.3
32	+1.3	11.6	14.6	19.3
64	+1.3	8.3	10.0	13.9
128	+1.5	6.0	7.3	9.1
256	+1.5	4.3	5.1	6.4
512	+1.5	3.0	3.5	4.6
1,024	+1.5	2.0	2.3	3.2
2,048	+1.5	1.4	1.7	2.3
4,096	+1.5	1.0	1.2	1.7
8,192	+1.5	0.8	0.9	1.3
16,384	+1.5	0.6	0.7	0.8

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (First-quintile line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	2.7	11.9	2.6	82.9	85.6	–45.4
<=21	4.6	10.0	6.0	79.4	84.0	+4.3
<=24	6.0	8.5	9.8	75.6	81.6	+32.5
<=27	8.1	6.5	14.1	71.3	79.4	+3.2
<=29	9.3	5.3	17.4	68.0	77.3	–19.6
<=31	10.1	4.5	21.2	64.2	74.3	–45.7
<=33	10.9	3.7	25.3	60.2	71.0	–73.3
<=35	11.7	2.9	30.4	55.1	66.7	–108.4
<=37	12.4	2.1	35.3	50.2	62.6	–142.0
<=39	12.9	1.7	39.4	46.1	58.9	–170.2
<=41	13.3	1.3	44.8	40.6	53.9	–207.8
<=43	13.6	0.9	49.7	35.8	49.4	–240.8
<=45	13.9	0.7	53.1	32.3	46.2	–264.7
<=47	14.1	0.5	56.5	28.9	43.0	–287.8
<=50	14.3	0.3	61.3	24.1	38.4	–320.7
<=54	14.5	0.1	66.9	18.6	33.0	–358.9
<=58	14.5	0.1	71.8	13.6	28.1	–393.0
<=62	14.6	0.0	76.3	9.2	23.7	–423.4
<=68	14.6	0.0	81.0	4.5	19.0	–455.8
<=100	14.6	0.0	85.4	0.0	14.6	–486.4

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (First-quintile line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	51.4	18.5	1.1:1
<=21	10.6	43.3	31.5	0.8:1
<=24	15.9	38.1	41.5	0.6:1
<=27	22.2	36.3	55.3	0.6:1
<=29	26.7	34.7	63.6	0.5:1
<=31	31.3	32.2	69.2	0.5:1
<=33	36.1	30.1	74.6	0.4:1
<=35	42.0	27.8	80.1	0.4:1
<=37	47.7	26.1	85.4	0.4:1
<=39	52.3	24.7	88.4	0.3:1
<=41	58.1	22.8	91.1	0.3:1
<=43	63.3	21.5	93.5	0.3:1
<=45	67.0	20.7	95.4	0.3:1
<=47	70.6	19.9	96.5	0.2:1
<=50	75.6	18.9	98.0	0.2:1
<=54	81.3	17.8	99.2	0.2:1
<=58	86.3	16.8	99.6	0.2:1
<=62	90.8	16.0	99.9	0.2:1
<=68	95.5	15.2	100.0	0.2:1
<=100	100.0	14.6	100.0	0.2:1

Scorecard applied to the validation sample.

Tables for the Second-Quintile (40th-Percentile) Poverty Line

Table 3 (Second-quintile line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	77.1
18–21	66.6
22–24	64.7
25–27	53.7
28–29	45.1
30–31	45.1
32–33	43.3
34–35	35.6
36–37	32.9
38–39	29.3
40–41	24.1
42–43	21.3
44–45	18.8
46–47	13.6
48–50	12.7
51–54	6.2
55–58	5.6
59–62	3.9
63–68	1.6
69–100	0.0

Table 5 (Second-quintile line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+13.2	4.2	5.1	6.9
18–21	+12.2	3.5	4.2	5.5
22–24	+15.3	4.1	4.8	6.4
25–27	–1.5	3.2	4.0	4.9
28–29	+2.3	3.8	4.4	5.6
30–31	+0.5	4.2	5.0	7.0
32–33	+2.1	3.7	4.7	6.0
34–35	–4.1	3.7	4.0	5.3
36–37	–0.5	3.5	4.3	5.8
38–39	+8.8	2.9	3.4	4.3
40–41	+9.4	1.8	2.1	2.8
42–43	+6.9	2.1	2.5	3.5
44–45	–13.5	9.1	9.4	10.2
46–47	+0.8	2.3	2.8	3.9
48–50	+3.6	1.6	2.0	2.5
51–54	–5.1	3.9	4.1	4.6
55–58	–1.3	2.0	2.4	3.2
59–62	–2.4	2.2	2.5	3.3
63–68	–0.5	0.9	1.0	1.3
69–100	0.0	0.0	0.0	0.0

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (Second-quintile line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	–0.9	70.3	73.9	85.7
4	+1.3	38.6	47.3	60.8
8	+1.3	28.5	33.9	44.4
16	+1.4	20.5	25.8	32.8
32	+2.2	15.4	18.8	24.3
64	+2.1	10.9	12.7	17.3
128	+2.2	8.0	9.7	12.9
256	+2.3	5.6	6.6	8.6
512	+2.3	4.0	4.7	6.4
1,024	+2.3	2.7	3.1	4.0
2,048	+2.3	2.0	2.2	2.8
4,096	+2.3	1.4	1.6	2.3
8,192	+2.4	1.0	1.2	1.5
16,384	+2.4	0.7	0.8	1.1

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (Second-quintile line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	3.9	26.9	1.3	67.9	71.8	–70.2
<=21	7.3	23.5	3.3	65.9	73.2	–41.9
<=24	10.1	20.7	5.8	63.4	73.5	–15.6
<=27	13.5	17.3	8.7	60.5	74.0	+15.8
<=29	15.8	15.0	10.9	58.3	74.1	+38.0
<=31	17.7	13.0	13.6	55.6	73.4	+55.9
<=33	19.7	11.1	16.4	52.8	72.5	+46.6
<=35	21.9	8.9	20.1	49.1	71.0	+34.7
<=37	23.9	6.9	23.8	45.4	69.2	+22.6
<=39	25.1	5.7	27.2	42.0	67.1	+11.7
<=41	26.4	4.4	31.7	37.5	63.8	–3.1
<=43	27.4	3.4	35.9	33.3	60.7	–16.5
<=45	28.3	2.5	38.7	30.5	58.8	–25.7
<=47	28.9	1.9	41.7	27.6	56.5	–35.3
<=50	29.6	1.2	46.0	23.2	52.8	–49.4
<=54	30.1	0.7	51.2	18.0	48.2	–66.2
<=58	30.5	0.3	55.9	13.3	43.8	–81.5
<=62	30.7	0.1	60.2	9.1	39.7	–95.3
<=68	30.8	0.0	64.8	4.5	35.2	–110.3
<=100	30.8	0.0	69.2	0.0	30.8	–124.7

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (Second-quintile line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	74.8	12.8	3.0:1
<=21	10.6	68.6	23.6	2.2:1
<=24	15.9	63.7	32.8	1.8:1
<=27	22.2	60.8	43.8	1.6:1
<=29	26.7	59.2	51.3	1.5:1
<=31	31.3	56.7	57.6	1.3:1
<=33	36.1	54.5	63.9	1.2:1
<=35	42.0	52.1	71.2	1.1:1
<=37	47.7	50.0	77.5	1.0:1
<=39	52.3	48.0	81.4	0.9:1
<=41	58.1	45.4	85.6	0.8:1
<=43	63.3	43.3	89.0	0.8:1
<=45	67.0	42.3	92.0	0.7:1
<=47	70.6	41.0	93.9	0.7:1
<=50	75.6	39.1	96.0	0.6:1
<=54	81.3	37.1	97.9	0.6:1
<=58	86.3	35.3	98.9	0.5:1
<=62	90.8	33.8	99.6	0.5:1
<=68	95.5	32.2	100.0	0.5:1
<=100	100.0	30.8	100.0	0.4:1

Scorecard applied to the validation sample.

Tables for the Median (50th-Percentile) Poverty Line

Table 3 (Median line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	84.1
18–21	75.3
22–24	74.1
25–27	67.2
28–29	62.0
30–31	60.3
32–33	57.8
34–35	49.0
36–37	46.7
38–39	39.5
40–41	33.6
42–43	30.2
44–45	27.9
46–47	20.5
48–50	17.7
51–54	10.9
55–58	9.1
59–62	6.6
63–68	3.2
69–100	0.2

Table 5 (Median line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+15.0	4.4	5.4	7.1
18–21	+11.2	3.7	4.5	5.8
22–24	+13.7	4.0	4.7	6.1
25–27	–0.7	2.8	3.5	4.7
28–29	+5.3	4.2	5.0	6.7
30–31	+3.6	4.0	5.2	6.3
32–33	+4.9	3.7	4.4	5.8
34–35	–1.3	3.3	4.1	5.4
36–37	+0.6	3.9	4.6	5.9
38–39	+3.4	4.0	4.8	6.2
40–41	+7.4	2.6	3.2	4.4
42–43	+7.3	2.6	3.3	4.0
44–45	–11.6	8.2	8.5	9.1
46–47	–2.0	3.0	3.6	4.7
48–50	+1.1	2.3	2.6	3.5
51–54	–3.3	3.0	3.3	4.0
55–58	+0.7	2.1	2.6	3.3
59–62	–0.3	2.1	2.5	3.4
63–68	0.0	1.0	1.2	1.6
69–100	–1.2	1.0	1.1	1.3

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (Median line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.4	68.5	78.8	87.5
4	+1.2	41.4	48.5	63.6
8	+1.6	31.5	37.3	46.0
16	+1.7	23.0	28.1	38.4
32	+2.4	16.2	19.5	26.4
64	+2.3	11.4	13.2	17.3
128	+2.5	8.3	10.0	13.0
256	+2.6	6.2	7.2	9.6
512	+2.7	4.4	5.0	6.5
1,024	+2.7	3.0	3.5	4.3
2,048	+2.7	2.1	2.5	3.2
4,096	+2.7	1.5	1.8	2.5
8,192	+2.8	1.1	1.3	1.7
16,384	+2.8	0.7	0.9	1.2

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (Median line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	4.3	35.5	1.0	59.3	63.5	–76.0
<=21	8.2	31.6	2.4	57.8	66.0	–52.8
<=24	11.6	28.1	4.2	56.0	67.6	–30.8
<=27	15.8	23.9	6.3	53.9	69.7	–4.5
<=29	18.8	21.0	7.9	52.3	71.1	+14.4
<=31	21.4	18.4	9.9	50.3	71.7	+32.6
<=33	24.0	15.8	12.2	48.1	72.0	+51.1
<=35	26.9	12.9	15.2	45.1	71.9	+61.8
<=37	29.4	10.4	18.3	41.9	71.3	+53.9
<=39	31.1	8.7	21.2	39.1	70.1	+46.7
<=41	33.0	6.7	25.1	35.2	68.2	+36.9
<=43	34.6	5.2	28.7	31.6	66.2	+27.9
<=45	35.8	3.9	31.2	29.0	64.9	+21.5
<=47	36.8	3.0	33.8	26.5	63.2	+15.0
<=50	37.9	1.8	37.6	22.6	60.5	+5.3
<=54	38.8	1.0	42.5	17.7	56.5	–7.0
<=58	39.2	0.5	47.1	13.1	52.3	–18.5
<=62	39.5	0.3	51.3	8.9	48.4	–29.1
<=68	39.7	0.1	55.8	4.4	44.1	–40.5
<=100	39.8	0.0	60.2	0.0	39.8	–51.5

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (Median line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	81.3	10.7	4.3:1
<=21	10.6	77.1	20.6	3.4:1
<=24	15.9	73.3	29.3	2.7:1
<=27	22.2	71.4	39.8	2.5:1
<=29	26.7	70.4	47.2	2.4:1
<=31	31.3	68.3	53.8	2.2:1
<=33	36.1	66.3	60.3	2.0:1
<=35	42.0	63.9	67.5	1.8:1
<=37	47.7	61.6	73.9	1.6:1
<=39	52.3	59.5	78.2	1.5:1
<=41	58.1	56.8	83.1	1.3:1
<=43	63.3	54.7	87.0	1.2:1
<=45	67.0	53.5	90.1	1.1:1
<=47	70.6	52.1	92.5	1.1:1
<=50	75.6	50.2	95.4	1.0:1
<=54	81.3	47.7	97.5	0.9:1
<=58	86.3	45.4	98.6	0.8:1
<=62	90.8	43.5	99.3	0.8:1
<=68	95.5	41.5	99.8	0.7:1
<=100	100.0	39.8	100.0	0.7:1

Scorecard applied to the validation sample.

Tables for the Third-Quintile (60^{th}-Percentile) Poverty Line

Table 3 (Third-quintile line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	91.0
18–21	83.1
22–24	80.6
25–27	76.1
28–29	72.9
30–31	70.1
32–33	67.7
34–35	62.8
36–37	59.6
38–39	53.7
40–41	49.1
42–43	45.9
44–45	37.3
46–47	31.8
48–50	27.2
51–54	18.9
55–58	16.3
59–62	9.3
63–68	6.4
69–100	1.2

Table 5 (Third-quintile line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+3.0	2.4	2.8	3.9
18–21	+1.0	2.8	3.2	4.0
22–24	+11.0	4.1	4.8	6.1
25–27	–0.3	2.5	3.1	4.2
28–29	+7.2	4.4	5.3	7.3
30–31	+3.6	4.1	4.8	6.7
32–33	+1.3	3.5	4.0	5.3
34–35	+1.6	3.2	3.8	5.3
36–37	+0.7	3.8	4.5	6.1
38–39	+7.7	4.2	4.9	6.7
40–41	+11.5	3.3	3.8	4.9
42–43	+8.0	3.4	4.0	5.1
44–45	–12.4	8.4	8.8	9.4
46–47	–6.2	5.2	5.6	6.4
48–50	+4.8	2.6	3.1	4.2
51–54	+1.1	2.8	3.3	4.4
55–58	+2.2	2.4	2.8	3.8
59–62	0.0	2.3	2.6	3.6
63–68	+1.8	1.1	1.5	1.8
69–100	–0.3	0.8	0.9	1.1

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (Third-quintile line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.7	67.8	80.8	89.1
4	+1.4	40.9	48.1	59.5
8	+1.9	31.2	36.3	47.8
16	+1.9	22.8	27.3	37.0
32	+2.4	15.9	19.2	25.1
64	+2.4	11.8	13.7	17.2
128	+2.5	8.5	9.6	12.5
256	+2.6	6.0	6.8	8.4
512	+2.7	4.1	4.9	6.5
1,024	+2.7	3.0	3.5	4.6
2,048	+2.8	2.2	2.6	3.4
4,096	+2.8	1.6	1.8	2.5
8,192	+2.8	1.1	1.3	1.7
16,384	+2.8	0.7	0.9	1.1

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (Third-quintile line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	4.7	44.6	0.6	50.1	54.8	–79.8
<=21	9.2	40.1	1.4	49.3	58.5	–59.8
<=24	13.3	36.0	2.6	48.1	61.3	–40.9
<=27	18.0	31.3	4.1	46.6	64.6	–18.5
<=29	21.4	27.8	5.3	45.5	66.9	–2.3
<=31	24.6	24.7	6.7	44.0	68.6	+13.5
<=33	27.8	21.5	8.3	42.4	70.2	+29.7
<=35	31.5	17.8	10.5	40.2	71.7	+49.2
<=37	34.8	14.5	13.0	37.8	72.5	+67.3
<=39	36.9	12.3	15.3	35.4	72.3	+68.9
<=41	39.7	9.6	18.5	32.2	71.9	+62.5
<=43	42.0	7.3	21.3	29.4	71.4	+56.8
<=45	43.6	5.7	23.4	27.3	71.0	+52.6
<=47	45.0	4.3	25.6	25.1	70.1	+48.1
<=50	46.5	2.8	29.1	21.6	68.1	+41.0
<=54	47.6	1.7	33.7	17.0	64.6	+31.7
<=58	48.4	0.9	37.9	12.8	61.2	+23.1
<=62	48.9	0.4	41.9	8.8	57.7	+15.0
<=68	49.2	0.1	46.3	4.4	53.6	+6.0
<=100	49.3	0.0	50.7	0.0	49.3	–2.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (Third-quintile line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	89.3	9.5	8.4:1
<=21	10.6	86.7	18.7	6.5:1
<=24	15.9	83.5	26.9	5.1:1
<=27	22.2	81.3	36.6	4.4:1
<=29	26.7	80.3	43.5	4.1:1
<=31	31.3	78.6	50.0	3.7:1
<=33	36.1	77.0	56.4	3.3:1
<=35	42.0	75.0	63.9	3.0:1
<=37	47.7	72.8	70.5	2.7:1
<=39	52.3	70.7	75.0	2.4:1
<=41	58.1	68.2	80.4	2.1:1
<=43	63.3	66.4	85.2	2.0:1
<=45	67.0	65.1	88.5	1.9:1
<=47	70.5	63.7	91.2	1.8:1
<=50	75.6	61.5	94.3	1.6:1
<=54	81.3	58.6	96.6	1.4:1
<=58	86.3	56.1	98.3	1.3:1
<=62	90.8	53.8	99.2	1.2:1
<=68	95.5	51.5	99.9	1.1:1
<=100	100.0	49.3	100.0	1.0:1

Scorecard applied to the validation sample.

Tables for the Fourth-Quintile (80th-Percentile) Poverty Line

Table 3 (Fourth-quintile line): Scores and their corresponding estimates of poverty likelihoods

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–17	97.6
18–21	95.1
22–24	93.9
25–27	91.7
28–29	90.4
30–31	90.4
32–33	89.2
34–35	85.4
36–37	83.6
38–39	83.0
40–41	76.0
42–43	74.4
44–45	67.9
46–47	64.4
48–50	55.7
51–54	46.9
55–58	40.3
59–62	28.3
63–68	18.2
69–100	7.5

Table 5 (Fourth-quintile line): Errors in a household's poverty likelihood (average of differences between estimated and observed values) by score range, with confidence intervals

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Error	90-percent	95-percent	99-percent
0–17	+4.5	1.9	2.4	3.1
18–21	–3.1	1.9	2.0	2.1
22–24	+13.3	4.0	4.9	6.2
25–27	+1.5	1.8	2.2	2.7
28–29	+15.5	4.9	5.6	7.8
30–31	+0.4	2.0	2.3	3.0
32–33	+1.0	2.2	2.7	3.5
34–35	+1.5	2.5	3.0	3.8
36–37	+3.4	3.5	4.2	5.6
38–39	+13.0	4.0	4.9	6.8
40–41	–1.1	3.0	3.5	4.7
42–43	+11.8	4.1	4.7	6.1
44–45	–9.7	6.3	6.7	7.4
46–47	+2.0	3.9	4.7	6.4
48–50	+12.5	3.7	4.4	5.7
51–54	+5.9	3.4	3.9	5.2
55–58	+6.3	3.1	3.6	4.9
59–62	+8.2	2.7	3.4	4.7
63–68	+1.7	2.7	3.2	4.4
69–100	+3.5	1.1	1.3	1.7

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 6 (Fourth-quintile line): Errors in households' poverty rates at a point in time (average of differences between estimated and observed values), with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+1.6	68.4	75.0	88.5
4	+2.4	38.0	45.0	56.2
8	+3.0	29.5	35.3	47.4
16	+3.6	22.5	25.9	37.7
32	+4.2	16.4	19.7	25.0
64	+4.4	12.0	14.1	17.7
128	+4.6	8.1	9.4	13.2
256	+4.7	6.0	6.9	9.7
512	+4.8	4.2	5.0	6.4
1,024	+4.8	2.9	3.5	4.6
2,048	+4.7	2.1	2.5	3.5
4,096	+4.7	1.4	1.8	2.3
8,192	+4.8	1.0	1.3	1.6
16,384	+4.8	0.7	0.8	1.1

Scorecard applied to 1,000 bootstraps of n = 16,384 from validation sample.

Table 9 (Fourth-quintile line): Percentages of households by cut-off score and targeting classification, along with the hit rate and BPAC

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=17	5.0	64.6	0.2	30.2	35.2	–85.2
<=21	10.3	59.3	0.4	30.1	40.3	–70.0
<=24	15.1	54.5	0.8	29.6	44.6	–55.6
<=27	20.8	48.8	1.4	29.1	49.9	–38.2
<=29	24.8	44.8	1.9	28.5	53.3	–26.0
<=31	28.9	40.7	2.4	28.0	56.9	–13.4
<=33	33.1	36.5	3.0	27.4	60.5	–0.5
<=35	38.2	31.4	3.8	26.6	64.8	+15.4
<=37	43.0	26.6	4.8	25.7	68.6	+30.3
<=39	46.4	23.2	5.9	24.5	70.9	+41.7
<=41	50.9	18.7	7.2	23.2	74.1	+56.7
<=43	54.7	14.9	8.6	21.8	76.5	+69.6
<=45	57.3	12.2	9.7	20.7	78.1	+78.8
<=47	59.6	10.0	11.0	19.5	79.1	+84.3
<=50	62.5	7.1	13.1	17.3	79.8	+81.2
<=54	65.3	4.3	16.0	14.4	79.7	+77.0
<=58	67.3	2.3	19.0	11.4	78.7	+72.6
<=62	68.5	1.1	22.3	8.1	76.6	+68.0
<=68	69.4	0.2	26.2	4.2	73.6	+62.4
<=100	69.6	0.0	30.4	0.0	69.6	+56.3

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100. Scorecard applied to the validation sample.

Table 10 (Fourth-quintile line): Share of all households who are targeted (that is, score at or below a cut-off), share of targeted households who are poor, share of poor households who are targeted, and number of poor households successfully targeted per non-poor household mistakenly targeted

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=17	5.3	95.3	7.2	20.4:1
<=21	10.6	96.7	14.7	29.0:1
<=24	15.9	94.8	21.6	18.2:1
<=27	22.2	93.9	29.9	15.3:1
<=29	26.7	92.8	35.6	13.0:1
<=31	31.3	92.3	41.5	12.0:1
<=33	36.1	91.7	47.6	11.0:1
<=35	42.0	90.9	54.9	10.0:1
<=37	47.7	90.0	61.7	9.0:1
<=39	52.3	88.7	66.6	7.8:1
<=41	58.1	87.6	73.1	7.0:1
<=43	63.3	86.4	78.6	6.4:1
<=45	67.0	85.5	82.4	5.9:1
<=47	70.6	84.5	85.7	5.4:1
<=50	75.6	82.7	89.8	4.8:1
<=54	81.3	80.3	93.9	4.1:1
<=58	86.3	77.9	96.7	3.5:1
<=62	90.8	75.5	98.5	3.1:1
<=68	95.5	72.6	99.7	2.6:1
<=100	100.0	69.6	100.0	2.3:1

Scorecard applied to the validation sample.