Simple Poverty Scorecard® Tool
Iraq

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Abstract

The Scorocs Simple Poverty Scorecard-brand poverty-assessment tool is a low-cost, transparent way for pro-poor programs in Iraq to prove and improve their social performance by getting to know their participants better. Responses to the scorecard's 10 questions can be collected in about 10 minutes and then used to estimate participants' consumption-based poverty rates, to track changes in poverty rates, or to segment participants for differentiated treatment.

Acknowledgements

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Scorocs® Simple Poverty Scorecard® Tool

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

Indicator	Response	Points
1. In which governorate does the household live?	A. Al-Qadisiya, or Al-Muthanna	0
	B. Thi-Qar	3
	C. Baghdad, Nineveh, or Missan	7
	D. Diala, or Duhouk	9
	E. Erbil, Kerbal, or Wasit	11
	F. Suleimaniya, or Salahuddin	14
	G. Basrah, Babil, Karkouk, Al-Anbar, or Al-Najaf	16
2. How many household members are there?	A. Ten or more	0
	B. Nine	8
	C. Eight	10
	D. Seven	14
	E. Six	20
	F. Five	24
	G. One, two, three, or four	38
3. What is the highest certificate that the male head/spouse attained?	A. None	0
	B. Elementary	1
	C. No male head/spouse	3
	D. Intermediate (middle school)	3
	E. Basic, secondary, vocational, or diploma from an institution	5
	F. Bachelor's degree, higher diploma, Master's, Ph.D, or other	8
4. How many bedrooms does the household have for its exclusive use?	A. None, or one	0
	B. Two	2
	C. Three or more	5
5. What is the principal material of the floor? (*as observed by enumerator*)	A. Concrete slab, dirt, or other	0
	B. Tile, or brick	3
6. What is the principal material of the walls? (*as observed by enumerator*)	A. Clay, bamboo, or other	0
	B. Stone	1
	C. Cement block, thermo-stone, or ready-made/pre-cast concrete	3
	D. Brick	5
7. Do any members of the household own a refrigerator or a freezer?	A. No	0
	B. Only refrigerator	1
	C. Freezer (regardless of refrigerator)	5
8. Do any members of the household own an electric washing machine?	A. No	0
	B. Yes	4
9. How many TVs are owned by members of the household?	A. None, or one	0
	B. Two	5
	C. Three or more	9
10. How many electric fans are owned by members of the household?	A. None, or one	0
	B. Two	2
	C. Three	3
	D. Four or more	7

Score:

Back-page Worksheet: Household Members

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 (if known). Circle the response to the first scorecard indicator based on the governorate where the household lives.

Then read to the respondent: *Please tell me the first names (or nicknames) of all the members of your household, starting with the head and his/her (eldest) spouse (if there is one). A* household *is a single person or a group of people who live together (regardless of blood or marital relationships), who share food, and who together meet their other basic needs. Household members must currently live and eat with the household and have done so for at least 15 of the last 30 days or expect to remain with the household from now on.*

Write down the first name/nickname of each member, beginning with the head and the (eldest) spouse of the head (if there is one). Mark the male head/spouse (if he exists). Record the number of household members in the scorecard header next to "Number of household members:". Then circle the response to the second scorecard indicator about the number of household members.

Read the third and fourth questions aloud, marking the respondent's answers. Record the answers to the fifth and sixth questions about the principal material of the floor and walls of the residence based on your own observation; ask the respondent these questions only if the response is not obvious to you. Finally, read the seventh to tenth questions aloud, marking the respondent's answers.

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

First name or nickname	**Head or spouse of head?**
1.	Head (male) Head (female)
2.	Spouse of head (male) (Eldest) spouse of head (female) Other
3.	Other
4.	Other
5.	Other
6.	Other
7.	Other
8.	Other
9.	Other
10.	Other
11.	Other
12.	Other
13.	Other
14.	Other
15.	Other
16.	Other
Number of household members:	—

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

	Poverty likelihood (%)		
	National (2012 def.)		
Score	100%	150%	200%
0–25	71.9	94.2	99.2
26–31	50.9	87.1	97.4
32–35	36.3	80.2	94.7
36–38	28.6	74.0	93.1
39–40	24.0	71.5	91.4
41–42	19.0	71.0	89.6
43–44	14.3	60.8	89.6
45–46	11.7	56.2	85.9
47–48	8.5	44.7	75.3
49–50	8.5	43.2	75.3
51–52	4.2	41.8	73.5
53–54	3.9	29.3	67.6
55–56	2.9	22.8	60.3
57–58	1.8	19.2	51.1
59–60	1.6	15.8	44.9
61–62	1.0	15.8	41.3
63–65	0.4	9.3	34.0
66–68	0.4	6.5	27.4
69–71	0.4	3.6	19.9
72–78	0.1	2.4	12.3
79–100	0.0	0.2	3.1

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

	Poverty likelihood (%)			
	Intl. 2011 PPP (2012 def.)			
Score	$1.90	$3.20	$5.50	$21.70
0–25	16.6	69.9	96.9	100.0
26–31	4.9	48.6	92.1	100.0
32–35	2.1	32.9	88.1	100.0
36–38	1.0	24.4	83.4	100.0
39–40	0.8	20.8	80.9	99.9
41–42	0.5	17.2	79.0	99.9
43–44	0.2	12.0	72.4	99.9
45–46	0.2	9.9	68.2	99.9
47–48	0.1	7.4	56.3	99.9
49–50	0.0	7.4	56.3	99.9
51–52	0.0	3.8	56.0	99.9
53–54	0.0	3.6	44.2	99.9
55–56	0.0	2.5	36.0	99.9
57–58	0.0	1.7	29.9	99.8
59–60	0.0	1.4	24.0	99.7
61–62	0.0	0.9	24.0	98.8
63–65	0.0	0.3	15.7	98.8
66–68	0.0	0.3	11.5	98.8
69–71	0.0	0.3	7.8	97.5
72–78	0.0	0.1	5.1	95.3
79–100	0.0	0.0	0.6	88.2

Look-up table to convert scores to poverty likelihoods: Percentile-based poverty lines

	Poverty likelihood (%)					
	Percentile-based lines (2012 def.)					
Score	10th	20th	40th	50th	60th	80th
0–25	51.3	72.1	89.9	94.1	97.0	99.7
26–31	29.5	51.1	79.9	86.9	92.1	98.6
32–35	16.5	36.5	67.9	78.8	88.2	96.2
36–38	10.8	28.8	60.6	73.2	84.1	95.7
39–40	9.6	24.1	55.0	71.1	81.4	95.5
41–42	6.9	20.1	54.6	69.7	79.2	95.2
43–44	4.6	14.6	45.8	59.2	73.6	95.2
45–46	3.0	11.8	42.7	54.7	68.6	92.1
47–48	1.8	8.6	31.1	44.0	56.6	84.3
49–50	1.1	8.6	28.3	40.3	56.6	84.3
51–52	1.1	4.4	20.9	40.2	56.2	83.8
53–54	1.1	3.9	15.6	27.8	45.1	79.5
55–56	0.5	2.9	11.0	21.8	36.2	72.2
57–58	0.5	1.8	10.2	18.5	30.0	63.5
59–60	0.5	1.6	8.9	15.4	24.0	59.8
61–62	0.3	1.0	8.1	15.4	24.0	51.6
63–65	0.0	0.4	3.6	9.0	16.0	44.8
66–68	0.0	0.4	2.5	6.2	11.6	41.4
69–71	0.0	0.4	1.6	3.6	8.0	30.4
72–78	0.0	0.1	1.0	2.4	5.5	21.8
79–100	0.0	0.0	0.0	0.2	0.6	6.2

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Iraq

1. Introduction

The Scorocs Simple Poverty Scorecard poverty-assessment tool for Iraq is a low-cost, transparent way for pro-poor programs to get know their participants better and so to prove and improve their social performance.

The scorecard can be used to estimate the likelihood that a participant has consumption below a given poverty line, to estimate participants' poverty rate at a point in time, to estimate the change in participants' poverty rate over time, 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 Iraq's 2012 Household Socio-Economic Survey, HSES) by Iraq's Central Organization for Statistics and Information Technology (COSIT) in cooperation with the Kurdistan Region Statistics Organization. The 2012 HSES runs about 70 pages and covers more than 1,000 questions, most of which have several follow-up questions or are repeated several times (for example, for each household member or for each type of crop or species of livestock). Surveyed households keep a food diary for seven days, and enumerators spend about two-days' worth of time with each surveyed household, spread over five visits in a two-week period.

In comparison, the scorecard's indirect approach is quick and low-cost. It uses 10 verifiable indicators drawn from the 2012 HSES (such as "How many bedrooms does the household have for its exclusive use?" and "How many TVs are owned by members of the household?"). Responses to the questions are used to get a score that is correlated with poverty status as measured by the exhaustive HSES 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 in Iraq. 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, programs, nor time.

The scorecard is a low-cost, consumption-based, and quantitative way to estimate the share of a program's participants who are below a given poverty line (for example, Iraq's national poverty line, or the World Bank's "international extreme poverty line" of $1.90/day 2011 PPP). The scorecard can also be used to estimate changes in poverty rates. While consumption surveys are costly even for governments, some pro-poor organizations may be able to implement the low-cost scorecard to help with monitoring poverty and (if desired) segmenting clients for differentiated treatment.

[1] Iraq's scorecard is not in the public domain; it is copyright © 2019 Scorocs.

The scorecard's technical approach 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", approaches that are straightforward and transparent are usually about as accurate as approaches that are complex and opaque (Schreiner, 2012a; Caire and Schreiner, 2012).

Beyond its low cost and transparency, the scorecard's technical approach 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, the tests are rarely applied to poverty-assessment tools.

The scorecard is based on data from Iraq's 2012 HSES. Indicators are selected to be:

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

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 or on hand-held devices in the field in about ten minutes.

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

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

Third, the scorecard can estimate annual changes in poverty rates. With two independent samples of participants' 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 participant's 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 pro-poor programs choose appropriate targeting cut-offs for their purposes, targeting accuracy is reported for a range of possible cut-offs.

This paper presents a single scorecard whose indicators and points are based on 150% of the national poverty line and data from a random sample of about three-fifths of households in the 2012 HSES. Scores from this one scorecard are calibrated with this same three-fifths of the HSES to poverty likelihoods for 13 poverty lines. Data from the other two-fifths of households in the 2012 HSES is used to validate the scorecard's accuracy for estimating households' poverty likelihoods, for estimating participants' poverty rate at a point in time, and for segmenting participants.

Given their assumptions, all three scorecard-based estimators (the poverty likelihood of a participant's household, the poverty rate at a point in time of a population of participants' households, and the change in the poverty rate over time of a population of participants' households) are *unbiased*. That is, the true value matches the average of estimates in repeated samples from a single, unchanging population in which the relationship between scorecard indicators and poverty is unchanging. Like all predictive models, the scorecard has estimation 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).[2]

Thus, while the indirect-scorecard approach is less costly than the direct-survey approach, the scorecard has estimation 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 average 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 150% of the national poverty line is +1.0 percentage points. The average across all 13 poverty lines of the absolute values of the average error is about 0.8 percentage points, and the maximum of the absolute values of the average error is 2.8 percentage points. These estimation errors are due to sampling variation, not bias; the average error would be zero if the whole 2012 HSES were to be repeatedly re-fielded and re-divided into sub-samples

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

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 ± 2.6 percentage points or smaller.

The scorecard's accuracy in practice for estimating changes in poverty rates over time is not known; there is no comparable data from a post-2012 HSES that could be used as a follow-up to estimate change against a baseline estimated from the 2012 HSES validation sample.

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 poverty likelihoods for individual households and poverty rates at a point in time for a population of participants' households. Section 7 discusses estimating changes in a poverty rate for a population of participants' households. Section 8 covers targeting. Section 9 places the scorecard here in the context of two related exercises for Iraq. 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 Iraq's 2012 HSES as closely as possible. The "Interview Guide" (and the "Back-page Worksheet") are integral parts of the scorecard for Iraq.

2. Data and poverty lines

This section presents the data used to construct and validate the scorecard. It also documents the definition of *poverty* as well as the 13 poverty lines to which scores are calibrated.

2.1 Data

Questions and points for the scorecard are selected (*constructed*) based on data from a random three-fifths of the 24,944 households in the 2012 HSES, Iraq's most-recent national household consumption survey. These same three-fifths of households are also used to associate (*calibrate*) scores with poverty likelihoods for all poverty lines.

Data from the other two-fifths of households from the 2012 HSES is used to test (*validate*) the scorecard's accuracy for point-in-time estimates of poverty rates *out-of-sample*, that is, with data that is not used in construction or calibration. Data from those same two-fifths of households are also used to test out-of-sample targeting accuracy.

The 2012 HSES was in the field from 16 January 2012 to 15 January 2013.

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) is below a given poverty line. The unit of analysis is either the household itself or a person in the household. By assumption, all members in a given household have the same poverty status (or estimated poverty likelihood).

2.2.1 Household-level estimates

To illustrate, suppose that a pro-poor program serves two households. The first household is poor (its per-capita 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 household-level poverty rate is the weighted[3] 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 household-level sampling 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 household-level sampling

[3] 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 household-level sampling weight, taken here to be one (1).

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 household-level sampling weights of the two households. Household-level sampling weights are used because the unit of analysis is the household.

2.2.2 Person-level estimates

Alternatively, a person-level poverty 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[4] 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 person-level sampling 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 person-level sampling weight because it has four members, and the zero represents its poverty status (non-poor) or its estimated poverty likelihood. The "$3 + 4$" in the denominator is the sum of the person-level sampling weights of the two households. Person-level sampling weights are used because the unit of analysis is the household member.

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

2.2.3 Participant-level estimates

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 estimated person-level poverty rate is then the participant-weighted average[5] 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 participant-level sampling 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 participant-level sampling 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 participant-level sampling weights of the two households. Participant-level sampling weights are used because the unit of analysis is the participant.[6]

To sum up, estimated poverty rates are weighted averages of households' poverty statuses (or estimated poverty likelihoods), where—assuming simple random sampling at the household level—the weights are the number of relevant units in the household. When reporting scorecard-based estimates, organizations should clearly state the unit of

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

[6] 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.

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 HSES for Iraq as a whole and for each Iraq's (pre-2014) 18 governorates by urban/rural/all.

Household-level poverty rates are reported because—as shown above— sampling is almost always done at the level of households and because household-level poverty likelihoods can be straightforwardly converted into poverty rates for other units of analysis. 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 Iraq. 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 consumption (IQD per person per day adjusted for price differences across regions and months during the 2012 HSES field work[7]) is below a given poverty line. Thus, a definition of *poverty* is a poverty line together with a measure of consumption.

[7] Amendola and Vecchi (2009a). The base month for temporal adjustments is not clear.

Amendola and Vecchi (2009b) document Iraq's definition of consumption.

Because pro-poor programs in Iraq may want to use different or various poverty lines, this paper calibrates scores from its single scorecard to poverty likelihoods for 13 lines:

- 100% of the national line
- 150% of the national line
- 200% of the national line
- $1.90/day 2011 PPP
- $3.20/day 2011 PPP
- $5.50/day 2011 PPP
- $21.70/day 2011 PPP
- First-decile (10^{th}-percentile) 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 lines

Iraq's national poverty line (usually called here "100% of the national line") is derived with the cost-of-basic-needs method (Ravallion, 1998). It is the sum of a minimum standard for food consumption and a minimum standard for non-food consumption (World Bank, 2013a, following Amendola and Vecchi, 2009c).

The food standard begins with a food basket with all items for which the 2012 HSES has data on amounts, prices, and Calories. The food standard is then the cost of 2,337 Calories from this basket—adjusted for price differences as noted above—for people in the second and third deciles of per-capita consumption in the 2012 HSES. The average food standard for Iraq in 2012 is IQD1,608 per person per day.

Iraq's national (food-plus-non-food) poverty line is the food standard, plus a minimum standard of non-food consumption that is defined separately for each of three regions (Kurdistan, Baghdad, and the rest). A region's non-food standard is the average of its lower and upper non-food standards:

- *Lower*: Average non-food consumption of people whose *total* consumption is close to the food standard
- *Upper*: Average non-food consumption of people whose *food* consumption is close to the food standard

In 2012, the average non-food standard is IQD1,930. The average national (food-plus-non-food) poverty line is then IQD3,538 per person per day (Table 1). This gives an all-Iraq household-level poverty rate of 14.6 percent and a person-level rate of 19.8 percent.[8]

150% and 200% of the national line are multiples of 100% of the national line. For 150% of the national line (the line used to construct the scorecard), the all-Iraq household-level poverty rate is 41.4 percent and the person-level rate is 51.0 percent (Table 1).

[8] World Bank (2013a, p. 20) has the same person-level poverty rate for 100% of the national line, suggesting that it uses the same data and calculations as this paper.

2.3.2 International 2011 PPP poverty lines

International 2011 PPP lines are derived from:

- 2011 PPP exchange rate for Iraq for "individual consumption expenditure by households":[9] IQD1,003.80 per $1.00
- Average (person-level) price deflators from the 2012 HSES microdata:
  - Regions: 1.00000
  - Months: 0.96909
- Consumer Price Index (CPI):[10]
  - Average during calendar-year 2011: 105.80
  - Average during field work for the 2012 HSES: 112.39

Given these parameters and households' regional and temporal price deflators, the $1.90/day 2011 PPP line for a given household is

$$\$1.90 \cdot 2011\,\text{PPP factor} \cdot \left(\frac{\text{CPI}_{\text{HSES}}}{\text{CPI}_{2011}}\right) \cdot \left(\frac{\text{HH Deflator}_{\text{region}}}{\text{Ave. Deflator}_{\text{region}}}\right) \cdot \left(\frac{\text{HH Deflator}_{\text{time}}}{\text{Ave. Deflator}_{\text{time}}}\right).$$

On average for Iraq as a whole, the $1.90/day line is IQD2,039 per person per day, giving a household-level poverty rate of 1.4 percent and a person-level rate of 2.1 percent (Table 1).

The World Bank's PovcalNet[11] reports a $1.90/day line of IQD2,022.72 per person per day (about IQD16 lower than here) and a person-level poverty rate of 2.5 percent (0.4 percentage points higher than here). PovcalNet's $1.90/day calculation differs from that here in three ways.

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[9] iresearch.worldbank.org/PovcalNet/Detail.aspx?Format=Detail&CO=IRQ_3&PPPO=1003.8&PLO=1.90&YO=2012&NumOfCountries=1, retrieved 10 January 2019.
[10] The monthly CPI is base = 100 on average in calendar-year 2010. data.imf.org/regular.aspx?key=61545861, retrieved 10 November 2017.
[11] iresearch.worldbank.org/PovcalNet/Detail.aspx?Format=Detail&CO=IRQ_3&PPPO=1003.8&PLO=1.90&YO=2012&NumOfCountries=1, retrieved 10 January 2019.

First, PovcalNet inflates the 2011 PPP factor from calendar-year 2011 to the period of the 2012 HSES field work using a factor of 1.06056.[12] With the IMF CPI data used here (and accounting for the imperfect overlap between the 2012 HSES field work and calendar-year 2012), the factor is 1.06086. Relative to PovcalNet's line, this increases the scorecard's line by about IQD3.

Second, the person-weighted average of the product of the two normalized deflators in the formula for the scorecard's $1.90/day line is not 1.00000 but rather 1.00627. Relative to PovcalNet's line, this increases the scorecard's line by about an additional IQD13.

Third and most important, PovcalNet's $1.90/day calculation adjusts for price differences across time (in its measure of consumption) but does not adjust for price differences across regions.[13] Relative to the scorecard's line, this lowers PovcalNet's line and decreases its poverty rate in less-poor regions (such as Kurdistan), while raising the line and increasing the poverty rate in more-poor regions (such as the rest of Iraq other than Kurdistan and Baghdad). On net, this increases the $1.90/day poverty rate for Iraq overall.

Which $1.90/day estimation is to be preferred? It is possible that PovcalNet purposely did not adjust for regional prices because its line of IQD2,022 is not too far

[12] iresearch.worldbank.org/PovcalNet/Docs/CountryDocs/IRQ.htm#3 (retrieved 10 January 2019) reports the CPI factor, but not its source.
[13] PovcalNet does not document this. It was verified by reproducing PovcalNet's reported poverty rate using PovcalNet's unadjusted $1.90/day line with temporally-adjusted consumption.

from Iraq's minimum food standard of IQD1,608, and in any case only about 2–3 percent of people in Iraq are under $1.90/day. Given that the minimum food standard is not adjusted for regional prices, it might make sense not to adjust the $1.90/day line (although it would still make sense to adjust the $3.20/day line and other higher 2011 PPP lines).

On the other hand, if it makes sense to adjust poverty lines for price differences across geographic regions at the level of countries (the purpose of international 2011 PPP lines in the first place), then it also makes sense to adjust for such differences within a given country.

So both approaches have their merits. As argued in Schreiner (2014b), the scorecard's figures for PPP poverty lines are to be preferred over those of PovcalNet because they are documented more completely.

The 2011 PPP poverty lines for $3.20/day, $5.50/day, and $21.70/day are multiples of the $1.90/day line.[14]

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

2.3.3 Percentile-based poverty lines

The scorecard for Iraq also supports percentile-based poverty lines.[15] This facilitates a number of types of analyses. For example, the second-quintile (40^{th}-percentile) line might be used to help track Iraq's progress toward the World Bank's (2013b) 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 an asset index such as that supplied with the data from the Demographic and Health Surveys (Rutstein and Johnson, 2004) to compare an estimate of socio-economic status 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 for 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)

[15] Following the asset index associated with the Demographic and Health Surveys, percentiles are defined in terms of people (not households) for Iraq as a whole. For example, the all-Iraq 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 14.8 percent.

Unlike the scorecard, asset indexes serve only to analyze relative wealth. Furthermore, the scorecard—unlike asset 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 relative to a poverty line defined in monetary units).

In contrast, an asset index opaquely defines *poverty* in terms of its own indicators and points, without reference to an external standard. This means that two asset 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 Iraq, about 90 candidate indicators are initially prepared in the areas of:

- Household composition (such as the number of household members)
- Education (such as the highest certificate attained by the male head/spouse)
- Housing (such as the principal material of the floor)
- Ownership of consumer durables (such as TVs and fans)
- Location of residence (such as the governorate)
- Agriculture (such as whether the household farms or raises livestock)
- Employment (such as the number of household members who work)

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.[16]

One possible application of the scorecard is to estimate changes in poverty rates over time. Thus, when selecting indicators—and holding other considerations constant—preference is given to more sensitive indicators. For example, the number of TVs owned is probably more likely to change in response to changes in socio-economic status than is the age of the male head/spouse.

The scorecard itself is built using 150% 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 assessed via the concentration index (Ravallion, 2009).

[16] 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 regions, tendency to have a slow-changing relationship with socio-economic status 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 stage. 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[17] 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 Iraq. Segmenting poverty-assessment tools by urban/rural does not improve targeting accuracy much. This is reported for nine countries in Sub-Saharan Africa (Brown, Ravaillon, and van de Walle, 2016)[18], 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, segmenting poverty-assessment tools may improve the accuracy of estimates of poverty rates (Diamond *et al.*, 2016; Tarozzi and Deaton, 2009), but it may also increase the risk of overfitting (Haslett, 2012).

[17] 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.
[18] 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 successfully targeted by about one per 200 or one per 400 poor people.

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 properly used (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".[19] The relevant bottleneck is less technical and more human, not statistics but organizational-change management. Accuracy is easier to achieve than adoption.

The scorecard for Iraq 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 make sense to them.

To this end, Iraq's scorecard fits on one page. The construction process, indicators, and points are straightforward and transparent. Additional work is

[19] Dupriez, 2018; 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.

minimized; non-specialists can compute scores by hand in the field because the scorecard has:

- Ten indicators
- Multiple-choice responses
- Simple points (non-negative integers, and no arithmetic beyond addition)

4.1 How to apply the scorecard in the field

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

- Record the interview identifier, interview date, country code ("IRQ"), 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 (if there is one) who is the participant's main point of contact with the organization (and 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)
- Mark the response to the first scorecard question ("In what governorate does the household live?") based on what is known about where the interviewed household lives
- Complete the "Back-page Worksheet" with each household member's first name (or nickname), marking the male head/spouse (if he exists)
- Based on the "Back-page Worksheet", record the number of household members in the scorecard header next to "Number of household members:"
- Based on the "Back-page Worksheet", mark the response to the second scorecard question ("How many household members are there?")
- Read the third and fourth questions aloud, marking the respondent's answers
- Record the answers to the fifth and sixth questions about the principal material of the floor and walls of the residence based on the enumerator's own observation. Those questions should be asked directly of the respondent only if the response is not obvious to the enumerator
- Read the rest of the scorecard questions to the respondent one-by-one. Write each point value in the far right-hand column, and circle the pre-printed response, the pre-printed points, and the hand-written points

- Add up the points to get a total score (if desired)
- Implement targeting policy (if any) based on the score
- Upload the data with a mobile data-collection tool, or deliver the paper scorecard to a central office for data entry and analysis

Of course, field workers must be trained. The quality of outputs depends on the quality of inputs. The training of field workers should be based solely on the "Interview Guide" found after the "References" in this document.

If organizations or field workers gather their own data and if they 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).[20] IRIS Center (2007) and Toohig (2008) are useful nuts-and-bolts guides for logistics, budgeting, training field workers and supervisors, sampling, interviewing, piloting, recording data, and controlling quality. Schreiner (2014a) explains how to compute estimates and analyze them.

[20] If a program does not want field workers or respondents to know the points associated with responses, then it can use a mobile data-collection tool or provide a version of the paper 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 answers 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.

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" section in this paper, as this "Interview Guide"—along with the "Back-page Worksheet"—is an integral part of the scorecard.[21]

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. Yet 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 programs that use the scorecard for targeting in Iraq.

[21] The guidelines here are the only ones that organizations should give to enumerators. All other issues of interpretation should be left to the judgment of enumerators and respondents, as this seems to be what Iraq's COSIT did in the 2012 HSES.

4.2 Survey-design choices

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 participants' households will be interviewed
- How many participants' households will be interviewed
- How frequently participants' households will be interviewed
- Whether the scorecard will be applied at more than one point in time
- Whether the same participants' households will be scored more than once

In general, the sampling design should follow from the organization's goals for the survey, the questions to be answered, and the budget. The broad goals are:

- To make sure that the sample is representative of a well-defined population
- To 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, recommended way to do interviews: in-person, at the sampled household's residence, with an enumerator trained to follow the "Interview Guide". This is how COSIT did interviews in Iraq's 2012 HSES, and this provides the most-accurate and most-consistent data (and thus the best estimates).

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

- Without an enumerator (for example, by asking respondents to fill out paper or web forms on their own or to 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, with an enumerator interviewing by phone)

While such non-recommended 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 other methods are not recommended.

In some contexts—such as when an organization's field agents do not already visit participants periodically at home anyway as part of their normal work—an organization might judge that the lower costs of a non-recommended approach compensate for less-accurate estimates. The business wisdom of non-recommended methods depends on context-specific factors that an organization must judge for itself. To judge carefully, an organization that is considering a non-recommended method should do a small test to see how responses differ with the non-recommended method versus with a trained enumerator at the residence. Furthermore, any reporting should note the use of the non-recommended method and discuss its possible consequences.

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
- Mobile devices in the field, and then uploaded to a database[22]

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 informing issues that matter to the organization. In practice, errors due to implementation issues and due to interviewing a non-representative sample can easily swamp errors due to having a somewhat smaller sample size.

[22] Scorocs can support programs that want to set up a system to collect data with mobile devices or to capture data in a database at the office once paper forms come in. Support is also available for calculating estimates as well as for reporting and analysis.

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 agent visits a participant at home (allowing estimating change)

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

- With two independent samples of participants from the same population, with the first sample scored at baseline and the second sample scored at follow-up
- With a single sample of participants, all of whom are scored at both baseline and follow-up

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 scorecard for Bangladesh (Schreiner, 2013a) with a sample of about 25,000 participants. Their design is that all loan officers in a random sample of branches score all participants each time the 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 Iraq, 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 150% of the national poverty line, scores of 45–46 have a poverty likelihood of 56.2 percent, and scores of 47–48 have a poverty likelihood of 44.7 percent (Table 3).

The poverty likelihood associated with a score varies by poverty line. For example, scores of 45–46 are associated with a poverty likelihood of 56.2 percent for 150% of the national poverty line but of 9.9 percent for the $3.20/day 2011 PPP line.[23]

[23] From Table 3 on, many tables have 13 versions, one for each of the 13 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 150% of the national poverty line.

5.1 Calibrating scores with poverty likelihoods

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

For the example of 150% of the national poverty line and a score of 45–46 (Table 4), there are 4,694 (normalized) households in the construction sample. Of these, 2,639 (normalized) are below the poverty line. The estimated poverty likelihood associated with a score of 45–46 is then 56.2 percent, because 2,639 ÷ 4,694 = 56.2 percent.

To illustrate with 150% of the national poverty line and a score of 47–48, there are 4,777 (normalized) households in the construction sub-sample, of whom 2,137 (normalized) are below the line (Table 4). The poverty likelihood for this score range is then 2,137 ÷ 4,777 = 44.7 percent.

The same method is used to calibrate scores with estimated poverty likelihoods for all 13 poverty lines.[24]

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

[24] 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.

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.[25] 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 Iraq's 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 impossible to compute by hand. It is more intuitive to define the poverty likelihood as the share of households with a given score in the construction 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.

[25] Fuller, 2006; Caire, 2004; Schreiner *et al.*, 2014.

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 samples of 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 of the estimates 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 changes in poverty rates between two points in time.[26]

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 Iraq's population. Thus, scorecard estimates will generally have errors when applied after January 2013 (the last month of field work for the 2012 HSES) or when applied with sub-groups that are not nationally representative.

[26] 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 Iraq 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, 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 150% of the national line and on average across bootstrap samples from the validation sample, the estimated poverty likelihood for scores of 45–46 (56.2 percent, Table 3) is too high by 4.8 percentage points. For scores of 47–48, the estimate is too low by 0.3 percentage points.[27]

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

The 90-percent confidence interval for the differences for scores of 45–46 is ±3.7 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 +1.1 and +8.5 percentage points (because +4.8 – 3.7 = +1.1, and +4.8 + 3.7 = +8.5). In 950 of 1,000 bootstraps (95 percent), the difference is +4.8 ± 4.5 percentage points, and in 990 of 1,000 bootstraps (99 percent), the difference is +4.8 ± 5.8 percentage points.

A few of the absolute errors between estimated and observed poverty likelihoods in Table 5 for 150% 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 sub-sample and from the population of Iraq. 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.

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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 across 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 Iraq, 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 HSES field work in January 2013. That is, the scorecard may fit the construction data from 2012 so closely that it captures not only some real patterns that exist in the population of Iraq but also some random patterns that, due to sampling variation, show up only in the 2012 HSES construction sample. Or the scorecard may be overfit in the sense that its accuracy decreases when relationships between indicators and poverty change over time or when the scorecard is applied to sub-groups 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 does this. Combining multiple 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 over time, and imperfections in price adjustments over time and across geographic regions. 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 2020 and that they have scores of 20, 30, and 40, corresponding to estimated poverty likelihoods of 94.2, 87.1, and 71.5 percent (150% of the national line, Table 3). The population's estimated poverty rate is the households' average poverty likelihood of $(94.2 + 87.1 + 71.5) \div 3 = 84.3$ percent.[28]

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 87.1 percent. This differs from the 84.3 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, colors in the spectrum, or syllables in a solfège scale. 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

[28] This example assumes simple random sampling (or a census) and analysis at the level of households so that each household's household-level sampling weight is one (1). 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 of the participant.

appropriate, but, in general, the 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 construction sample of the 2012 HSES for all 13 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 $n = 16{,}384$ for 150% of the national line, the average error (average difference between the estimate and observed value in the validation sample) for a poverty rate at a point in time is +1.0 percentage points (Table 7, which summarizes Table 6 across all poverty lines). For the 13 poverty lines in the validation sample, the maximum of the absolute values of the error is 2.8 percentage points, and the average of the absolute values of the average errors is about 0.8 percentage points. At least part of these differences is due to sampling variation in the division of the 2012 HSES into two 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 150% of the national line in the validation sample, the error is +1.0 percentage points, so the corrected estimate in the three-household example above is 84.3 – (+1.0) = 83.3 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). Given the scorecard's standard assumptions, 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 150% of the national line is 84.3 percent. Then estimates in 90 percent of such samples would be expected to fall in the range of 84.3 – (+1.0) – 0.6 = 82.7 percent to 84.3 – (+1.0) + 0.6 = 83.9 percent, with the most likely observed value being the corrected estimate in the middle of this range, that is, 84.3 – (+1.0) = 83.3 percent. This is because the original (uncorrected) estimate is 84.3 percent, the average error is +1.0 percentage points, and the 90-percent confidence interval for 150% of the national line in the validation sample with this sample size is ±0.6 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, taken as the square root of the sum of the squared differences).

Schreiner (2008a) 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, Iraq's 2012 HSES gives a direct-measure household-level poverty rate for 150% of the national line of $\hat{p} = 41.4$ percent (Table 1).[29] If this measure came from a sample of $n = 16{,}384$ households from a population N of 5,054,307 (the number of households in Iraq in 2012 according to the HSES sampling weights), then the finite population correction ϕ is $\sqrt{\frac{5{,}054{,}307 - 16{,}384}{5{,}054{,}307 - 1}} = 0.9984$, 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

$$\pm z \cdot \sqrt{\frac{\hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}} = \pm 1.64 \cdot \sqrt{\frac{0.414 \cdot (1 - 0.414)}{16{,}384}} \cdot \sqrt{\frac{5{,}054{,}307 - 16{,}384}{5{,}054{,}307 - 1}} = \pm 0.630$$

percentage points. If ϕ were taken as 1, then the interval would be ±0.631 percentage points.

Unlike the 2012 HSES, 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 150% of the national line in the validation sample, the 90-percent confidence interval is ±0.588 percentage points.[30]

Thus, the scorecard's 90-percent confidence interval with $n = 16{,}384$ is ±0.588 percentage points, while the interval for direct measurement is ±0.630 percentage points. The ratio of the two intervals is $0.588 \div 0.630 = 0.93$.

[29] This analysis ignores that poverty-rate estimates from the HSES are themselves based on a sample and so have their own sampling distribution.
[30] Due to rounding, Table 6 displays 0.6, not 0.588.

Now consider the same exercise, but with $n = 8{,}192$. The confidence interval under direct measurement and 150% of the national line in the validation sample is $\pm 1.64 \cdot \sqrt{\frac{0.414 \cdot (1 - 0.414)}{8{,}192}} \cdot \sqrt{\frac{5{,}054{,}307 - 8{,}192}{5{,}054{,}307 - 1}} = \pm 0.892$ percentage points. The empirical confidence interval with the scorecard (Table 6) is ±0.850 percentage points. Thus for $n = 8{,}192$, the ratio of the two intervals is $0.850 \div 0.892 = 0.95$.

This ratio of 0.95 for $n = 8{,}192$ is not far from the ratio of 0.93 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 0.95. This implies that confidence intervals for indirect estimates of poverty rates via Iraq's scorecard with 150% of the national line are—for a given sample size—about 5 percent narrower than the confidence intervals for direct estimates via the 2012 HSES. This 0.95 appears in Table 7 as the "α factor for precision" because if $\alpha = 0.95$, then the formula for approximate confidence intervals $\pm c$ 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 less than 1.00, it means that the scorecard is more precise than direct measurement. It turns out that α is less than 1.00 for nine of the 13 poverty lines in Table 7, and its highest value is 1.26.

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 $\tilde{p}$

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 5,054,307 (the number of households in Iraq in 2012), suppose $c = 0.04578$, $z = 1.64$ (90-percent confidence), and the relevant poverty line is 150% of the national line so that the most sensible expected poverty rate $\widetilde{p}$ is Iraq's overall poverty rate for that line in 2012 (41.4 percent at the household level, Table 1). The α factor is 0.95 (Table 7). Then the sample-size formula gives $n = 5{,}054{,}307 \cdot \left(\frac{1.64^2 \cdot 0.95^2 \cdot 0.414 \cdot (1 - 0.414)}{1.64^2 \cdot 0.95^2 \cdot 0.414 \cdot (1 - 0.414) + 0.04578^2 \cdot (5{,}054{,}307 - 1)} \right)$ = 281, which is not too far from the sample size of 256 observed for these parameters in Table 6 for 150% of the national line. Taking the finite population correction factor ϕ as one (1) gives the same result, as $n = \left(\frac{0.95 \cdot 1.64}{0.04578} \right)^2 \cdot 0.414 \cdot (1 - 0.414) = 281.$

Of course, the α factors in Table 7 are specific to Iraq, its poverty lines, its poverty rates, and this scorecard. The derivation of the formulas for approximate

standard errors using the α factors, however, is valid for any poverty-assessment tool following the approach in this paper.

In practice after the end of field work for the HSES in January 2013, a program would select a poverty line (say, 150% 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 150% of the national line for Iraq of 41.4 percent in the 2012 HSES in Table 1), look up α (here, 0.95 in Table 7), assume that the scorecard will still work in the future and for sub-groups that are not nationally representative,[31] and then compute the required sample size. In this illustration, $n = 10{,}000 \cdot \left(\frac{1.64^2 \cdot 0.95^2 \cdot 0.414 \cdot (1 - 0.414)}{1.64^2 \cdot 0.95^2 \cdot 0.414 \cdot (1 - 0.414) + 0.02^2 \cdot (10{,}000 - 1)} \right) = 1{,}284.$

[31] 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 January 2013 will resemble that in the 2012 HSES 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.

The accuracy of estimates of change over time in which both baseline and follow-up estimates are from Iraq's scorecard are not tested here, and this paper can only suggest approximate formulas for standard errors. Nonetheless, the relevant concepts are discussed because in practice pro-poor organizations in Iraq can apply the scorecard to collect their own data and measure 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 on poverty 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 on poverty 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 changes in poverty rates

The rest of this section explains how to estimate changes over time.

Consider the illustration begun in the previous section. On 1 January 2020, an organization samples three households who score 20, 30, and 40 and so have poverty likelihoods of 94.2, 87.1, and 71.5 percent (150% of the national line, Table 3). Given the known average error for this line in the validation sample of +1.0 percentage points (Table 7), the corrected baseline estimated poverty rate is the households' average poverty likelihood of [(94.2 + 87.1 + 71.5) ÷ 3] – (+1.0) = 83.3 percent.

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

- *Two independent samples*: Score a new, independent sample from the same population that was sampled from at baseline
- *One sample scored twice*: Score the same sample that was scored at baseline

7.2.1 Estimating change with two independent samples

By way of illustration, suppose that three years later on 1 January 2023, the organization draws a new, independent sample of 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 94.2, 80.2, and 56.2 percent, 150% of the national line, Table 3). Adjusting for the known average error, the average poverty likelihood at follow-up is [(94.2 + 80.2 + 56.2) ÷ 3] – (+1.0) = 75.9 percent. The three-year

reduction in the poverty rate is then 83.3 – 75.9 = 7.4 percentage points.[32] 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 7.4 ÷ 3 = 2.5 percentage points per year. That is, about one in 40 participants in this hypothetical example cross the poverty line each year.[33] Among those who started below the line, about one in 33 (2.5 ÷ 83.3 = 3.0 percent) on net ended up above the line each year.[34]

7.2.2 Estimating change with one sample scored twice

Alternatively, suppose that the same three original households who were scored at baseline are scored again on 1 January 2023. Given scores of 25, 35, and 45, their follow-up poverty likelihoods are 94.2, 80.2, and 56.2 percent. The average across households of the difference in each given household's baseline poverty likelihood and its follow-up poverty likelihood is [(94.2 – 94.2) + (87.1 – 80.2) + (71.5 – 56.2)] ÷ 3 = 7.4 percentage points.[35] 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) 7.4 ÷ 3 = 2.5 percentage points per year.

[32] 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.
[33] This is a net figure; some start above the line and end below it, and vice versa.
[34] The scorecard does not reveal the reasons for this change.
[35] With one sample scored twice, the error for this line from 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 samples, and in the nature of two independent samples (each scored once) versus the nature of one sample scored twice (Schreiner, 2014a).

7.3 Precision for estimated changes

7.3.1 Precision when scoring 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,[36] 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.

[36] 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 (1), then the formula becomes $n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p})$.

With two independent samples, α has been estimated for scorecards for 19 countries (Schreiner 2018, 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 these 19 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 Iraq (or any other scorecard) from now on.

To illustrate the use of this formula to determine sample size for estimating changes in poverty rates with 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 150% of the national line, $\alpha = 1.08$, $\widetilde{p} = 0.414$ (the household-level poverty rate in 2012 for 150% 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

$n = 2 \cdot \left(\frac{1.08 \cdot 1.64}{0.02} \right)^2 \cdot 0.414 \cdot (1 - 0.414) \cdot 1 = 3{,}806$, and the follow-up sample size is also 3,806.

7.3.2 Precision with 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 one sample scored twice is:[37]

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

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.

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 sampling) of the expected shares of all households who will cross the poverty line $\tilde{p}_{12}$ and $\tilde{p}_{21}$. Before sampling, 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:

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

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

Because $\widetilde{p}_*$ could be anything between 0 and 0.5, more information is needed to apply this formula. The average observed relationship in Niger (Schreiner, 2018) and Peru (Schreiner, 2009c) between $\widetilde{p}_*$, the number of years y between baseline and follow-up, and $p_{\text{pre-baseline}} \cdot (1 - p_{\text{pre-baseline}})$ is close to:

$$\widetilde{p}_* = -0.01 + 0.016 \cdot y + 0.56 \cdot [p_{\text{pre-baseline}} \cdot (1 - p_{\text{pre-baseline}})].$$

Given this approximate result, a sample-size formula for a sample of households to whom the scorecard for Iraq is applied twice (once after January 2013 and then again later) is

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot [-0.01 + 0.016 \cdot y + 0.56 \cdot p_{\text{pre-baseline}} \cdot (1 - p_{\text{pre-baseline}})] \cdot \sqrt{\frac{N - n}{n - 1}}.$$

The average α across poverty lines for Niger and Peru is about 1.14. This 1.14 figure for α is as reasonable as any other for the Iraq scorecard (as well as for other scorecards in general).

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 150% of the national line, the sample will first be scored in 2020 and then again in 2023 ($y = 3$), 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_{2020} is taken as 41.4 percent (Table 1), and α is assumed to be 1.14. Then the baseline sample size is $n = 2 \cdot \left(\frac{1.14 \cdot 1.64}{0.02} \right)^2 \cdot \{-0.01 + 0.016 \cdot 3 + [0.56 \cdot 0.414 \cdot (1 - 0.414)]\} \cdot 1 = 3{,}039$. The same group of 3,039 households is scored at follow-up as well.

8. Targeting

When a program uses the scorecard for segmenting participants 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*,[38] not as *poor*. After all, unless all targeted households have poverty likelihoods of 100 percent, it is likely that 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.

[38] Other labels can be meaningful 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 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 to the extent to which households truly below a poverty line are targeted (*inclusion*) or households truly above a poverty line are not targeted (*exclusion*). Of course, no poverty-assessment tool is perfect, and targeting is unsuccessful to the extent to which households truly below a poverty line are not targeted (*undercoverage*) or 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 worse inclusion and worse undercoverage (but better exclusion and better leakage).

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 the sum of net benefits.[39]

Table 9 shows the distribution of households by targeting outcome for Iraq. For an example cut-off of 46 or less, outcomes for 150% of the national line in the validation sample are:

- Inclusion: 28.5 percent are below the line and correctly targeted
- Undercoverage: 13.1 percent are below the line and mistakenly not targeted
- Leakage: 9.6 percent are above the line and mistakenly targeted
- Exclusion: 48.8 percent are above the line and correctly not targeted

[39] Adams and Hand, 2000; Hoadley and Oliver, 1998.

Increasing the cut-off to 48 or less improves inclusion and undercoverage but worsens leakage and exclusion:

- Inclusion: 30.8 percent are below the line and correctly targeted
- Undercoverage: 10.7 percent are below the line and mistakenly not targeted
- Leakage: 12.2 percent are above the line and mistakenly targeted
- Exclusion: 46.2 percent are above the line and correctly not targeted

Which cut-off is preferred depends on the sum of net benefits. 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 chosen 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 150% of the national line in the validation sample, total net benefit under the hit rate for a cut-off of 46 or less is 77.3 percent, with more than three in four households in Iraq 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).

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 150% of the national line, targeting households who score 46 or less would target 38.1 percent of all households (second column) and would be associated with an estimated poverty rate among targeted households of 74.7 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 150% of the national line with the validation sample and a cut-off of 46 or less, 68.5 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 150% of the national line with the validation sample and a cut-off of 46 or less, covering about 3.0 poor households means leaking to 1 non-poor household.

9. Context of poverty-assessment tools in Iraq

This section discusses two existing poverty-assessment tools for Iraq in terms of their goals, methods, definitions of *poverty*, data, indicators, errors, standard errors, and cost.

Both of the existing tools are like the scorecard in that they:

- Use data from the 2012 HSES
- Ask a few, low-cost questions and so are feasible for pro-poor programs
- Use a consumption-based definition of *poverty* that is widely understood and that is used by the government of Iraq

9.1 World Bank's (2016) targeting tool

World Bank (2016) seeks to improve the targeting of Iraq's only cash-transfer scheme, the Social Safety Net. About 6 percent of households receive the SSN because they have members who are orphans, married students, disabled, blind, paralyzed, imprisoned, missing, or unemployed. SSN recipents include 11 percent of the 14.6 percent of Iraqi households who are below 100% of the national line. About 76 percent of SSN households are not below that line.

The World Bank's proposed targeting tool would not apply in conflict-affected governorates (Nineveh, Al-Anbar, and Salahuddin) nor *nahiyas* whose estimated household-level poverty rate—from the World Bank's (2015) poverty map, see below—exceeds 60 percent. In those *nahiyas* (districts), all households would receive the SSN.

Everywhere else, the SSN would be targeted to households who the targeting tool ranks in poorest 60 percent. This would imply at least a 10-fold increase in the number of SSN recipients.

The accuracy of the World Bank's tool is not reported when reaching—as does the current SSN—about 6 percent of households. If the lowest-scoring 6 percent of households were targeted based on the scorecard here, then about 28 percent of households below 100% of the national line would receive the SSN, and about one-third of recipient households would be above 100% of the national line.

World Bank (2016) uses three poverty-assessment tools customized to Kurdistan, Baghdad, and the rest. The average tool has 15 low-cost, verifiable indicators from the following list:

- Household demographics:
  - Number of members of any age
  - Number of members ages 0 to 6
  - Number of members ages 7 to 17
  - Number of members ages 60 or older
  - Age of the head
- Characteristics of the residence:
  - Location (urban or rural)
  - Location (Suleimaniya or other)
  - Type of residence
  - Source of drinking water
  - Type of sewage arrangement

- Ownership of consumer durables:
  - Generator
  - Air conditioner
  - Refrigerator
  - Freezer
  - Water heater
  - Electric washing machine
  - Vacuum cleaner
  - Personal computer
  - Car

The points for the targeting tools are not reported, so they cannot be used by pro-poor programs on their own.

9.2 Work Bank's (2015) poverty map

World Bank (2015) uses data from the 2012 HSES and from Iraq's Poverty Mapping and Maternal Mortality Survey (I-PMM)[40] to construct 18 governorate-specific poverty-assessment tools. The tools' estimates of poverty rates for 100% of the national line for Iraq's 120 *qhadas* and 393 *nahiyas* (sub-districts) are assembled into a "poverty map" (Elbers, Lanjouw, and Lanjouw, 2003).

The 18 governorate-level tools are derived using generalized least-squares stepwise regression on the logarithm of per-capita consumption for households in the 2012 HSES, selecting only matched indicators also collected in the I-PMM. The World Bank then applies the 18 tools to data from the I-PMM to estimate poverty rates for *qhadas* and *nahiyas*. Because the I-PMM is a nationally representative sample of more

[40] COSIT did the I-PMM just after the 2012 HSES. Questions that the World Bank considered to be candidates for the poverty map were worded the same in both surveys.

than 300,000 households, the poverty map's estimates are more precise (that is, they have smaller standard errors) than would direct estimates for *qhadas* and *nahiyas* based directly on the 2012 HSES.[41] The estimates are presented as poverty maps that quickly show—in a way that is clear to non-specialists—how poverty rates vary across space. According to World Bank (2015, p. 59), "The visual representation of the spatial distribution of poverty draws more attention and interest than presenting the information in a table ever could. It can galvanize political will and support for poverty reduction".

The poverty map and the scorecard here are similar in that they both:

- Build poverty-assessment tools with data that is representative of a population (all-Iraq for the scorecard, and each of 18 governorates for the poverty map) and then apply the tools to other data on sub-populations that are not, in general, representative of the same population that are used to construct the tools
- Use straightforward, verifiable indicators that are quick and inexpensive to collect
- Adopt a consumption-based definition of *poverty* that is widely understood by the public and that is used by the government of Iraq
- Test accuracy *out-of-sample* (that is, with data not used in tool construction)
- Provide unbiased estimates when their assumptions hold
- Report estimation errors vis-à-vis observed values in the 2012 HSES for Iraq overall and for each of 18 governorates
- Seek to be useful in practice and so aim to be understood by non-specialists

[41] For *qhadas* and *nahiyas*, the map's standard errors are known, but its errors are unknown.

Strengths of the poverty map include that it:

- Has formally established theoretical properties
- Can be applied straightforwardly to measures of well-being beyond head-count poverty rates (such as the poverty gap)
- Accounts for uncertainty in the estimation of scorecard points when estimating standard errors
- Requires data on fewer households for construction and calibration
- Includes *qhada*- and *nahiya*-level indicators, decreasing errors and standard errors
- Reports standard errors (and complex formula for standard errors)

Strengths of the scorecard include that it:

- Is simpler in both construction and application
- Associates poverty likelihoods with scores non-parametrically
- Supports many poverty lines
- Reduces overfitting by selecting indicators with statistical and non-statistical criteria and by having only a single, all-Iraq scorecard[42]
- Surfaces estimates of poverty likelihoods for individual households
- Reports straightforward formulas for standard errors

The basic difference between the two approaches is that the poverty map seeks to help the government to target pro-poor policies, while the scorecard seeks to help local, pro-poor programs to manage their social performance and to demonstrate the depth of their outreach to supporters.[43] On a technical level, the poverty-map tools estimate consumption levels, whereas the scorecard estimates poverty likelihoods.

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[42] According to Mahadevan, Yoshida, and Praslova (2013, pp. 6–7), "The latest recommendation from poverty-map experts in the World Bank Research Department is not to use multiple [poverty-assessment tools] to predict household consumption" because multiple tools can be "problematic since the number of observations for each tool becomes small and, as a result, the regression coefficients become less stable." Haslett (2012) likewise recommends that poverty maps address overfitting by using a single, all-country tool.

[43] Another apparent difference is that the developers of poverty mapping (Elbers, Lanjouw, and Lanjouw, 2003; Demombynes *et al.*, 2004) say that poverty maps are too inaccurate to be used for targeting at the household level. In contrast, Schreiner (2008b)

The poverty map's 18 tools have an average of about 16 indicators. The following 53 indicators appear in at least one tool:

- Household demographics:
  - Members in the household:
    - Number of any age
    - Number ages 0 to 6
    - Number ages 7 to 17
    - Number ages 60 or older
    - Share ages 0 to 6
    - Share ages 7 to 17
    - Share ages 60 or older
  - Characteristics of the head:
    - Sex
    - Age
    - Marital status
    - Governorate of birth
  - Dependency ratio
- Highest educational attainment by:
  - Head
  - Any household member
- Employment of household members:
  - Employment status of the head
  - Whether someone is employed in the government/public sector
  - Whether someone is employed in the private sector
  - Number of working-age males who are employed
  - Share of working-age males who are employed
- Characteristics of the residence:
  - Tenancy status
  - Type of residence
  - Type of wall
  - Source of drinking water
  - Type of sewage arrangement
  - Electricity:
    - Days per week with electricity from a private generator
    - Days per week with electricity from a shared generator
    - Source of electricity

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supports household-level targeting as a legitimate, potentially useful application of the scorecard. In Elbers *et al.* (2007), the developers of the poverty map seem to take a step back from their original position.

- Ownership of consumer durables:
  - — Generator
  - — Vacuum cleaner
  - — Personal computer
  - — Electric washing machine
  - — Refrigerator
  - — Freezer
  - — Cooler
  - — Air conditioner
  - — Water heater
- Characteristics of households in the *qhada*:
  - — Average distance to the nearest road
  - — Average distance to the nearest school
  - — Average days of electricity per week from a private generator
  - — Average days of electricity per week from a shared generator
- Characteristics of households in the *nahiya*:
  - — Average number of household members
  - — Average distance to the nearest road
  - — Average distance to the nearest school
  - — Share with a cooker
  - — Share with a generator
  - — Share with a TV
  - — Share with a vacuum cleaner
  - — Share with a car
  - — Share whose heads have a secondary education
  - — Share whose heads are employed in the private sector
  - — Share whose heads are employed in the government/public sector
  - — Average days of electricity per week from the public grid[44]

These indicators are all low-cost and verifiable, and the tools' points are reported. The poverty-map tools, however, are not feasible (nor are they intended to be) for use by local, pro-poor programs. There are 18 tools to manage, and computing estimates involves ratios, squares, and combinations, as well as access to *qhada* and *nahiya* aggregates.

[44] Four poverty-map tools also use various combinations of two of the 53 indicators.

Because the I-PMM does not measure consumption, the poverty map's accuracy for *qhadas* and *nahiyas* cannot be tested. Instead—and unlike many poverty maps that are less well-documented than Iraq's map—World Bank reports errors and standard errors for governorate-level estimates vis-à-vis the observed poverty rates in the 2012 HSES.

These errors for the map's estimates (out-of-sample in the I-PMM) can be compared with the scorecard's errors (out-of-sample in the HSES). The comparison is not apples-to-apples because each tool is tested with different data. The finer customization of the poverty map (18 tools with about 15 indicators each) would seem to favor it over the scorecard (1 tool with 10 indicators), as does the I-PMM's larger validation sample. The scorecard is favored in that its validation sample comes from the same survey as its construction sample. Of course, the poverty map also aims to be accurate at the more-difficult administrative levels below governorates, and the poverty map is for use by the government (which can handle its complexity and cost better than local, pro-poor programs).

Errors in governorate-level estimates of household poverty rates by 100% of the national line, poverty map v. scorecard

	Error (percentage points)	
Governorate	**Poverty map**	**Scorecard**
Duhouk	+0.1	–0.8
Nineveh	+3.2	–4.7
Suleimaniya	–0.6	+1.2
Karkouk	–0.3	–1.2
Erbil	–0.5	–0.4
Diala	–0.3	+3.8
Al-Anbar	+3.3	–2.5
Baghdad	–1.2	–0.1
Babil	–2.3	+1.9
Kerbala	+1.0	+1.5
Wasit	–1.4	–2.5
Salahuddin	–0.3	+2.2
Al-Najaf	–2.1	+1.2
Al-Qadisiya	+0.7	+4.1
Al-Muthanna	+1.9	–1.3
Thi-Qar	–3.3	+3.1
Missan	–3.5	+8.5
Basrah	–2.0	+1.1
All Iraq	–0.7	+1.0
Ave. |error|:	1.6	2.3
Max. |error|:	3.5	8.5

Across governorates, the average absolute error is smaller for the poverty map than for the scorecard (1.6 versus 2.3 percentage points). The poverty map also has a smaller maximum absolute error (3.5 versus 8.5 percentage points). The poverty map's advantage would likely grow, if tests were possible for *qhadas* and *nahiyas*.

Thus, the poverty map's governorate-level estimates are more accurate than those of the scorecard. While this result was not inevitable, it also was not unexpected as the poverty map has 18 tools (each with a constant term and governorate-specific indicators and points), versus the single scorecard. In the absence of overfitting,

poverty-assessment tools that are more tailored to a specific sub-population will do better than tools covering an over-arching population.[45]

For the example of Indonesia, Schreiner (2016e) shows that the reduction in error due to building province-specific scorecards from scratch can be attained more easily by adding indicators for the province to a single, all-country scorecard. As for the poverty map and scorecard here, the resulting errors are low enough (less than about 1 or 2 percentage points) that further improvements in accuracy is unlikely to be demanded in most real-world decision-making contexts.

As always, there is still a trade-off. Greater accuracy for sub-populations requires customized tools (with higher costs to make and use), or tools with indicators that mark specific sub-populations (with the potential for political backlash when those indicators directly and obviously—as opposed to indirectly, as is the case for the rest of a tool's indicators—seem to favor or disfavor specific sub-groups or regions).[46] For some purposes and contexts, a single, all-country scorecard may be "good enough for government work"; in others, more accuracy may be needed, bringing with it greater complexity and higher costs.

[45] This is the main point of Diamond *et al.* (2016).

[46] For Sri Lanka, Narayan and Yoshida (2005) note that an urban/rural indicator sparked political opposition to their poverty-assessment tool, as did an indicator for province. One of this paper's authors has observed similar political responses to indicators for well-defined population sub-groups in several countries.

10. Summary

The scorecard helps pro-poor programs in Iraq to get to know their participants better so as to prove and improve their social performance.

The scorecard can segment clients for differentiated treatment as well as estimate:

- The likelihood that a participant's household has consumption below a given poverty line
- The poverty rate of a population of participants' households at a point in time
- The change in the poverty rate of a population of participants' households

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

The scorecard is constructed with data from about three-fifths of the households in Iraq's 2012 HSES. Those households' scores are then calibrated to poverty likelihoods for 13 poverty lines. The scorecard's accuracy (errors and standard errors) is tested out-of-sample on data that was not used to make the scorecard.

When the scorecard is applied to the 13 poverty lines in the validation sample, the maximum of the absolute values of the average error for point-in-time estimates of poverty rates is 2.8 percentage points, and the average of the absolute values of the average error across the 13 lines is about 0.8 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 confidence intervals for point-in-time estimates of poverty rates are ± 0.7 percentage points or better. With $n = 1{,}024$, the 90-percent confidence intervals are ± 2.6 percentage points or better.

If an organization wants to use the scorecard for segmenting clients for differentiated treatment, then this paper provides useful information for selecting a targeting cut-off that fits the organization's 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 by 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 to 100. 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 Iraq to estimate consumption-based poverty rates, track changes in poverty rates over time, and segment participants for differentiated treatment. A scorecard can be made for any country with similar data.

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Interview Guide

The excerpts quoted here are from:

Central Organization for Statistics and Information Technology; and the Kurdistan Region Statistics Organization. (2012) "Instructions on Filling Out the HSES 2012 Questionnaire", `microdata.worldbank.org/index.php/catalog/2334/download/34768`, retrieved 10 January 2019 [the *Manual*].

Basic interview instructions

The scorecard can be filled out on paper in the field, with responses entered later in a spreadsheet or your own database. Alternatively, Scorocs' cloud-based data-collection tool works in a web browser or an Android phone, allowing data entry in the field or in the office. If there is no connection, then data is stored locally until there is a connection. Test the data-collection tool, or ask about a private account.

The scorecard should be completed in-person at the participant's residence by an enumerator trained to follow this "Guide".

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 made as part of the "Back-page Worksheet".

Do not directly ask the first scorecard question ("In what governorate does the household live?"). Instead, fill in the answer based on your knowledge of the governorate where the household lives.

In the same way, do not directly ask the the second scorecard question ("How many household members are there?"). Instead, mark the response based on the number of household members that you listed on the "Back-page Worksheet".

Ask the third and fourth scorecard questions ("What is the highest certificate that the male head/spouse attained?" and "How many bedrooms does the household have for its exclusive use?") directly of the respondent.

Do not directly ask the fifth and sixth scorecard questions ("What is the principal material of the floor?" and "What is the principal material of the walls?"). Instead, mark the response based on your own observation of the floor and walls of the residence. Ask the respondent these questions only if the principal material of the floor or walls is not obvious to you.

Ask all of the four remaining 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 for the interview need not be 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 does the interview. Rather, the field agent is the employee of the pro-poor program with whom the participant has an on-going relationship. If there is no such field agent, then leave those spaces in the scorecard header blank.

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

When you mark a response to a scorecard question, write the point value in the "Score" column and then circle the spelled-out response option, the pre-printed point value, and the hand-written points, like this:

4. How many bedrooms does the household have for its exclusive use?	A. None, or one	0	
	B. Two	2	2
	C. Three or more	5	

To help to reduce errors, you should:

- Write the points that correspond to the response in the far right-hand column
- Circle the pre-printed response, the pre-printed points, and the hand-written points

When an issue comes up that is not addressed in this Guide, its resolution should be left to the unaided judgment of the enumerator, as that apparently was the practice of COSIT in the 2012 HSES. That is, an organization using the scorecard should not promulgate any definitions or rules (other than those in this Guide) to be used by all its enumerators. 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. Instead, 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, in most cases you do not need to verify responses. You should verify only if something suggests to you that a response may be inaccurate and thus that verification might improve data quality. For example, you might choose to verify if the respondent hesitates, seems nervous, or otherwise gives signals that he/she may be lying, confused, or uncertain. Likewise, verification is probably appropriate if a child in the household or a neighbor says something that does not square with a respondent's answer. Verification is also a good idea if you can see something yourself that suggests that a response may be inaccurate, 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.

In general, the application of the scorecard should mimic as closely as possible the application of the 2012 HSES by Iraq's COSIT. For example, interviews should done in-person by a trained enumerator at the participant's residence because that is what COSIT did in the 2012 HSES.

Translation:

As of this writing, the scorecard itself, the "Back-page Worksheet", and this "Guide" are available only in English, (Mesopotamian) Arabic, and Sorani (Central Kurdish). There are not yet official, professional translations to other languages spoken in Iraq such as Kurmanji (Northern Kurdish). Users should check scorocs.com to see what translations have been done since this writing.

If there is not yet an official, professional translation to a desired language, then users should contact Scorocs for help in creating such a translation.

Who should be the respondent?

Remember that the respondent does not need to be the household member who is a participant with your organization (although the respondent may be that person).

According to p. 15 of the *Manual*, the respondent should be "able to give accurate information about the household. The preferred respondent is the head of the household. If the head not available, then any knowledgable adult household member (18-years-old or older) can be the respondent. If no knowledgable adult household member is available, then set up an appointment to do the interview at another time when one will be available. Do not try to get information from, for example, a child or a neighbor."

Who is the head of the household?

Note that the head of the household may or may not be the household member who is a participant with your organization (although the head may be that person).

According to p. 14 of the *Manual*, the *head of the household* is "the member of the household—regardless of age or sex—who is recognized by the other members of the household as the head and who is in charge of the household's social and economic affairs. The head may be, for example, a father, mother, or an older brother. The head is not necessarily the main breadwinner. For example, suppose a son is the only member of the household who works outside the home. If the son's father is the one who manages the affairs of the household, then the head of the household is the father, even though the son is the main breadwinner."

How to conduct an interview

According to pp. 3–4 of the *Manual*, "Your job as an enumerator is to collect information from survey respondents. The success of the survey depends heavily on the quality of your work. Do your level best to conduct the interview with the household professionally, not cavalierly. You should embody the following principles in your work.

"The first impression that you make when you meet the respondent who will provide information will greatly influence the quality of responses. Thus, be presentable and friendly. Show your ID that proves that you are an enumerator working for [your organization]. Impress the importance of the survey on the household. Put the respondent at ease so that he/she is in the right frame of mind for the interview. Use plain language to help the respondent understand what each question is asking.

"Be confident and positive when you invite the household to participate. Do not ask for the household's cooperation in a way that encourages it to refuse from the start. For example, do not say "Would you permit me to impose on your time?" Say instead, "I would like to talk to you for a time".

"Before agreeing to start the interview, the respondent may ask some questions about the survey and about why this particular household was selected instead of others. Answer directly and clearly so that the respondent feels safe and comfortable. Explain that all information will be kept strictly confidential and that the names of individuals will not be associated with the published results.

"Do not share blank or completed questionnaires with anyone other than authorized members of [your organization].

"Find a place to interview the respondent away from interruptions by children or others who are not members of the interviewed household. The presence of uninvolved third parties may distract the respondent and harm the accuracy of responses.

"Be positive and relaxed. If you suspect that a response is inaccurate, then re-phrase the question in a way that avoids suggesting to the respondent that he/she has answered incorrectly.

"Be neutral, and do not ask leading questions that suggest a certain answer. For example, do not say, 'Are you not working because you are a student?' Instead, read the pre-printed response options to the respondent and to let him/her choose from among them, or allow him/her the opportunity to respond without guidance. If a response is unclear or confusing, then do not suggest an answer, for example, by saying, 'Did you mean this or that?' If you do that, then the respondent may try to agree with what he/she believes that you expect even if that response is not accurate. Instead, tell the respondent something like 'I beg your pardon, but I did not hear you well. Could you please repeat what you just said?'. Or, 'Can you explain to me more?'

"Ask the questions in the order that they appear in [the scorecard]. If the respondent does not understand the question, then repeat the question slowly and clearly, being careful not to change its meaning nor to offer explanations other than those in [this Guide].

"Sometimes the respondent will refuse to answer or will say, 'I don't know'. In these cases, try to revive the respondent's interest in the survey, and mention that some people sometimes find some questions embarrassing. Create an atmosphere of trust and good will so that the respondent can speak without embarrassment or shame.

"Take your time; do not rush the interview. After asking a question, stop; give the respondent time to think. If the respondent feels rushed, then he/she may not take the time needed to give an inaccurate response or may just say, 'I do not know'.

"Ask all the questions, taking each one seriously. When you ask a question, do not betray any embarrassment, or else the respondent will also feel embarrassed.

"Do not try to induce the household to cooperate by promising (or giving the impression) that it or the neighborhood will receive any direct benefit.

"To the extent possible, ask questions of the member of the household who knows the most about the issue at hand.

"Read the questions word-for-word as they are written in [the scorecard].

"If the respondent is getting tired or is anxious to finish in order to do something else, then stop the interview and make an appointment to resume it later."

Qualities of an enumerator

According to p. 5 of the *Manual*, a good enumerator:

- Is realistic and sincere
- Asks questions in a neutral way
- Is precise and betrays no emotion when recording responses
- Marks responses clearly
- Earns the confidence of others, and shows confidence in others
- Is tidy, dresses modestly, and smiles
- Avoids acting like an investigator or someone giving an exam
- Answers questions with confidence, having mastered the questions and instructions in [this Guide]
- Carries everything needed to do the interview
- Tries to avoid mistakes and to improve his/her skills
- Keeps any electronic data-collection devices fully charged"

Precautionary safety measures

According to p. 5 of the *Manual*, "You probably will not face any security problems during field work. Nevertheless, mitigate risks by following these procedures:

- Carry your ID card at all times
- Dress modestly
- Bring another member of the survey team with you to the interview if you believe it is necessary
- Do the interview in the residence's front yard or in some other safe place
- Give the household to know that you are part of a team, that your team leader knows that you are visiting this household, and that the team leader may stop by at any time to check on you
- Halt the interview and leave immediately if you sense any danger at all, telling the household that you will return later
- Avoid discussing politics or national/sectarian issues

Guidelines for each indicator in the scorecard

1. In which governorate does the household live?
    A. Al-Qadisiya, or Al-Muthanna
    B. Thi-Qar
    C. Baghdad, Nineveh, or Missan
    D. Diala, or Duhouk
    E. Erbil, Kerbal, or Wasit
    F. Suleimaniya, or Salahuddin
    G. Basrah, Babil, Karkouk, Al-Anbar, or Al-Najaf

Unless you need to, do not ask this question directly of the respondent. Instead, mark the response based on your knowledge of the governorate in which the interviewed household lives.

2. How many household members are there?
    A. Ten or more
    B. Nine
    C. Eight
    D. Seven
    E. Six
    F. Five
    G. One, two, three, or four

Do not ask this question directly of the respondent. Instead, mark the response based on the number of household members that you listed on the "Back-page Worksheet".

According to p. 14 of the *Manual*, a *household* is "one or more people who share food and who together provide for their basic needs.

"A household usually consists of people who are related by blood or marriage (such as father, mother, children, and so on). A household may also include other people who are not related with other household members by blood or marriage but who nevertheless share food and provide for their basic needs together with the other members of the household.

"For example, a student who lives away from his/her parents with another household that resides close to the school that he/she attends is a member of the household with whom he/she lives if he/she lives, eats, and shares money with that household.

"In the same way, the members of an interviewed household include drivers, guards, or other live-in servants if they have lived and eaten with the interviewed household for at least 15 of the 30 days preceding the interview (even if they dine apart from other household members, as long as their food is prepared in the same kitchen as that of household members).

"In general, any person who has lived with the interviewed household for at least 15 of the 30 days preceding the interview and who intends to continue living with the interviewed household is counted as a member of the interviewed household.

"If work requires a person to be away from the interviewed household for more than 15 days, and if this person's expected stay with the interviewed household during time off from work is less than 15 days, then this person is not counted as a member of the interviewed household."

According to p. 12 of the *Manual*, "If a person shares food and fulfills his/her basic needs through a sharing arrangement with the interviewed household, then this person counts as a member of the interviewed household, even if he/she holds a ration card separate from the interviewed household's ration card."

According to the 2012 HSES questionnaire, when you compile the list of members of the household as part of the "Back-page Worksheet", you should "write the name of the head of the household first, followed by the name of the head's [eldest] spouse. Then record the head's children in order of age, listing any unmarried children first, followed by any married children (including the husband/wife and their children). Then record the name of the head's father/mother, any brothers/sisters of the head, any other relatives of the head, and finally any household members who are not relatives of the head."

3. What is the highest certificate that the male head/spouse attained?
    A. None
    B. Elementary
    C. No male head/spouse
    D. Intermediate (middle school)
    E. Basic, secondary, vocational, or diploma from an institution
    F. Bachelor's degree, higher diploma, Master's, Ph.D, or other

According to pp. 44–46 of the *Manual*, "A. None" applies if the male head/spouse "does not hold any academic qualification or certificate.

The *highest certificate attained* "means the highest level of education that [the male head/spouse] successfully completed. Ignore completed grades which have not resulted in a certificate. For example, a [male head/spouse] who has not completed the sixth grade is not counted as having a primary certificate. In the same way, a [male head/spouse] who has not completed the third intermediate (middle school) grade is not counted as having an intermediate (middle school) certificate. And so on.

Basic "means schools that cover nine grades: six grades of primary school and three grades of intermediate (middle school).

Vocational refers to courses of study (secondary, trade, industry, teacher's college) that run for three years after intermediate (middle school).

Other covers "religious schools including *Hawza* (religious seminary), *Qadiri* schools, *Hanafi* schools not affiliated with official educational authorities, and so on."

"If [the male head/spouse] completed a college degree that is not recognized by the Ministry of Higher Education, then count as the highest recognized certificate the one that he holds that precedes the (unrecognized) degree. For example, if [the male head/spouse] completed an unrecognized Bachelor's degree, then he is counted as holding a secondary certificate. If [the male head/spouse] completed a recognized Bachelor's degree and an unrecognized Master's degree, then he is counted as holding a Bachelor's degree. If [the male head/spouse] completed an unrecognized Bachelor's degree and an unrecognized Master's degree, then he is counted as holding a secondary certificate. And so on"

According to p. 14 of the *Manual*, the *head of the household* is "the member of the household—regardless of age or sex—who is recognized by the other members of the household as the head and who is in charge of the household's social and economic affairs. The head may be, for example, a father, mother, or an older brother. The head is not necessarily the main breadwinner. For example, suppose a son is the only member of the household who works outside of the home. If the son's father is the one who manages the affairs of the household, then the head of the household is the father, not the son, even though the son is the main breadwinner."

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, "What is the highest certificate that the male head/spouse attained?". Instead, use the actual first name or nickname of the male head/spouse, for example: "What is the highest certificate that Ahmad attained?"

If there is no male head/spouse, then do not ask the question of the respondent but rather mark "C. No male head/spouse" and go to the next indicator about the number of bedrooms.

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 household member who is a participant with your organization (although the head may be that person).

4. How many bedrooms does the household have for its exclusive use?
    A. None, or one
    B. Two
    C. Three or more

According to p. 30 of the *Manual*, a *room* is "a dwelling or part of a dwelling that is surrounded by walls, that has a roof, and that used for sleeping, sitting, dining, or studying . . . *Bedrooms* are rooms actually used—or meant to be used—for sleeping."

According to p. 33 of the *Manual*, you the enumerator should count only bedrooms that the household uses and that are not shared with any other households.

"If a room is used both for sleeping and for other purposes, then count it as a bedroom only if it is used mostly for sleeping."

5. What is the principal material of the floor? (*as observed by enumerator*)
    A. Concrete slab, dirt, or other
    B. Tile, or brick

Do not ask this question directly of the respondent. Instead, mark the response based on your own observation of the floor of the residence. Ask the respondent only if the principal material of the floor is not obvious to you.

According to p. 32 of the *Manual*, you the enumerator should "inspect the residence and then record the type of material used in the construction of its floor. If the floor is made from more than one type of material, then record the material that accounts for the largest share of the floor."

6. What is the principal material of the walls? (*as observed by enumerator*)
    A. Clay, bamboo, or other
    B. Stone
    C. Cement block, thermo-stone, or ready-made/pre-cast concrete
    D. Brick

Do not ask this question directly of the respondent. Instead, mark the response based on your own observation of the walls of the residence. Ask the respondent only if the principal material of the walls is not obvious to you.

According to p. 32 of the *Manual*, you the enumerator should "inspect the residence and then record the type of material used in the construction of its walls. If the walls are made from more than one type of material, then record the material that accounts for the largest share of the walls."

7. Do any members of the household own a refrigerator or a freezer?
    A. No
    B. Only refrigerator
    C. Freezer (regardless of refrigerator)

Do not read this question as written. Instead, ask two No/Yes questions:

- Do any members of the household own a refrigerator?
- Do any members of the household own a freezer?

Based on the two answers, mark the response to the scorecard question as follows:

Do any members of the household own an <ITEM>?		**Response to mark**
Refrigerator	**Freezer**	
No	No	A
Yes	No	B
No	Yes	C
Yes	Yes	C

According to p. 92 of the *Manual*, you should count only refrigerators and freezers "that are owned by household members and that are usable or could be repaired at a reasonable cost."

8. Do any members of the household own an electric washing machine?
    A. No
    B. Yes

According to p. 92 of the *Manual*, you should count only electric washing machines "that are owned by household members and that are usable or could be repaired at a reasonable cost."

9. How many TVs are owned by members of the household?
    A. None, or one
    B. Two
    C. Three or more

According to p. 92 of the *Manual*, you should count only TVs "that are owned by household members and that are usable or could be repaired at a reasonable cost."

10. How many electric fans are owned by members of the household?
    A. None, or one
    B. Two
    C. Three
    D. Four or more

According to p. 92 of the *Manual*, you should count only fans "that are owned by household members and that are usable or could be repaired at a reasonable cost."

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,683	5,524	7,366
	Rate	Households	14,835	10.6	35.6	58.8
	Rate	People		14.8	44.9	68.5
Rural	Line	People		3,225	4,837	6,450
	Rate	Households	10,109	25.5	56.9	77.5
	Rate	People		30.6	64.3	83.5
All	Line	People		3,538	5,307	7,076
	Rate	Households	24,944	14.6	41.4	63.9
	Rate	People		19.8	51.0	73.3

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		2,122	3,574	6,143	24,236
	Rate	Households	14,835	0.6	9.4	44.1	98.6
	Rate	People		1.0	13.3	54.0	99.5
Rural	Line	People		1,858	3,130	5,379	21,223
	Rate	Households	10,109	3.4	23.8	65.1	99.7
	Rate	People		4.6	28.6	72.2	99.8
All	Line	People		2,039	3,434	5,902	23,284
	Rate	Households	24,944	1.4	13.3	49.8	98.9
	Rate	People		2.1	18.1	59.7	99.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Iraq): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		3,019	3,692	4,862	5,458	6,159	8,262
	Rate	Households	14,835	4.3	10.7	25.8	34.8	44.4	66.9
	Rate	People		6.4	15.0	33.7	43.9	54.3	76.0
Rural	Line	People		2,643	3,233	4,257	4,779	5,393	7,235
	Rate	Households	10,109	14.3	25.7	46.4	55.9	65.3	83.5
	Rate	People		17.8	30.8	53.7	63.3	72.4	88.6
All	Line	People		2,900	3,547	4,671	5,244	5,917	7,938
	Rate	Households	24,944	7.1	14.8	31.4	40.5	50.1	71.5
	Rate	People		10.0	20.0	40.0	50.0	60.0	80.0

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Anbar): National poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,260	4,890	6,520
	Rate	Households	1,025	7.2	30.1	59.5
	Rate	People		10.1	38.8	70.0
Rural	Line	People		3,115	4,672	6,230
	Rate	Households	673	13.2	46.5	73.6
	Rate	People		17.2	55.0	80.0
All	Line	People		3,186	4,779	6,372
	Rate	Households	1,698	10.1	38.1	66.3
	Rate	People		13.7	47.1	75.1

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Anbar): International 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,879	3,164	5,438	21,455
	Rate	Households	1,025	0.1	6.0	41.8	98.9
	Rate	People		0.1	8.4	51.9	99.7
Rural	Line	People		1,795	3,023	5,196	20,499
	Rate	Households	673	0.5	11.5	57.3	99.8
	Rate	People		0.5	15.5	65.1	99.9
All	Line	People		1,836	3,092	5,314	20,966
	Rate	Households	1,698	0.2	8.7	49.3	99.3
	Rate	People		0.3	12.1	58.7	99.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Anbar): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		2,672	3,268	4,304	4,832	5,452	7,314
	Rate	Households	1,025	1.4	7.5	21.1	29.3	42.0	70.9
	Rate	People		1.9	10.6	28.7	37.8	52.1	80.2
Rural	Line	People		2,553	3,122	4,112	4,617	5,210	6,988
	Rate	Households	673	5.8	13.3	30.2	44.9	57.6	80.2
	Rate	People		7.4	17.2	37.2	52.9	65.6	86.2
All	Line	People		2,611	3,193	4,206	4,722	5,328	7,147
	Rate	Households	1,698	3.5	10.3	25.5	36.8	49.6	75.4
	Rate	People		4.7	14.0	33.1	45.5	59.0	83.3

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Muthanna): National poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,281	4,921	6,561
	Rate	Households	402	23.6	56.6	78.5
	Rate	People		32.6	69.2	86.4
Rural	Line	People		3,053	4,579	6,105
	Rate	Households	446	52.8	79.4	91.7
	Rate	People		60.8	87.3	95.5
All	Line	People		3,153	4,729	6,305
	Rate	Households	848	38.1	67.9	85.1
	Rate	People		48.4	79.3	91.5

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Muthanna): International 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,890	3,184	5,472	21,589
	Rate	Households	402	2.3	21.2	63.3	99.6
	Rate	People		4.5	30.3	74.6	99.9
Rural	Line	People		1,759	2,962	5,092	20,089
	Rate	Households	446	8.4	50.3	85.3	100.0
	Rate	People		12.4	58.7	91.7	100.0
All	Line	People		1,817	3,060	5,259	20,747
	Rate	Households	848	5.4	35.7	74.2	99.8
	Rate	People		9.0	46.2	84.2	100.0

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Muthanna): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,689	3,288	4,331	4,862	5,487	7,360
	Rate	Households	402	10.7	23.6	48.3	56.0	64.4	83.9
	Rate	People		16.2	32.6	61.2	68.5	75.6	90.5
Rural	Line	People		2,502	3,060	4,030	4,524	5,105	6,849
	Rate	Households	446	33.4	53.2	73.7	78.6	85.3	95.1
	Rate	People		42.1	61.4	81.8	86.6	91.7	97.7
All	Line	People		2,584	3,160	4,162	4,672	5,273	7,073
	Rate	Households	848	22.0	38.3	60.9	67.2	74.8	89.5
	Rate	People		30.7	48.8	72.7	78.7	84.6	94.5

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Najaf): National poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,150	4,726	6,301
	Rate	Households	382	4.6	18.7	39.9
	Rate	People		5.5	22.8	49.6
Rural	Line	People		2,907	4,360	5,813
	Rate	Households	257	15.0	47.5	77.0
	Rate	People		18.4	55.6	84.1
All	Line	People		3,073	4,610	6,146
	Rate	Households	639	7.4	26.5	49.9
	Rate	People		9.6	33.2	60.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Najaf): International 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,815	3,057	5,255	20,733
	Rate	Households	382	0.0	4.3	24.6	96.5
	Rate	People		0.0	5.2	31.7	98.6
Rural	Line	People		1,675	2,821	4,848	19,128
	Rate	Households	257	0.0	13.1	61.0	98.9
	Rate	People		0.0	14.0	69.4	99.2
All	Line	People		1,771	2,982	5,126	20,223
	Rate	Households	639	0.0	6.7	34.4	97.2
	Rate	People		0.0	8.0	43.7	98.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Najaf): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,582	3,158	4,159	4,669	5,269	7,068
	Rate	Households	382	2.2	4.6	11.3	17.9	24.6	48.9
	Rate	People		2.7	5.5	13.6	21.7	31.7	58.9
Rural	Line	People		2,382	2,914	3,837	4,308	4,861	6,521
	Rate	Households	257	4.3	15.0	33.1	46.4	61.4	84.2
	Rate	People		5.2	18.4	39.2	54.4	69.8	89.8
All	Line	People		2,519	3,080	4,057	4,554	5,139	6,894
	Rate	Households	639	2.8	7.4	17.2	25.6	34.6	58.4
	Rate	People		3.5	9.6	21.8	32.1	43.8	68.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Qadisiya): National poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,131	4,697	6,263
	Rate	Households	454	23.5	59.2	77.6
	Rate	People		29.2	68.2	83.5
Rural	Line	People		2,963	4,445	5,927
	Rate	Households	391	50.9	78.4	89.9
	Rate	People		57.4	83.8	93.2
All	Line	People		3,059	4,589	6,119
	Rate	Households	845	34.3	66.9	82.5
	Rate	People		41.3	74.9	87.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Qadisiya): International 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,804	3,039	5,223	20,607
	Rate	Households	454	2.1	21.0	66.3	99.8
	Rate	People		2.9	26.0	74.3	99.8
Rural	Line	People		1,708	2,876	4,943	19,502
	Rate	Households	391	14.5	49.7	83.2	100.0
	Rate	People		18.3	56.3	87.8	100.0
All	Line	People		1,763	2,969	5,103	20,133
	Rate	Households	845	7.0	32.3	73.0	99.9
	Rate	People		9.5	39.0	80.1	99.9

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Al-Qadisiya): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		2,567	3,139	4,134	4,641	5,237	7,025
	Rate	Households	454	11.1	23.6	47.2	57.7	66.4	83.6
	Rate	People		13.7	29.4	56.5	66.8	74.4	88.2
Rural	Line	People		2,429	2,971	3,912	4,392	4,956	6,648
	Rate	Households	391	38.3	51.5	72.6	78.2	83.2	93.6
	Rate	People		43.4	57.9	79.0	83.6	87.8	95.9
All	Line	People		2,508	3,067	4,039	4,534	5,117	6,864
	Rate	Households	845	21.9	34.6	57.3	65.8	73.1	87.6
	Rate	People		26.4	41.6	66.2	74.0	80.1	91.5

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,232	4,848	6,464
	Rate	Households	414	5.7	24.0	44.8
	Rate	People		8.3	32.9	55.2
Rural	Line	People		3,002	4,504	6,005
	Rate	Households	447	13.9	48.4	74.4
	Rate	People		16.7	56.3	80.9
All	Line	People		3,109	4,663	6,217
	Rate	Households	861	9.6	35.6	58.9
	Rate	People		12.8	45.4	69.0

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,862	3,136	5,391	21,268
	Rate	Households	414	0.2	4.5	28.8	97.9
	Rate	People		0.2	6.5	38.5	99.2
Rural	Line	People		1,730	2,914	5,008	19,758
	Rate	Households	447	0.2	12.3	58.6	100.0
	Rate	People		0.5	14.9	65.9	100.0
All	Line	People		1,791	3,017	5,185	20,458
	Rate	Households	861	0.2	8.2	43.0	98.9
	Rate	People		0.3	11.0	53.2	99.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Babil): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,649	3,240	4,266	4,790	5,405	7,250
	Rate	Households	414	3.2	5.9	15.1	23.5	28.8	53.2
	Rate	People		4.3	8.6	21.8	32.0	38.5	64.0
Rural	Line	People		2,461	3,010	3,963	4,450	5,021	6,736
	Rate	Households	447	5.3	14.4	36.4	47.7	58.8	80.9
	Rate	People		6.4	17.2	42.4	55.6	66.0	87.6
All	Line	People		2,548	3,116	4,104	4,607	5,199	6,974
	Rate	Households	861	4.2	9.9	25.2	35.0	43.0	66.4
	Rate	People		5.4	13.2	32.9	44.7	53.2	76.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,863	5,794	7,726
	Rate	Households	1,605	10.6	37.6	60.6
	Rate	People		15.8	47.9	70.9
Rural	Line	People		3,578	5,366	7,155
	Rate	Households	527	28.2	66.9	83.4
	Rate	People		33.2	72.8	87.9
All	Line	People		3,827	5,740	7,654
	Rate	Households	2,132	12.4	40.8	63.0
	Rate	People		18.0	51.1	73.0

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		2,226	3,749	6,443	25,420
	Rate	Households	1,605	0.4	9.1	46.1	98.9
	Rate	People		0.6	13.3	57.1	99.6
Rural	Line	People		2,061	3,472	5,967	23,544
	Rate	Households	527	3.0	26.6	74.1	99.8
	Rate	People		3.3	31.3	79.5	99.9
All	Line	People		2,205	3,714	6,383	25,183
	Rate	Households	2,132	0.6	10.9	49.0	99.0
	Rate	People		0.9	15.6	59.9	99.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Baghdad): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		3,166	3,872	5,099	5,725	6,460	8,666
	Rate	Households	1,605	3.7	10.7	26.7	36.7	46.5	68.3
	Rate	People		5.9	16.0	35.9	47.0	57.5	78.0
Rural	Line	People		2,932	3,586	4,723	5,302	5,983	8,026
	Rate	Households	527	15.7	29.3	53.7	66.6	74.4	88.8
	Rate	People		18.2	34.4	60.8	72.5	79.7	91.8
All	Line	People		3,137	3,836	5,052	5,671	6,400	8,585
	Rate	Households	2,132	4.9	12.7	29.6	39.9	49.4	70.5
	Rate	People		7.5	18.3	39.1	50.2	60.3	79.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,133	4,699	6,265
	Rate	Households	1,104	8.2	32.8	59.2
	Rate	People		11.5	42.0	69.2
Rural	Line	People		2,964	4,445	5,927
	Rate	Households	378	13.3	39.0	64.9
	Rate	People		17.5	46.9	72.1
All	Line	People		3,098	4,647	6,196
	Rate	Households	1,482	9.2	34.0	60.3
	Rate	People		12.7	43.0	69.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,805	3,040	5,225	20,616
	Rate	Households	1,104	0.5	7.5	45.6	99.5
	Rate	People		1.0	10.5	56.0	99.8
Rural	Line	People		1,708	2,876	4,943	19,503
	Rate	Households	378	1.4	12.6	47.4	99.2
	Rate	People		1.8	16.6	55.1	99.4
All	Line	People		1,785	3,007	5,168	20,389
	Rate	Households	1,482	0.7	8.5	46.0	99.5
	Rate	People		1.1	11.7	55.8	99.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Basrah): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,568	3,140	4,135	4,643	5,239	7,028
	Rate	Households	1,104	3.0	8.3	22.0	31.6	45.8	68.7
	Rate	People		4.6	11.7	29.1	39.8	56.2	77.0
Rural	Line	People		2,429	2,971	3,912	4,392	4,956	6,649
	Rate	Households	378	7.0	13.3	31.5	38.4	48.7	73.5
	Rate	People		9.0	17.5	39.5	46.5	56.0	79.2
All	Line	People		2,540	3,106	4,090	4,592	5,182	6,951
	Rate	Households	1,482	3.8	9.3	23.8	32.9	46.4	69.6
	Rate	People		5.5	12.8	31.2	41.2	56.2	77.4

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,254	4,880	6,507
	Rate	Households	601	9.9	34.2	59.9
	Rate	People		13.0	41.5	68.2
Rural	Line	People		3,033	4,550	6,067
	Rate	Households	670	18.9	49.1	71.4
	Rate	People		22.5	54.8	77.0
All	Line	People		3,138	4,706	6,275
	Rate	Households	1,271	14.3	41.5	65.6
	Rate	People		18.0	48.5	72.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,875	3,157	5,427	21,412
	Rate	Households	601	0.2	8.8	43.1	98.9
	Rate	People		0.3	11.9	51.2	99.4
Rural	Line	People		1,748	2,944	5,059	19,962
	Rate	Households	670	0.9	16.7	58.4	99.8
	Rate	People		1.3	20.3	64.3	99.9
All	Line	People		1,808	3,045	5,233	20,648
	Rate	Households	1,271	0.5	12.7	50.6	99.3
	Rate	People		0.8	16.3	58.1	99.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Diala): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,667	3,261	4,295	4,822	5,441	7,299
	Rate	Households	601	2.8	9.9	25.0	33.3	43.7	69.1
	Rate	People		4.0	13.1	31.4	40.5	51.6	76.0
Rural	Line	People		2,486	3,041	4,004	4,495	5,073	6,805
	Rate	Households	670	10.0	18.9	41.2	48.5	58.4	78.0
	Rate	People		12.0	22.5	47.6	54.2	64.3	82.9
All	Line	People		2,572	3,145	4,142	4,650	5,247	7,039
	Rate	Households	1,271	6.3	14.3	33.0	40.7	50.9	73.5
	Rate	People		8.2	18.0	39.9	47.7	58.3	79.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		5,312	7,969	10,625
	Rate	Households	889	13.0	41.4	65.9
	Rate	People		16.5	50.4	74.1
Rural	Line	People		4,769	7,154	9,539
	Rate	Households	457	25.8	61.1	79.0
	Rate	People		32.5	69.5	85.4
All	Line	People		5,163	7,745	10,327
	Rate	Households	1,346	16.3	46.5	69.3
	Rate	People		20.9	55.6	77.2

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		3,061	5,155	8,861	34,960
	Rate	Households	889	0.7	11.0	50.2	98.9
	Rate	People		1.0	14.2	59.4	99.5
Rural	Line	People		2,748	4,628	7,955	31,386
	Rate	Households	457	2.6	24.2	68.0	99.6
	Rate	People		3.7	30.7	75.9	99.8
All	Line	People		2,975	5,011	8,612	33,979
	Rate	Households	1,346	1.2	14.4	54.8	99.1
	Rate	People		1.7	18.7	64.0	99.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Duhouk): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		4,354	5,325	7,013	7,873	8,885	11,918
	Rate	Households	889	4.7	13.1	31.3	40.5	50.6	73.8
	Rate	People		6.4	16.7	38.4	49.6	59.7	81.5
Rural	Line	People		3,909	4,781	6,296	7,068	7,976	10,700
	Rate	Households	457	13.0	25.8	51.0	60.8	68.2	86.1
	Rate	People		16.6	32.5	58.8	69.2	76.2	91.3
All	Line	People		4,232	5,176	6,816	7,652	8,635	11,584
	Rate	Households	1,346	6.9	16.4	36.4	45.8	55.1	77.0
	Rate	People		9.2	21.1	44.0	55.0	64.2	84.2

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		5,190	7,785	10,381
	Rate	Households	1,354	6.6	27.7	53.1
	Rate	People		9.2	33.6	60.4
Rural	Line	People		4,975	7,463	9,951
	Rate	Households	572	22.4	55.6	79.4
	Rate	People		26.3	62.0	84.9
All	Line	People		5,153	7,730	10,306
	Rate	Households	1,926	9.2	32.3	57.3
	Rate	People		12.2	38.5	64.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		2,991	5,037	8,657	34,157
	Rate	Households	1,354	0.4	5.8	35.9	97.5
	Rate	People		0.6	8.2	41.9	98.7
Rural	Line	People		2,867	4,828	8,299	32,742
	Rate	Households	572	1.7	19.9	66.2	99.4
	Rate	People		2.3	23.4	73.5	99.5
All	Line	People		2,969	5,001	8,595	33,912
	Rate	Households	1,926	0.6	8.1	40.8	97.8
	Rate	People		0.9	10.9	47.3	98.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Erbil): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		4,254	5,203	6,852	7,692	8,680	11,644
	Rate	Households	1,354	3.1	6.6	19.7	27.2	35.9	61.8
	Rate	People		4.6	9.2	24.6	32.9	41.9	68.9
Rural	Line	People		4,078	4,987	6,568	7,374	8,321	11,162
	Rate	Households	572	9.7	22.4	38.9	53.7	66.4	86.2
	Rate	People		13.1	26.3	45.8	60.2	73.7	90.3
All	Line	People		4,224	5,165	6,803	7,637	8,618	11,561
	Rate	Households	1,926	4.1	9.2	22.8	31.5	40.8	65.8
	Rate	People		6.1	12.2	28.3	37.6	47.3	72.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,427	5,140	6,854
	Rate	Households	377	3.3	21.2	40.9
	Rate	People		5.4	26.9	50.2
Rural	Line	People		3,044	4,566	6,088
	Rate	Households	449	12.7	49.0	74.5
	Rate	People		13.9	55.4	79.6
All	Line	People		3,304	4,956	6,608
	Rate	Households	826	5.5	27.7	48.7
	Rate	People		8.2	36.0	59.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,975	3,326	5,716	22,551
	Rate	Households	377	0.0	3.3	29.6	98.2
	Rate	People		0.0	5.4	38.0	99.3
Rural	Line	People		1,754	2,954	5,077	20,032
	Rate	Households	449	0.4	11.8	57.2	99.4
	Rate	People		0.4	13.1	63.8	99.9
All	Line	People		1,904	3,207	5,511	21,745
	Rate	Households	826	0.1	5.3	36.0	98.5
	Rate	People		0.1	7.9	46.3	99.5

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Karkouk): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		2,809	3,435	4,524	5,079	5,731	7,688
	Rate	Households	377	1.7	3.3	12.6	20.1	29.6	50.1
	Rate	People		2.7	5.4	16.5	25.6	38.0	60.1
Rural	Line	People		2,495	3,051	4,018	4,511	5,091	6,829
	Rate	Households	449	3.7	12.7	34.7	45.5	57.2	80.3
	Rate	People		5.0	13.9	41.0	51.9	63.8	84.5
All	Line	People		2,708	3,312	4,362	4,897	5,526	7,413
	Rate	Households	826	2.1	5.5	17.8	26.0	36.0	57.1
	Rate	People		3.4	8.2	24.3	34.0	46.3	67.9

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,317	4,975	6,633
	Rate	Households	316	8.3	37.1	60.5
	Rate	People		10.0	44.9	69.5
Rural	Line	People		3,092	4,637	6,183
	Rate	Households	292	9.0	44.8	73.1
	Rate	People		11.7	51.6	78.0
All	Line	People		3,242	4,862	6,483
	Rate	Households	608	8.5	39.3	64.2
	Rate	People		10.6	47.1	72.4

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,911	3,219	5,532	21,827
	Rate	Households	316	0.0	7.7	44.8	99.4
	Rate	People		0.0	9.4	53.3	99.8
Rural	Line	People		1,781	3,000	5,157	20,346
	Rate	Households	292	0.1	7.0	55.9	100.0
	Rate	People		0.1	9.8	61.4	100.0
All	Line	People		1,868	3,146	5,407	21,332
	Rate	Households	608	0.0	7.5	48.0	99.5
	Rate	People		0.0	9.6	56.0	99.9

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Kerbala): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,719	3,325	4,378	4,915	5,547	7,441
	Rate	Households	316	4.0	8.3	25.8	36.1	44.9	70.7
	Rate	People		5.4	10.0	30.6	44.0	53.5	78.9
Rural	Line	People		2,534	3,099	4,081	4,582	5,171	6,936
	Rate	Households	292	2.2	9.0	33.3	42.3	56.2	82.2
	Rate	People		2.9	11.8	41.0	49.0	61.7	85.4
All	Line	People		2,657	3,249	4,279	4,804	5,421	7,272
	Rate	Households	608	3.5	8.5	27.9	37.9	48.2	74.0
	Rate	People		4.6	10.6	34.1	45.6	56.2	81.0

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		2,954	4,431	5,908
	Rate	Households	732	17.6	53.7	74.4
	Rate	People		24.4	66.1	84.8
Rural	Line	People		3,016	4,524	6,032
	Rate	Households	545	61.6	86.8	95.8
	Rate	People		70.0	91.3	97.4
All	Line	People		2,973	4,459	5,945
	Rate	Households	1,277	29.8	62.9	80.3
	Rate	People		38.2	73.7	88.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,702	2,867	4,927	19,441
	Rate	Households	732	1.8	16.3	60.6	98.9
	Rate	People		3.2	23.1	72.3	99.7
Rural	Line	People		1,738	2,927	5,030	19,847
	Rate	Households	545	13.9	59.5	90.2	99.9
	Rate	People		19.0	67.7	93.7	100.0
All	Line	People		1,713	2,885	4,958	19,563
	Rate	Households	1,277	5.2	28.3	68.8	99.2
	Rate	People		8.0	36.6	78.7	99.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Missan): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,421	2,961	3,900	4,378	4,941	6,627
	Rate	Households	732	9.8	17.7	41.3	51.7	61.0	78.9
	Rate	People		14.0	24.5	52.3	63.6	72.7	88.1
Rural	Line	People		2,472	3,023	3,981	4,470	5,044	6,766
	Rate	Households	545	45.4	61.6	81.0	86.5	90.3	96.6
	Rate	People		55.8	70.0	86.1	91.1	93.8	98.2
All	Line	People		2,437	2,980	3,924	4,406	4,972	6,669
	Rate	Households	1,277	19.7	29.8	52.3	61.3	69.1	83.8
	Rate	People		26.6	38.2	62.5	71.8	79.0	91.2

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,128	4,692	6,255
	Rate	Households	859	20.7	51.4	74.3
	Rate	People		25.1	59.4	80.2
Rural	Line	People		3,068	4,602	6,136
	Rate	Households	990	34.7	63.0	78.8
	Rate	People		42.1	71.7	86.4
All	Line	People		3,104	4,656	6,208
	Rate	Households	1,849	25.9	55.7	76.0
	Rate	People		31.9	64.3	82.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,802	3,035	5,217	20,583
	Rate	Households	859	1.5	19.3	61.2	99.0
	Rate	People		1.8	23.7	67.6	99.7
Rural	Line	People		1,768	2,977	5,117	20,190
	Rate	Households	990	3.4	32.5	69.5	99.8
	Rate	People		4.9	39.3	77.5	99.9
All	Line	People		1,789	3,012	5,177	20,427
	Rate	Households	1,849	2.2	24.2	64.3	99.3
	Rate	People		3.0	29.9	71.5	99.8

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Nineveh): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		2,564	3,135	4,129	4,635	5,231	7,017
	Rate	Households	859	9.8	20.7	41.1	51.0	62.0	80.1
	Rate	People		13.2	25.1	47.5	59.0	68.2	85.2
Rural	Line	People		2,515	3,075	4,050	4,547	5,131	6,883
	Rate	Households	990	18.6	34.7	54.4	62.1	69.7	83.8
	Rate	People		23.9	42.1	63.7	70.7	77.7	90.8
All	Line	People		2,544	3,111	4,097	4,600	5,191	6,964
	Rate	Households	1,849	13.0	25.9	46.0	55.2	64.9	81.5
	Rate	People		17.5	31.9	53.9	63.7	72.0	87.4

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,372	5,058	6,744
	Rate	Households	795	6.8	30.7	55.8
	Rate	People		9.2	38.7	65.6
Rural	Line	People		3,111	4,667	6,222
	Rate	Households	909	14.1	43.6	68.4
	Rate	People		17.8	50.9	76.2
All	Line	People		3,230	4,845	6,460
	Rate	Households	1,704	10.5	37.3	62.3
	Rate	People		13.9	45.3	71.3

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,943	3,272	5,624	22,191
	Rate	Households	795	0.1	5.4	39.4	98.4
	Rate	People		0.1	7.7	48.7	99.5
Rural	Line	People		1,793	3,019	5,189	20,474
	Rate	Households	909	1.4	12.8	52.8	98.9
	Rate	People		1.9	15.9	60.9	99.2
All	Line	People		1,861	3,135	5,388	21,258
	Rate	Households	1,704	0.8	9.2	46.3	98.6
	Rate	People		1.1	12.2	55.3	99.3

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Salahuddin): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		2,764	3,380	4,451	4,997	5,639	7,565
	Rate	Households	795	2.4	7.2	22.4	29.9	39.5	64.8
	Rate	People		3.7	10.1	29.8	37.8	48.8	73.8
Rural	Line	People		2,550	3,119	4,107	4,611	5,203	6,980
	Rate	Households	909	7.3	14.4	33.0	42.3	52.9	75.9
	Rate	People		8.8	18.0	39.9	49.7	61.0	82.7
All	Line	People		2,648	3,238	4,264	4,787	5,402	7,247
	Rate	Households	1,704	4.9	10.9	27.8	36.3	46.4	70.5
	Rate	People		6.5	14.4	35.3	44.3	55.5	78.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		4,837	7,256	9,675
	Rate	Households	2,134	4.9	21.7	45.0
	Rate	People		6.4	26.8	52.7
Rural	Line	People		4,510	6,766	9,021
	Rate	Households	1,149	10.7	37.5	61.2
	Rate	People		12.4	43.0	66.5
All	Line	People		4,782	7,174	9,565
	Rate	Households	3,283	5.8	24.0	47.4
	Rate	People		7.4	29.6	55.0

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		2,787	4,694	8,068	31,834
	Rate	Households	2,134	0.3	4.5	28.6	97.6
	Rate	People		0.5	5.9	34.9	99.2
Rural	Line	People		2,599	4,377	7,523	29,682
	Rate	Households	1,149	1.4	9.1	45.1	99.6
	Rate	People		1.6	10.7	51.3	99.9
All	Line	People		2,756	4,641	7,977	31,473
	Rate	Households	3,283	0.4	5.2	31.1	97.9
	Rate	People		0.7	6.7	37.6	99.3

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Suleimaniya): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		3,965	4,849	6,386	7,169	8,090	10,852
	Rate	Households	2,134	1.8	4.9	13.4	21.2	28.9	54.4
	Rate	People		2.3	6.4	16.8	26.2	35.3	62.6
Rural	Line	People		3,697	4,521	5,954	6,685	7,543	10,119
	Rate	Households	1,149	5.5	10.7	28.8	36.7	45.1	71.9
	Rate	People		6.5	12.4	34.1	42.3	51.3	77.4
All	Line	People		3,920	4,794	6,313	7,088	7,998	10,729
	Rate	Households	3,283	2.4	5.8	15.7	23.5	31.4	57.0
	Rate	People		3.0	7.4	19.7	28.9	38.0	65.1

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Thi-Qar): National poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,148	4,723	6,297
	Rate	Households	670	18.3	50.0	70.4
	Rate	People		24.0	59.7	78.3
Rural	Line	People		2,968	4,452	5,936
	Rate	Households	400	49.8	81.3	93.1
	Rate	People		56.5	86.7	95.5
All	Line	People		3,078	4,616	6,155
	Rate	Households	1,070	29.5	61.0	78.4
	Rate	People		36.8	70.3	85.1

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Thi-Qar): International 2011 PPP poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,814	3,055	5,252	20,720
	Rate	Households	670	1.6	16.9	57.1	99.2
	Rate	People		2.3	22.3	66.5	99.6
Rural	Line	People		1,710	2,880	4,951	19,533
	Rate	Households	400	9.3	48.2	86.9	100.0
	Rate	People		12.7	55.1	91.3	100.0
All	Line	People		1,773	2,987	5,133	20,254
	Rate	Households	1,070	4.4	28.0	67.7	99.5
	Rate	People		6.3	35.2	76.3	99.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Thi-Qar): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates					
				Percentile-based lines (2012 def.)					
				10th	20th	40th	50th	60th	80th
Urban	Line	People		2,581	3,156	4,156	4,666	5,266	7,063
	Rate	Households	670	7.1	18.6	40.0	48.9	57.5	76.7
	Rate	People		9.4	24.5	49.8	58.7	66.7	84.5
Rural	Line	People		2,433	2,975	3,918	4,399	4,964	6,659
	Rate	Households	400	31.6	50.0	73.1	80.9	87.1	95.5
	Rate	People		38.1	56.7	78.7	86.5	91.5	97.2
All	Line	People		2,523	3,085	4,063	4,561	5,147	6,905
	Rate	Households	1,070	15.8	29.7	51.7	60.2	67.9	83.4
	Rate	People		20.6	37.1	61.1	69.6	76.5	89.5

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates		
				National (2012 def.)		
				100%	150%	200%
Urban	Line	People		3,200	4,800	6,399
	Rate	Households	722	14.3	37.5	60.5
	Rate	People		18.9	46.9	70.3
Rural	Line	People		3,004	4,506	6,008
	Rate	Households	557	27.2	56.4	76.8
	Rate	People		30.5	63.6	83.6
All	Line	People		3,118	4,677	6,236
	Rate	Households	1,279	19.0	44.5	66.5
	Rate	People		23.7	53.9	75.9

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

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

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates Intl. 2011 PPP (2012 def.) $1.90	$3.20	$5.50	$21.70
Urban	Line	People		1,844	3,105	5,337	21,057
	Rate	Households	722	2.0	13.4	45.6	99.1
	Rate	People		2.9	17.9	55.2	99.8
Rural	Line	People		1,731	2,915	5,011	19,771
	Rate	Households	557	6.7	25.5	64.7	99.2
	Rate	People		7.0	29.0	72.7	99.6
All	Line	People		1,797	3,026	5,201	20,520
	Rate	Households	1,279	3.8	17.9	52.6	99.1
	Rate	People		4.6	22.5	62.5	99.7

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 1 (Wasit): Percentile-based poverty lines and poverty rates for households and people by urban/rural/all

Area	Line or Rate	Households or People	*n*	Poverty lines and poverty rates: Percentile-based lines (2012 def.) 10th	20th	40th	50th	60th	80th
Urban	Line	People		2,623	3,207	4,224	4,742	5,351	7,178
	Rate	Households	722	7.3	14.6	29.6	36.9	45.8	67.8
	Rate	People		9.2	19.2	37.8	46.2	55.4	76.8
Rural	Line	People		2,463	3,011	3,966	4,452	5,024	6,740
	Rate	Households	557	16.3	27.2	46.6	55.9	64.9	82.2
	Rate	People		18.6	30.5	52.4	62.7	72.8	88.3
All	Line	People		2,556	3,126	4,116	4,621	5,215	6,995
	Rate	Households	1,279	10.7	19.3	35.9	43.9	52.8	73.1
	Rate	People		13.1	23.9	43.9	53.0	62.7	81.6

Source: 2012 HSES

Poverty rates are percentages.

Poverty lines are IQD per-person per-day.

Lines are adjusted for prices by region and month in the 2012 HSES field work.

Table 2: Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
1,713	How many members of the household are 18-years-old or younger? (Seven or more; Six; Five; Four; Three; Two; One; None)
1,681	How many members of the household are 17-years-old or younger? (Six or more; Five; Four; Three; Two; One; None)
1,672	How many members of the household are 16-years-old or younger? (Six or more; Five; Four; Three; Two; One; None)
1,665	How many members of the household are 15-years-old or younger? (Six or more; Five; Four; Three; Two; One; None)
1,633	How many members of the household are 14-years-old or younger? (Five or more; Four; Three; Two; One; None)
1,533	How many members of the household are 13-years-old or younger? (Five or more; Four; Three; Two; One; None)
1,455	How many members of the household are 12-years-old or younger? (Five or more; Four; Three; Two; One; None)
1,396	How many household members are there? (Ten or more; Nine; Eight; Seven; Six; Five; One, two, three, or four)
1,338	How many members of the household are 11-years-old or younger? (Five or more; Four; Three; Two; One; None)
849	Do all household members ages 6 to 14 currently attend school? (No; Yes; No members ages 6 to 14)
845	How many members of the household are 6-years-old or younger? (Three or more; Two; One; None)
831	Do all household members ages 6 to 15 currently attend school? (No; Yes; No members ages 6 to 15)
812	Do all household members ages 6 to 16 currently attend school? (No; Yes; No members ages 6 to 16)
787	Do all household members ages 6 to 17 currently attend school? (No; Yes; No members ages 6 to 17)
781	Do all household members ages 6 to 13 currently attend school? (No; Yes; No members ages 6 to 13)
765	Do all household members ages 6 to 12 currently attend school? (No; Yes; No members ages 6 to 12)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
760	Do all household members ages 6 to 18 currently attend school? (No; Yes; No members ages 6 to 18)
719	Do any members of the household own an electric vacuum cleaner? (No; Yes)
684	Do all household members ages 6 to 11 currently attend school? (No; Yes; No members ages 6 to 11)
611	How many air-conditioning units are owned by members of the household? (None; One; Two or more)
575	What is the highest certificate that the (eldest) female head/spouse attained? (No female head/spouse; None; Elementary; Intermediate (middle school); Basic, secondary, or vocational; Diploma from an institution; Bachelor's or master's degree, Ph.D, or other)
555	Do any members of the household own a personal computer? (No; Yes)
498	Do any members of the household own an electric washing machine? (No; Yes)
491	What is the highest certificate that the male head/spouse attained? (None; Elementary; No male head/spouse; Intermediate (middle school); Basic, secondary, vocational, or diploma from an institution; Bachelor's degree, higher diploma, Master's, Ph.D, or other)
412	What is the principal material of the floor? (*as observed by enumerator*) (Concrete slab, dirt, or other; Tile, or brick)
391	Do any members of the household own a water dispenser? (No; Yes)
345	What is the principal construction material of the roof? (*as observed by enumerator*) (Wood, other; Iron bars; Reinforced concrete)
343	What is the type of road that leads to the residence? (Dirt road, no road, or other; Paved road, no pavement; Paved road, non-paved pavement; Paved road, paved pavement)
336	In which governorate does the household live? (Al-Qadisiya, or Al-Muthanna; Thi-Qar; Baghdad, Nineveh, or Missan; Diala, or Duhouk; Erbil, Kerbal, or Wasit; Suleimaniya, or Salahuddin; Basrah, Babil, Karkouk, Al-Anbar, or Al-Najaf)
308	How many heaters (kerosene, gas, or electric) are owned by members of the household? (None, or one; Two; Three; Four or more)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
293	What is the main sewage-disposal system used by the household? (Open ditch, or other; Covered ditch, septic tank, or public sewer system)
273	Do any members of the household own a refrigerator or a freezer? (No; Only refrigerator; Freezer (regardless of refrigerator))
264	Do any members of the household own a motorcycle, a car, or a taxi (if the taxi is also being used by household)? (None; Only motorcycle; A car or a taxi (if it is also being used by household), regardless of motorcycle/scooter)
263	Do any members of the household own a car or a taxi (if the taxi is also being used by household)? (No; Yes)
247	What is the household's main source of water? (Tanker truck, river, canal, creek, pond/lake, spring, *kehriz* (man-made spring), or other; Public tap from public network, or open or covered well; Private tap from public network)
241	Do any members of the household own a freezer? (No; Yes_
238	What is the main method of cooling or air-conditioning the housing unit? (Fan, or other; Cooler; Air conditioner)
233	Do any members of the household own a TV, video/recorder or CD-player/DVD, or satellite dish? (No TV (regardless of anything else); TV but no satellite dish, video/recorder, nor CD-player/DVD; TV and satellite dish, but no video/recorder or CD-player/DVD; Video/recorder or CD-player/DVD (regardless of TV, satellite dish, video/recorder, or CD-player/DVD))
232	What type of toilet does your household have, and what sewage-disposal system does the household use? (Non-flush to ditch (open or covered), other, or no toilet (regardles of sewage-disposal system); Non-flush to septic tank or to public sewer system; Flush to septic tank, ditch (open or covered), or to other; Flush to public sewer system)
223	Do any members of the household own a video/recorder or CD-player/DVD? (No; Yes)
222	Do the members of the household own a PlayStation/video games? (No; Yes)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
208	How many TVs are owned by members of the household? (None, or one; Two; Three or more)
202	What is the principal material of the walls? (*as observed by enumerator*) (Clay, bamboo, or other; Stone; Cement block, thermo-stone, or ready-made/pre-cast concrete; Brick)
191	Does the household use electricity from the public grid, a shared generator, or a private generator? (Only public grid, only shared generator, only private generator, or none; Shared and private generator, but no public grid; Public grid and shared generator, but no private generator; Public grid and private generator, but no shared generator; Public grid, pricate generator, and shared generator)
188	What is the main source of energy for warming water? (Kerosene, wood, coal, plant material, dung, or other; Liquid gas cylinders; Electricity (from public network, or a shared or private generator)
176	How many electric fans are owned by members of the household? (None, or one; Two; Three; Four or more)
167	Can the (eldest) female head/spouse read and write? (No female head/spouse; No; Yes)
159	How many satellite dishes are owned by members of the household? (None, or one; Two or more)
158	What is the type of the residence? (*as observed by enumerator*) (Clay house, bamboo house, or other; House, or flat)
154	Do the members of the household own a water heater (electric, gas, solar, or kerosene)? (No; Yes)
144	Does the household use electricity from a shared generator? (No; Yes)
144	Can the male head/spouse read and write? (No; Yes; No male head/spouse)
141	Do any members of the household own an electrical generator? (No; Yes)
124	Does the household have a hall for its exclusive use? (No; Yes)
122	Do any members of the household own a refrigerator? (No; Yes)
115	In the past 12 months, did the household have any agricultural holdings, raise any livestock, or do any forestry or silviculture? (Yes; No)
93	In the past 12 months, did the household do any forestry or silviculture? (Yes; No)
78	Does the household use electricity from a private generator? (No; Yes)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
75	In what region does the household live? (Rest of Iraq (Nineveh, Karkouk, Diala, Al-Anbar, Babil, Kerbala, Wasit, Al-Najaf, Al-Qadisiya, Al-Muthanna, Thi-Qar, Missan, and Basrah); Baghdad; Kurdistan (Duhouk, Suleimaniya, Erbil, and Salahuddin))
75	Is the toilet flush or non-flush, and is it inside or outside of the household's residence, and is it shared or exclusively for the use of the household? (Non-flush toilet that is shared or outside the residence; Other toilet, or no toilet; Non-flush toilet that is for the exclusive use of the household and inside the residence; Flush toilet, regardless of all else)
75	Did the (eldest) female head/spouse work for at least one hour during the past week, including working for family businesses or for businesses of relatives, as an employee or self-employed, or with or without payment (excluding household chores)? (No female head/spouse; No; Yes)
73	How many coolers are owned by members of the household? (None; One; Two; Three or more)
72	In the past seven days, about how many hours per day on average did you have electricity from the public grid? (10 or 11; 12; 8 or 9; Five or less; 6 or 7; 13 to 19; 20 or more)
70	In the past 12 months, did the household raise any livestock? (Yes; No)
63	Does the household have a storage room for its exclusive use? (No; Yes)
56	In the past 12 months, did any member of the household work in an agricultural wage job? (Yes; No)
56	What is the total built area occupied by this household in square meters? (99 or less; 100; 101 to 120; 121 to 149; 150; 151 to 180; 181 to 198; 200; 201 or more)
52	Does your household have a flush toilet? (No; Yes)
51	In the past 12 months, did any member of the household 6-years-old or older work in an unpaid agricultural job? (Yes; No)
50	Did the male head/spouse work for at least one hour during the past week, including working for family businesses or for businesses of relatives, as an employee or self-employed, or with or without payment (excluding household chores)? (No; Yes; No male head/spouse)
48	In the past 12 months, did the household or any of its members have any agricultural holdings? (Yes; No)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
42	Does the male head/spouse suffer from any continuous, medically-diagnosed disability that is expected to continue for six months or more? (Yes; No; No male head/spouse)
42	Does the household head have a spouse/conjugal partner? (Male head without a spouse/conjugal partner; Female head without a spouse/conjugal partner; Yes)
37	Does the household have a garden for its exclusive use? (No; Yes)
33	How many household members 6-years-old or older worked at least one hour during the past week, including working for family businesses or for businesses of relatives, as an employee or self-employed, or with or without payment (excluding household chores)? (None; One: Two; Three or more)
31	How many households live in this dwelling? (One; Two or more)
27	Does the household have a bathroom for its exclusive use? (Yes; No)
26	What is the main source of energy used for heating? (LPG cylinder, wood, coal, plant material, electricity from shared or private generator, dung, or other; Kerosene; Electricity from public network)
22	Does the household have a guest room for its exclusive use? (No; Yes)
22	Did any household members suffer from any continuous, medically-diagnosed disability that is expected to continue for six months or more? (Yes; No)
18	In the past 12 months, did any member of the household 6-years-old or older work in an unpaid non-agricultural job? (No; Yes)
11	Does the household use electricity from the public grid? (No; Yes)
6	Does the (eldest) female head/spouse suffer from any continuous, medically-diagnosed disability that is expected to continue for six months or more? (No; No female head/spouse; Yes)
4	In the past 12 months, did any member of the household work in an agricultural wage job? (Yes; No)
2	In the past 12 months, did any household members 6-years-old or older work in a wage job (agricultural or non-agricultural)? (No; Yes)

Table 2 (cont.): Poverty indicators

Uncertainty coefficient	Indicator (Responses ordered starting with those linked with higher poverty likelihoods)
1	In the past 12 months, did any member of the household 6-years-old or older work in a non-agricultural wage job? (No; Yes)
1	How many bedrooms does the household have for its exclusive use? (None, or one; Two; Three or more)
0	In the past 12 months, did any member of the household 6-years-old or older work in a non-agricultural wage job? (No; Yes)
0	Does the household have a kitchen for its exclusive use? (No; Yes)
0	In the past 12 months, did man household members 6-years-old or older work in a non-wage job (agricultural or non-agricultural)? (No; Yes)
0	Do any members of the household own a motorcycle? (No; Yes)

Source: 2012 HSES with 150% of the national poverty line

Tables for
150% of the National Poverty Line

(and Tables Pertaining
to All Poverty Lines)

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:
0–25	94.2
26–31	87.1
32–35	80.2
36–38	74.0
39–40	71.5
41–42	71.0
43–44	60.8
45–46	56.2
47–48	44.7
49–50	43.2
51–52	41.8
53–54	29.3
55–56	22.8
57–58	19.2
59–60	15.8
61–62	15.8
63–65	9.3
66–68	6.5
69–71	3.6
72–78	2.4
79–100	0.2

Table 4 (150% of the national line): Derivation of estimated poverty likelihoods

Score	Households in range and < poverty line		All households in range		Poverty likelihood (%)
0–25	4,916	÷	5,218	=	94.2
26–31	4,982	÷	5,720	=	87.1
32–35	4,433	÷	5,529	=	80.2
36–38	3,731	÷	5,044	=	74.0
39–40	2,783	÷	3,892	=	71.5
41–42	3,146	÷	4,435	=	71.0
43–44	2,443	÷	4,018	=	60.8
45–46	2,639	÷	4,694	=	56.2
47–48	2,137	÷	4,777	=	44.7
49–50	2,361	÷	5,469	=	43.2
51–52	1,946	÷	4,653	=	41.8
53–54	1,418	÷	4,844	=	29.3
55–56	975	÷	4,280	=	22.8
57–58	929	÷	4,828	=	19.2
59–60	692	÷	4,366	=	15.8
61–62	642	÷	4,048	=	15.8
63–65	588	÷	6,344	=	9.3
66–68	315	÷	4,844	=	6.5
69–71	126	÷	3,551	=	3.6
72–78	130	÷	5,486	=	2.4
79–100	9	÷	3,959	=	0.2

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

Table 5 (150% of the national line): Errors in poverty likelihoods for a participant's household (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
0–25	–2.1	1.5	1.6	1.8
26–31	–5.5	3.6	3.8	4.0
32–35	–5.9	4.1	4.3	4.8
36–38	+3.4	3.7	4.3	5.6
39–40	–1.9	3.6	4.3	5.7
41–42	+8.7	3.9	4.9	6.1
43–44	+1.2	3.9	4.7	5.9
45–46	+4.8	3.7	4.5	5.8
47–48	–0.3	3.5	4.2	5.5
49–50	+4.4	3.4	4.0	5.3
51–52	–4.5	4.1	4.5	5.7
53–54	+13.7	2.2	2.6	3.4
55–56	–3.0	3.5	4.0	5.2
57–58	–9.1	6.5	6.7	7.6
59–60	+1.9	2.6	3.1	4.1
61–62	+4.2	2.3	2.8	3.6
63–65	+3.4	1.2	1.3	1.8
66–68	+1.5	1.6	2.0	2.5
69–71	–2.0	1.9	2.2	2.8
72–78	+1.0	0.6	0.8	1.0
79–100	+0.2	0.1	0.1	0.1

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

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

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+2.6	70.8	77.4	88.9
4	+2.2	38.6	46.1	59.3
8	+1.9	27.5	33.8	42.1
16	+1.3	19.1	23.1	30.6
32	+1.2	13.6	16.1	20.8
64	+1.3	9.2	10.8	15.1
128	+1.2	6.8	8.0	10.3
256	+1.1	4.6	5.5	7.6
512	+1.0	3.4	4.0	5.0
1,024	+1.0	2.5	2.9	3.7
2,048	+1.0	1.7	2.1	2.7
4,096	+1.0	1.2	1.5	1.9
8,192	+1.0	0.9	1.0	1.4
16,384	+1.0	0.6	0.7	1.0

Scorecard applied to 1,000 bootstraps from the validation sample.

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

	Poverty lines		
	National (2012 def.)		
	100%	150%	200%
Error (estimate minus observed value)	–0.2	+1.0	+1.6
Precision of estimate	0.4	0.6	0.6
Alpha factor for precision	0.90	0.95	1.07

Scorecard applied to 1,000 bootstraps of n = 16,384 from the 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 based on 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

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

	Poverty lines			
	Intl. 2011 PPP (2012 def.)			
	$1.90	$3.20	$5.50	$21.70
Error (estimate minus observed value)	+0.1	0.0	+1.3	0.0
Precision of estimate	0.1	0.4	0.6	0.2
Alpha factor for precision	0.88	0.94	1.00	1.26

Scorecard applied to 1,000 bootstraps of n = 16,384 from the 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 based on 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Table 7 (Percentile-based lines): Errors in estimated poverty rates for a sample of a population of participants' households at a point in time, precision, and the α factor for precision

	Poverty lines					
	Percentile-based lines (2012 def.)					
	10th	20th	40th	50th	60th	80th
Error (estimate minus observed value)	+0.2	–0.2	+1.1	+1.2	+1.1	+2.8
Precision of estimate	0.3	0.4	0.6	0.6	0.7	0.6
Alpha factor for precision	0.89	0.91	0.94	0.95	0.99	1.12

Scorecard applied to 1,000 bootstraps of n = 16,384 from the 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 based on 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
Poor	**Inclusion** Poor correctly targeted	**Undercoverage** Poor mistakenly not targeted
Non-poor	**Leakage** Non-poor mistakenly targeted	**Exclusion** Non-poor correctly not targeted

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

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
<=25	4.8	36.7	0.3	58.2	63.0
<=31	9.8	31.7	0.9	57.6	67.4
<=35	14.1	27.4	1.8	56.7	70.8
<=38	17.8	23.8	3.0	55.4	73.2
<=40	20.7	20.9	4.1	54.3	75.0
<=42	23.4	18.1	5.6	52.9	76.3
<=44	26.1	15.4	7.3	51.1	77.3
<=46	28.5	13.1	9.6	48.8	77.3
<=48	30.8	10.7	12.2	46.2	77.1
<=50	33.0	8.5	15.1	43.3	76.3
<=52	35.1	6.4	18.0	40.4	75.6
<=54	36.4	5.1	22.2	36.2	72.7
<=56	37.6	3.9	25.7	32.8	70.4
<=58	38.8	2.7	28.8	29.7	68.5
<=60	39.6	2.0	32.4	26.0	65.6
<=62	40.2	1.3	36.1	22.3	62.5
<=65	40.8	0.7	41.3	17.2	58.0
<=68	41.2	0.4	45.2	13.2	54.4
<=71	41.4	0.1	48.6	9.8	51.2
<=78	41.5	0.0	54.4	4.1	45.6
<=100	41.5	0.0	58.5	0.0	41.5

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 participants' 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
<=25	5.1	94.5	11.7	17.2:1
<=31	10.7	91.8	23.6	11.1:1
<=35	15.9	88.8	34.0	7.9:1
<=38	20.8	85.5	42.8	5.9:1
<=40	24.8	83.4	49.7	5.0:1
<=42	29.0	80.8	56.3	4.2:1
<=44	33.5	78.1	62.9	3.6:1
<=46	38.1	74.7	68.5	3.0:1
<=48	43.0	71.6	74.2	2.5:1
<=50	48.2	68.5	79.5	2.2:1
<=52	53.2	66.1	84.6	1.9:1
<=54	58.6	62.1	87.7	1.6:1
<=56	63.3	59.4	90.5	1.5:1
<=58	67.6	57.4	93.5	1.3:1
<=60	72.0	55.0	95.3	1.2:1
<=62	76.4	52.7	96.8	1.1:1
<=65	82.1	49.7	98.3	1.0:1
<=68	86.4	47.7	99.1	0.9:1
<=71	90.0	46.0	99.7	0.9:1
<=78	95.9	43.3	100.0	0.8:1
<=100	100.0	41.5	100.0	0.7:1

Scorecard applied to the validation sample.

Tables for
100% of the National Poverty Line

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:
0–25	71.9
26–31	50.9
32–35	36.3
36–38	28.6
39–40	24.0
41–42	19.0
43–44	14.3
45–46	11.7
47–48	8.5
49–50	8.5
51–52	4.2
53–54	3.9
55–56	2.9
57–58	1.8
59–60	1.6
61–62	1.0
63–65	0.4
66–68	0.4
69–71	0.4
72–78	0.1
79–100	0.0

Table 5 (100% of the national line): Errors in poverty likelihoods for a participant's household (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
0–25	+5.5	3.9	4.5	5.9
26–31	–0.3	3.6	4.3	5.8
32–35	–6.4	5.1	5.5	6.2
36–38	–7.8	5.6	6.0	6.7
39–40	–3.2	3.7	4.4	5.7
41–42	+1.4	3.0	3.7	4.7
43–44	+1.7	2.5	3.0	3.8
45–46	+4.6	1.8	2.1	2.7
47–48	–2.0	2.3	2.7	3.5
49–50	+4.0	1.3	1.6	2.1
51–52	+2.4	0.8	1.0	1.2
53–54	–1.1	1.4	1.7	2.2
55–56	+0.9	0.9	1.1	1.4
57–58	+0.6	0.5	0.6	0.8
59–60	–0.3	0.9	1.1	1.5
61–62	–2.7	2.1	2.3	2.8
63–65	0.0	0.2	0.2	0.3
66–68	+0.3	0.0	0.0	0.0
69–71	–2.4	2.0	2.2	2.6
72–78	+0.1	0.0	0.0	0.0
79–100	0.0	0.0	0.0	0.0

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

Table 6 (100% of the national line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and 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	58.7	69.0	85.0
4	+0.5	26.2	32.9	46.2
8	+0.5	17.9	22.4	29.6
16	+0.4	12.6	15.3	22.2
32	+0.1	9.0	10.8	14.8
64	+0.2	6.4	7.6	10.3
128	0.0	4.8	5.6	7.3
256	–0.1	3.3	4.0	5.0
512	–0.1	2.2	2.7	3.6
1,024	–0.1	1.6	2.0	2.6
2,048	–0.2	1.1	1.4	1.9
4,096	–0.2	0.8	1.0	1.3
8,192	–0.2	0.6	0.7	0.9
16,384	–0.2	0.4	0.5	0.7

Scorecard applied to 1,000 bootstraps from the validation sample.

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

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
<=25	3.5	11.1	1.6	83.7	87.2
<=31	6.3	8.3	4.4	81.0	87.2
<=35	8.2	6.4	7.7	77.7	85.9
<=38	9.8	4.8	11.0	74.4	84.2
<=40	10.8	3.8	14.0	71.4	82.2
<=42	11.6	3.0	17.4	68.0	79.6
<=44	12.3	2.3	21.2	64.2	76.5
<=46	12.8	1.9	25.3	60.0	72.8
<=48	13.3	1.4	29.8	55.6	68.8
<=50	13.6	1.1	34.6	50.8	64.3
<=52	13.7	0.9	39.5	45.9	59.6
<=54	14.0	0.6	44.6	40.7	54.7
<=56	14.2	0.5	49.1	36.2	50.4
<=58	14.3	0.3	53.4	32.0	46.3
<=60	14.4	0.2	57.6	27.8	42.2
<=62	14.5	0.1	61.9	23.5	38.0
<=65	14.6	0.1	67.6	17.8	32.4
<=68	14.6	0.1	71.8	13.6	28.1
<=71	14.6	0.0	75.4	10.0	24.6
<=78	14.6	0.0	81.3	4.1	18.7
<=100	14.6	0.0	85.4	0.0	14.6

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 participants' 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
<=25	5.1	68.1	23.9	2.1:1
<=31	10.7	58.7	43.0	1.4:1
<=35	15.9	51.7	56.2	1.1:1
<=38	20.8	47.2	67.1	0.9:1
<=40	24.8	43.7	74.0	0.8:1
<=42	29.0	40.0	79.3	0.7:1
<=44	33.5	36.8	84.1	0.6:1
<=46	38.1	33.5	87.2	0.5:1
<=48	43.0	30.8	90.7	0.4:1
<=50	48.2	28.2	92.8	0.4:1
<=52	53.2	25.8	93.8	0.3:1
<=54	58.6	23.9	95.8	0.3:1
<=56	63.3	22.4	96.8	0.3:1
<=58	67.6	21.1	97.7	0.3:1
<=60	72.0	20.0	98.4	0.2:1
<=62	76.4	19.0	99.2	0.2:1
<=65	82.1	17.7	99.6	0.2:1
<=68	86.4	16.9	99.6	0.2:1
<=71	90.0	16.2	100.0	0.2:1
<=78	95.9	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
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:
0–25	99.2
26–31	97.4
32–35	94.7
36–38	93.1
39–40	91.4
41–42	89.6
43–44	89.6
45–46	85.9
47–48	75.3
49–50	75.3
51–52	73.5
53–54	67.6
55–56	60.3
57–58	51.1
59–60	44.9
61–62	41.3
63–65	34.0
66–68	27.4
69–71	19.9
72–78	12.3
79–100	3.1

Table 5 (200% of the national line): Errors in poverty likelihoods for a participant's household (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
0–25	+1.1	0.8	1.0	1.3
26–31	+2.1	1.7	2.0	2.6
32–35	–3.6	2.1	2.1	2.2
36–38	+5.1	2.8	3.3	4.5
39–40	–2.1	2.0	2.5	3.1
41–42	+13.4	3.7	4.5	6.1
43–44	–1.3	1.9	2.2	3.1
45–46	+9.3	3.2	3.8	4.6
47–48	–7.6	5.1	5.4	6.0
49–50	+2.3	3.0	3.5	4.7
51–52	–1.0	2.9	3.5	4.8
53–54	+13.2	3.3	3.9	5.2
55–56	+2.8	3.8	4.5	5.4
57–58	–9.9	6.9	7.1	7.8
59–60	+1.0	3.9	4.8	6.1
61–62	+2.0	3.8	4.5	6.0
63–65	+8.6	2.7	3.1	4.2
66–68	–0.2	3.3	4.1	5.2
69–71	+3.5	3.1	3.5	4.8
72–78	–6.8	4.7	4.9	5.3
79–100	+1.8	0.7	0.8	1.1

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

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

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.3	70.7	79.3	90.0
4	+0.7	39.3	48.0	62.1
8	+0.9	29.7	34.4	44.5
16	+1.4	21.4	26.2	32.3
32	+1.5	14.8	17.1	24.9
64	+1.6	10.8	12.6	17.9
128	+1.6	7.6	8.8	11.3
256	+1.8	5.3	6.4	8.4
512	+1.6	3.8	4.6	5.9
1,024	+1.5	2.6	3.1	4.0
2,048	+1.6	1.9	2.3	2.9
4,096	+1.6	1.4	1.6	2.0
8,192	+1.6	0.9	1.1	1.5
16,384	+1.6	0.6	0.8	1.0

Scorecard applied to 1,000 bootstraps from the validation sample.

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

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
<=25	5.0	58.9	0.1	36.0	41.0
<=31	10.4	53.6	0.3	35.8	46.1
<=35	15.4	48.5	0.5	35.6	51.0
<=38	19.9	44.0	0.9	35.2	55.1
<=40	23.6	40.4	1.2	34.9	58.4
<=42	27.1	36.8	1.8	34.2	61.4
<=44	31.1	32.8	2.4	33.7	64.8
<=46	34.7	29.2	3.3	32.7	67.5
<=48	38.9	25.0	4.1	32.0	70.9
<=50	42.7	21.3	5.5	30.6	73.2
<=52	46.3	17.7	6.9	29.2	75.4
<=54	49.6	14.3	9.1	27.0	76.6
<=56	52.4	11.5	10.9	25.2	77.5
<=58	55.0	8.9	12.6	23.4	78.4
<=60	57.0	6.9	15.0	21.1	78.2
<=62	59.0	5.0	17.4	18.7	77.7
<=65	60.9	3.1	21.3	14.8	75.7
<=68	62.1	1.8	24.3	11.8	73.9
<=71	62.8	1.1	27.2	8.8	71.6
<=78	63.8	0.1	32.1	4.0	67.9
<=100	63.9	0.0	36.1	0.0	63.9

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 participants' 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
<=25	5.1	97.6	7.8	41.5:1
<=31	10.7	96.9	16.2	31.3:1
<=35	15.9	96.7	24.1	29.7:1
<=38	20.8	95.7	31.1	22.2:1
<=40	24.8	95.1	36.9	19.4:1
<=42	29.0	93.7	42.5	14.8:1
<=44	33.5	93.0	48.7	13.2:1
<=46	38.1	91.2	54.4	10.4:1
<=48	43.0	90.4	60.9	9.4:1
<=50	48.2	88.6	66.7	7.7:1
<=52	53.2	87.0	72.4	6.7:1
<=54	58.6	84.5	77.6	5.5:1
<=56	63.3	82.7	81.9	4.8:1
<=58	67.6	81.3	86.0	4.3:1
<=60	72.0	79.2	89.2	3.8:1
<=62	76.4	77.2	92.3	3.4:1
<=65	82.1	74.1	95.2	2.9:1
<=68	86.4	71.9	97.2	2.6:1
<=71	90.0	69.7	98.2	2.3:1
<=78	95.9	66.6	99.9	2.0:1
<=100	100.0	63.9	100.0	1.8:1

Scorecard applied to the validation sample.

Tables for
the $1.90/day 2011 PPP Poverty Line

Table 3 ($1.90/day 2011 PPP 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:
0–25	16.6
26–31	4.9
32–35	2.1
36–38	1.0
39–40	0.8
41–42	0.5
43–44	0.2
45–46	0.2
47–48	0.1
49–50	0.0
51–52	0.0
53–54	0.0
55–56	0.0
57–58	0.0
59–60	0.0
61–62	0.0
63–65	0.0
66–68	0.0
69–71	0.0
72–78	0.0
79–100	0.0

Table 5 ($1.90/day 2011 PPP line): Errors in poverty likelihoods for a participant's household (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
0–25	+4.0	2.8	3.2	4.1
26–31	–2.9	2.6	2.9	3.4
32–35	+0.8	0.6	0.7	1.0
36–38	–0.3	0.8	0.9	1.1
39–40	+0.8	0.0	0.0	0.0
41–42	+0.5	0.0	0.1	0.1
43–44	0.0	0.2	0.2	0.3
45–46	+0.1	0.0	0.0	0.0
47–48	+0.1	0.0	0.0	0.0
49–50	0.0	0.0	0.0	0.0
51–52	0.0	0.0	0.0	0.0
53–54	0.0	0.0	0.0	0.0
55–56	0.0	0.0	0.0	0.0
57–58	0.0	0.0	0.0	0.0
59–60	0.0	0.0	0.0	0.0
61–62	0.0	0.0	0.0	0.0
63–65	0.0	0.0	0.0	0.0
66–68	0.0	0.0	0.0	0.0
69–71	0.0	0.0	0.0	0.0
72–78	0.0	0.0	0.0	0.0
79–100	0.0	0.0	0.0	0.0

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

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

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.3	2.4	8.3	52.9
4	–0.1	2.3	8.7	28.8
8	0.0	3.5	6.0	16.8
16	0.0	3.0	6.4	10.1
32	+0.1	2.5	3.7	5.8
64	0.0	2.1	2.5	3.3
128	0.0	1.4	1.7	2.3
256	+0.1	1.0	1.2	1.4
512	+0.1	0.7	0.9	1.1
1,024	+0.1	0.5	0.6	0.8
2,048	+0.1	0.4	0.4	0.5
4,096	+0.1	0.3	0.3	0.4
8,192	+0.1	0.2	0.2	0.3
16,384	+0.1	0.1	0.2	0.2

Scorecard applied to 1,000 bootstraps from the validation sample.

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

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
<=25	0.8	0.6	4.4	94.3	95.1
<=31	1.1	0.2	9.6	89.1	90.2
<=35	1.2	0.1	14.7	84.0	85.2
<=38	1.3	0.0	19.5	79.2	80.4
<=40	1.3	0.0	23.5	75.2	76.5
<=42	1.3	0.0	27.7	71.0	72.3
<=44	1.3	0.0	32.2	66.5	67.8
<=46	1.3	0.0	36.8	61.9	63.2
<=48	1.3	0.0	41.7	56.9	58.3
<=50	1.3	0.0	46.9	51.8	53.1
<=52	1.3	0.0	51.9	46.8	48.1
<=54	1.3	0.0	57.3	41.3	42.7
<=56	1.3	0.0	62.0	36.7	38.0
<=58	1.3	0.0	66.3	32.4	33.7
<=60	1.3	0.0	70.7	28.0	29.3
<=62	1.3	0.0	75.0	23.6	25.0
<=65	1.3	0.0	80.8	17.9	19.2
<=68	1.3	0.0	85.1	13.6	14.9
<=71	1.3	0.0	88.7	10.0	11.3
<=78	1.3	0.0	94.6	4.1	5.4
<=100	1.3	0.0	98.7	0.0	1.3

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

Table 10 ($1.90/day 2011 PPP line): Share of all participants' 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
<=25	5.1	14.7	57.4	0.2:1
<=31	10.7	10.3	84.1	0.1:1
<=35	15.9	7.5	91.4	0.1:1
<=38	20.8	6.1	96.5	0.1:1
<=40	24.8	5.1	97.0	0.1:1
<=42	29.0	4.4	97.4	0.0:1
<=44	33.5	3.9	99.0	0.0:1
<=46	38.1	3.4	99.5	0.0:1
<=48	43.0	3.0	99.5	0.0:1
<=50	48.2	2.7	99.6	0.0:1
<=52	53.2	2.5	99.6	0.0:1
<=54	58.6	2.2	99.6	0.0:1
<=56	63.3	2.1	99.6	0.0:1
<=58	67.6	1.9	100.0	0.0:1
<=60	72.0	1.8	100.0	0.0:1
<=62	76.4	1.7	100.0	0.0:1
<=65	82.1	1.6	100.0	0.0:1
<=68	86.4	1.5	100.0	0.0:1
<=71	90.0	1.5	100.0	0.0:1
<=78	95.9	1.4	100.0	0.0:1
<=100	100.0	1.3	100.0	0.0:1

Scorecard applied to the validation sample.

Tables for
$3.20/day 2011 PPP Poverty Line

Table 3 ($3.20/day 2011 PPP 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:
0–25	69.9
26–31	48.6
32–35	32.9
36–38	24.4
39–40	20.8
41–42	17.2
43–44	12.0
45–46	9.9
47–48	7.4
49–50	7.4
51–52	3.8
53–54	3.6
55–56	2.5
57–58	1.7
59–60	1.4
61–62	0.9
63–65	0.3
66–68	0.3
69–71	0.3
72–78	0.1
79–100	0.0

Table 5 ($3.20/day 2011 PPP line): Errors in poverty likelihoods for a participant's household (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
0–25	+11.5	4.0	5.0	6.9
26–31	+1.5	3.7	4.2	5.6
32–35	–6.1	5.1	5.4	6.4
36–38	–10.0	6.8	7.1	7.8
39–40	–5.4	4.5	5.0	5.7
41–42	+4.8	2.5	3.0	3.9
43–44	+3.3	1.7	2.1	3.0
45–46	+3.4	1.8	2.0	2.6
47–48	–2.2	2.3	2.7	3.5
49–50	+3.0	1.3	1.6	2.1
51–52	+2.1	0.8	1.0	1.2
53–54	–1.2	1.4	1.7	2.2
55–56	+0.7	0.9	1.1	1.4
57–58	+0.7	0.5	0.6	0.8
59–60	–0.3	0.9	1.0	1.4
61–62	–2.7	2.2	2.3	2.8
63–65	0.0	0.2	0.2	0.3
66–68	+0.3	0.0	0.0	0.0
69–71	–2.4	2.0	2.2	2.6
72–78	+0.1	0.0	0.0	0.0
79–100	0.0	0.0	0.0	0.0

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

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

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.3	62.1	68.3	84.1
4	+0.5	25.5	32.5	45.9
8	+0.4	17.7	21.7	28.3
16	+0.3	12.6	15.7	21.5
32	+0.1	9.0	10.6	13.9
64	+0.2	6.3	7.4	10.4
128	0.0	4.7	5.5	7.6
256	0.0	3.3	3.9	5.2
512	0.0	2.2	2.6	3.6
1,024	0.0	1.6	1.9	2.7
2,048	0.0	1.1	1.4	1.9
4,096	0.0	0.8	1.0	1.3
8,192	–0.1	0.6	0.7	0.9
16,384	0.0	0.4	0.5	0.7

Scorecard applied to 1,000 bootstraps from the validation sample.

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

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
<=25	3.3	9.9	1.8	84.9	88.2
<=31	5.9	7.3	4.8	82.0	87.9
<=35	7.6	5.6	8.3	78.5	86.1
<=38	9.0	4.2	11.8	75.0	84.1
<=40	10.0	3.2	14.8	72.0	82.0
<=42	10.6	2.6	18.4	68.4	79.0
<=44	11.2	2.0	22.2	64.5	75.7
<=46	11.6	1.6	26.5	60.3	71.9
<=48	12.0	1.2	31.0	55.8	67.8
<=50	12.3	0.9	35.8	50.9	63.3
<=52	12.4	0.8	40.7	46.1	58.5
<=54	12.7	0.5	45.9	40.8	53.6
<=56	12.8	0.4	50.5	36.3	49.1
<=58	12.9	0.3	54.7	32.1	45.0
<=60	13.0	0.2	59.0	27.8	40.8
<=62	13.1	0.1	63.2	23.5	36.6
<=65	13.2	0.1	69.0	17.8	31.0
<=68	13.2	0.1	73.2	13.6	26.7
<=71	13.2	0.0	76.8	10.0	23.2
<=78	13.2	0.0	82.7	4.1	17.3
<=100	13.2	0.0	86.8	0.0	13.2

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

Table 10 ($3.20/day 2011 PPP line): Share of all participants' 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
<=25	5.1	64.0	24.8	1.8:1
<=31	10.7	55.0	44.5	1.2:1
<=35	15.9	47.9	57.6	0.9:1
<=38	20.8	43.5	68.3	0.8:1
<=40	24.8	40.3	75.5	0.7:1
<=42	29.0	36.6	80.3	0.6:1
<=44	33.5	33.5	84.8	0.5:1
<=46	38.1	30.5	87.8	0.4:1
<=48	43.0	28.0	91.1	0.4:1
<=50	48.2	25.6	93.3	0.3:1
<=52	53.2	23.4	94.2	0.3:1
<=54	58.6	21.7	96.2	0.3:1
<=56	63.3	20.3	97.0	0.3:1
<=58	67.6	19.1	97.8	0.2:1
<=60	72.0	18.1	98.4	0.2:1
<=62	76.4	17.2	99.2	0.2:1
<=65	82.1	16.0	99.6	0.2:1
<=68	86.4	15.2	99.6	0.2:1
<=71	90.0	14.7	100.0	0.2:1
<=78	95.9	13.8	100.0	0.2:1
<=100	100.0	13.2	100.0	0.2:1

Scorecard applied to the validation sample.

Tables for
$5.50/day 2011 PPP Poverty Line

Table 3 ($5.50/day 2011 PPP 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:
0–25	96.9
26–31	92.1
32–35	88.1
36–38	83.4
39–40	80.9
41–42	79.0
43–44	72.4
45–46	68.2
47–48	56.3
49–50	56.3
51–52	56.0
53–54	44.2
55–56	36.0
57–58	29.9
59–60	24.0
61–62	24.0
63–65	15.7
66–68	11.5
69–71	7.8
72–78	5.1
79–100	0.6

Table 5 ($5.50/day 2011 PPP line): Errors in poverty likelihoods for a participant's household (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
0–25	–0.2	0.9	1.1	1.4
26–31	–1.3	1.7	2.0	2.6
32–35	–0.2	2.1	2.6	3.3
36–38	+7.6	3.6	4.2	5.7
39–40	–1.2	3.3	3.9	5.1
41–42	+9.2	3.8	4.8	6.2
43–44	–1.7	3.4	4.1	5.3
45–46	+2.4	3.5	4.2	5.4
47–48	+0.1	3.6	4.4	5.5
49–50	+8.2	3.5	4.4	5.7
51–52	–0.9	3.5	4.1	5.7
53–54	+9.6	3.2	3.7	4.6
55–56	–1.9	3.7	4.4	6.0
57–58	–11.0	7.5	7.8	8.9
59–60	+0.7	3.0	3.6	4.7
61–62	–2.6	3.4	4.1	5.4
63–65	+4.3	1.8	2.2	3.0
66–68	+3.7	2.0	2.3	3.0
69–71	–1.8	2.6	3.0	4.1
72–78	+1.0	1.2	1.4	1.8
79–100	–0.5	0.7	0.8	1.2

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

Table 6 ($5.50/day 2011 PPP line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and 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	71.3	79.1	92.8
4	+1.2	39.6	47.5	59.2
8	+1.3	29.7	34.6	45.9
16	+1.3	20.3	24.0	33.0
32	+1.1	14.0	16.7	23.3
64	+1.3	10.1	11.7	16.2
128	+1.4	7.3	8.4	10.6
256	+1.4	4.9	5.8	7.9
512	+1.3	3.6	4.1	5.3
1,024	+1.3	2.6	3.1	4.2
2,048	+1.3	1.8	2.3	2.9
4,096	+1.3	1.3	1.5	2.1
8,192	+1.3	0.9	1.0	1.4
16,384	+1.3	0.6	0.8	1.0

Scorecard applied to 1,000 bootstraps from the validation sample.

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

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
<=25	4.9	44.9	0.2	50.0	54.9
<=31	10.0	39.8	0.7	49.5	59.5
<=35	14.5	35.2	1.4	48.9	63.4
<=38	18.5	31.3	2.3	47.9	66.4
<=40	21.7	28.0	3.1	47.2	68.9
<=42	24.8	24.9	4.1	46.1	70.9
<=44	28.1	21.6	5.3	44.9	73.0
<=46	31.1	18.7	7.0	43.3	74.4
<=48	34.1	15.7	9.0	41.3	75.4
<=50	36.8	13.0	11.4	38.9	75.6
<=52	39.5	10.2	13.6	36.6	76.1
<=54	41.7	8.1	17.0	33.3	75.0
<=56	43.5	6.3	19.8	30.5	74.0
<=58	45.2	4.6	22.4	27.8	73.0
<=60	46.4	3.3	25.6	24.7	71.1
<=62	47.6	2.2	28.8	21.5	69.1
<=65	48.6	1.2	33.6	16.7	65.2
<=68	49.1	0.7	37.3	12.9	62.0
<=71	49.4	0.3	40.6	9.6	59.1
<=78	49.7	0.0	46.2	4.1	53.8
<=100	49.8	0.0	50.2	0.0	49.8

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

Table 10 ($5.50/day 2011 PPP line): Share of all participants' 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
<=25	5.1	95.8	9.9	22.9:1
<=31	10.7	93.5	20.1	14.4:1
<=35	15.9	91.3	29.2	10.5:1
<=38	20.8	89.0	37.2	8.1:1
<=40	24.8	87.7	43.6	7.1:1
<=42	29.0	85.7	49.9	6.0:1
<=44	33.5	84.1	56.5	5.3:1
<=46	38.1	81.7	62.5	4.5:1
<=48	43.0	79.2	68.5	3.8:1
<=50	48.2	76.4	73.9	3.2:1
<=52	53.2	74.4	79.5	2.9:1
<=54	58.6	71.1	83.8	2.5:1
<=56	63.3	68.7	87.4	2.2:1
<=58	67.6	66.8	90.8	2.0:1
<=60	72.0	64.5	93.3	1.8:1
<=62	76.4	62.3	95.6	1.7:1
<=65	82.1	59.1	97.6	1.4:1
<=68	86.4	56.8	98.6	1.3:1
<=71	90.0	54.9	99.3	1.2:1
<=78	95.9	51.8	99.9	1.1:1
<=100	100.0	49.8	100.0	1.0:1

Scorecard applied to the validation sample.

Tables for
$21.70/day 2011 PPP Poverty Line

Table 3 ($21.70/day 2011 PPP 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:
0–25	100.0
26–31	100.0
32–35	100.0
36–38	100.0
39–40	99.9
41–42	99.9
43–44	99.9
45–46	99.9
47–48	99.9
49–50	99.9
51–52	99.9
53–54	99.9
55–56	99.9
57–58	99.8
59–60	99.7
61–62	98.8
63–65	98.8
66–68	98.8
69–71	97.5
72–78	95.3
79–100	88.2

Table 5 ($21.70/day 2011 PPP line): Errors in poverty likelihoods for a participant's household (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
0–25	0.0	0.0	0.0	0.0
26–31	0.0	0.0	0.0	0.0
32–35	0.0	0.0	0.0	0.0
36–38	0.0	0.0	0.0	0.0
39–40	–0.1	0.0	0.0	0.1
41–42	–0.1	0.0	0.0	0.0
43–44	–0.1	0.0	0.0	0.0
45–46	–0.1	0.0	0.0	0.0
47–48	–0.1	0.0	0.0	0.0
49–50	–0.1	0.0	0.0	0.0
51–52	–0.1	0.1	0.1	0.1
53–54	–0.1	0.1	0.1	0.1
55–56	–0.1	0.1	0.1	0.1
57–58	–0.2	0.1	0.1	0.1
59–60	–0.2	0.2	0.2	0.2
61–62	–1.1	0.6	0.6	0.6
63–65	–0.7	0.5	0.5	0.6
66–68	+1.4	1.2	1.4	2.0
69–71	+0.6	1.2	1.4	1.8
72–78	+1.6	1.5	1.8	2.3
79–100	–1.8	2.0	2.3	3.0

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

Table 6 ($21.70/day 2011 PPP line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and 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	2.3	5.9	55.0
4	+0.1	2.7	16.3	28.8
8	–0.1	7.1	10.8	16.0
16	–0.1	5.3	6.7	10.2
32	0.0	3.5	4.2	6.1
64	–0.1	2.3	2.9	4.2
128	–0.1	1.8	2.2	3.0
256	0.0	1.3	1.6	2.2
512	0.0	0.9	1.1	1.5
1,024	0.0	0.7	0.8	1.0
2,048	0.0	0.5	0.6	0.8
4,096	0.0	0.3	0.4	0.5
8,192	0.0	0.2	0.3	0.4
16,384	0.0	0.2	0.2	0.3

Scorecard applied to 1,000 bootstraps from the validation sample.

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

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
<=25	5.1	93.8	0.0	1.1	6.2
<=31	10.7	88.2	0.0	1.1	11.8
<=35	15.9	83.0	0.0	1.1	17.0
<=38	20.8	78.1	0.0	1.1	21.9
<=40	24.8	74.1	0.0	1.1	25.9
<=42	29.0	69.9	0.0	1.1	30.1
<=44	33.5	65.4	0.0	1.1	34.6
<=46	38.1	60.8	0.0	1.1	39.2
<=48	43.0	55.8	0.0	1.1	44.1
<=50	48.1	50.7	0.0	1.1	49.2
<=52	53.1	45.7	0.0	1.1	54.2
<=54	58.6	40.3	0.0	1.1	59.7
<=56	63.3	35.6	0.0	1.1	64.4
<=58	67.6	31.3	0.0	1.1	68.7
<=60	71.9	27.0	0.1	1.1	73.0
<=62	76.3	22.6	0.1	1.0	77.3
<=65	82.0	16.9	0.1	1.0	83.0
<=68	86.2	12.7	0.2	0.9	87.1
<=71	89.7	9.2	0.4	0.8	90.4
<=78	95.2	3.7	0.7	0.4	95.7
<=100	98.9	0.0	1.1	0.0	98.9

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

Table 10 ($21.70/day 2011 PPP line): Share of all participants' 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
<=25	5.1	100.0	5.2	Only poor targeted
<=31	10.7	100.0	10.8	Only poor targeted
<=35	15.9	100.0	16.1	Only poor targeted
<=38	20.8	100.0	21.0	Only poor targeted
<=40	24.8	100.0	25.0	5,224.4:1
<=42	29.0	100.0	29.3	6,112.8:1
<=44	33.5	100.0	33.8	7,057.2:1
<=46	38.1	100.0	38.5	4,116.5:1
<=48	43.0	100.0	43.5	3,604.3:1
<=50	48.2	100.0	48.7	2,936.7:1
<=52	53.2	100.0	53.7	3,242.0:1
<=54	58.6	100.0	59.3	2,882.9:1
<=56	63.3	100.0	64.0	3,111.3:1
<=58	67.6	100.0	68.4	2,048.9:1
<=60	72.0	99.9	72.7	1,176.8:1
<=62	76.4	99.9	77.1	905.1:1
<=65	82.1	99.8	82.9	642.2:1
<=68	86.4	99.7	87.1	388.8:1
<=71	90.0	99.6	90.7	248.0:1
<=78	95.9	99.3	96.3	140.6:1
<=100	100.0	98.9	100.0	88.6:1

Scorecard applied to the validation sample.

Tables for
the First-Decile (10^{th}-Percentile) Poverty Line

Table 3 (First-decile (10th-percentile) 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:
0–25	51.3
26–31	29.5
32–35	16.5
36–38	10.8
39–40	9.6
41–42	6.9
43–44	4.6
45–46	3.0
47–48	1.8
49–50	1.1
51–52	1.1
53–54	1.1
55–56	0.5
57–58	0.5
59–60	0.5
61–62	0.3
63–65	0.0
66–68	0.0
69–71	0.0
72–78	0.0
79–100	0.0

Table 5 (First-decile (10th-percentile) line): Errors in poverty likelihoods for a participant's household (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
0–25	+9.7	4.1	5.0	6.3
26–31	–6.8	5.1	5.6	6.2
32–35	–0.6	3.0	3.6	4.8
36–38	+0.1	2.1	2.4	3.0
39–40	+2.8	1.9	2.4	3.1
41–42	+5.8	0.5	0.6	0.8
43–44	+0.9	1.1	1.4	1.9
45–46	+2.2	0.4	0.4	0.5
47–48	+0.1	0.8	0.9	1.2
49–50	–1.3	1.2	1.3	1.6
51–52	+0.9	0.2	0.2	0.3
53–54	–0.1	0.6	0.8	1.0
55–56	–1.0	1.0	1.0	1.4
57–58	+0.5	0.0	0.0	0.1
59–60	–0.9	0.9	1.0	1.4
61–62	+0.3	0.0	0.0	0.0
63–65	–0.2	0.2	0.2	0.3
66–68	0.0	0.0	0.0	0.0
69–71	–2.8	2.2	2.4	2.8
72–78	0.0	0.0	0.0	0.0
79–100	0.0	0.0	0.0	0.0

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

Table 6 (First-decile (10th-percentile) line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and 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	39.1	64.1	73.7
4	+0.4	18.2	25.3	37.9
8	+0.2	13.0	16.5	25.6
16	+0.1	9.2	11.4	16.0
32	+0.1	6.3	7.8	10.8
64	+0.2	4.8	5.6	7.0
128	+0.2	3.3	4.0	5.1
256	+0.2	2.3	2.7	3.5
512	+0.2	1.6	1.9	2.6
1,024	+0.2	1.1	1.4	1.8
2,048	+0.2	0.8	1.0	1.3
4,096	+0.2	0.6	0.7	1.0
8,192	+0.2	0.4	0.5	0.6
16,384	+0.2	0.3	0.3	0.4

Scorecard applied to 1,000 bootstraps from the validation sample.

Table 9 (First-decile (10th-percentile) line): Percentages of participants' households by cut-off score and targeting classification, along with the hit rate

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
<=25	2.3	4.6	2.8	90.3	92.6
<=31	4.0	2.9	6.7	86.4	90.4
<=35	4.9	2.0	11.0	82.1	86.9
<=38	5.5	1.4	15.3	77.8	83.3
<=40	5.8	1.1	18.9	74.2	80.0
<=42	6.0	0.9	23.0	70.1	76.0
<=44	6.2	0.7	27.2	65.9	72.1
<=46	6.3	0.6	31.8	61.4	67.7
<=48	6.4	0.4	36.6	56.5	63.0
<=50	6.5	0.3	41.6	51.5	58.0
<=52	6.6	0.3	46.6	46.5	53.1
<=54	6.7	0.2	52.0	41.1	47.8
<=56	6.7	0.2	56.6	36.5	43.3
<=58	6.7	0.2	60.9	32.2	39.0
<=60	6.8	0.1	65.2	27.9	34.7
<=62	6.8	0.1	69.6	23.6	30.3
<=65	6.8	0.1	75.3	17.8	24.7
<=68	6.8	0.1	79.6	13.6	20.4
<=71	6.9	0.0	83.1	10.0	16.9
<=78	6.9	0.0	89.0	4.1	11.0
<=100	6.9	0.0	93.1	0.0	6.9

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

Table 10 (First-decile (10th-percentile) line): Share of all participants' 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
<=25	5.1	45.3	33.7	0.8:1
<=31	10.7	37.1	57.6	0.6:1
<=35	15.9	30.5	70.5	0.4:1
<=38	20.8	26.5	79.8	0.4:1
<=40	24.8	23.6	84.7	0.3:1
<=42	29.0	20.6	86.4	0.3:1
<=44	33.5	18.6	90.2	0.2:1
<=46	38.1	16.6	91.9	0.2:1
<=48	43.0	15.0	93.6	0.2:1
<=50	48.2	13.6	95.0	0.2:1
<=52	53.2	12.4	95.5	0.1:1
<=54	58.6	11.3	96.6	0.1:1
<=56	63.3	10.6	97.5	0.1:1
<=58	67.6	10.0	97.8	0.1:1
<=60	72.0	9.4	98.6	0.1:1
<=62	76.4	8.9	98.6	0.1:1
<=65	82.1	8.3	99.2	0.1:1
<=68	86.4	7.9	99.2	0.1:1
<=71	90.0	7.7	100.0	0.1:1
<=78	95.9	7.2	100.0	0.1:1
<=100	100.0	6.9	100.0	0.1:1

Scorecard applied to the validation sample.

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

Table 3 (First-quintile (20th-percentile) 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:
0–25	72.1
26–31	51.1
32–35	36.5
36–38	28.8
39–40	24.1
41–42	20.1
43–44	14.6
45–46	11.8
47–48	8.6
49–50	8.6
51–52	4.4
53–54	3.9
55–56	2.9
57–58	1.8
59–60	1.6
61–62	1.0
63–65	0.4
66–68	0.4
69–71	0.4
72–78	0.1
79–100	0.0

Table 5 (First-quintile (20th-percentile) line): Errors in poverty likelihoods for a participant's household (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
0–25	+5.7	3.9	4.5	5.9
26–31	–0.4	3.6	4.3	5.5
32–35	–6.8	5.3	5.6	6.4
36–38	–7.9	5.8	6.1	6.7
39–40	–3.2	3.7	4.3	5.7
41–42	+2.5	3.0	3.7	4.7
43–44	+0.6	2.6	3.1	4.1
45–46	+4.8	1.8	2.1	2.7
47–48	–1.9	2.3	2.7	3.5
49–50	+4.1	1.3	1.6	2.1
51–52	+2.6	0.8	1.0	1.2
53–54	–1.0	1.4	1.7	2.2
55–56	+0.9	0.9	1.1	1.4
57–58	+0.6	0.5	0.6	0.8
59–60	–0.3	0.9	1.1	1.5
61–62	–2.8	2.2	2.4	2.9
63–65	0.0	0.2	0.2	0.3
66–68	+0.3	0.0	0.0	0.0
69–71	–2.4	2.0	2.2	2.6
72–78	+0.1	0.0	0.0	0.0
79–100	0.0	0.0	0.0	0.0

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

Table 6 (First-quintile (20th-percentile) line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	–0.3	55.0	69.0	85.1
4	+0.5	26.6	33.0	46.3
8	+0.5	17.9	22.4	29.6
16	+0.4	12.7	15.5	22.2
32	+0.1	9.0	10.6	14.8
64	+0.2	6.4	7.6	10.5
128	0.0	4.7	5.7	7.3
256	–0.1	3.3	3.9	5.0
512	–0.1	2.2	2.7	3.6
1,024	–0.2	1.7	2.0	2.6
2,048	–0.2	1.2	1.4	1.9
4,096	–0.2	0.8	1.0	1.3
8,192	–0.2	0.6	0.7	0.9
16,384	–0.2	0.4	0.5	0.7

Scorecard applied to 1,000 bootstraps from the validation sample.

Table 9 (First-quintile (20th-percentile) line): Percentages of participants' households by cut-off score and targeting classification, along with the hit rate

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
<=25	3.5	11.3	1.6	83.6	87.1
<=31	6.3	8.5	4.4	80.8	87.1
<=35	8.3	6.5	7.6	77.6	85.9
<=38	9.9	4.9	10.9	74.3	84.2
<=40	10.9	3.9	13.9	71.4	82.3
<=42	11.7	3.1	17.3	67.9	79.6
<=44	12.4	2.3	21.0	64.2	76.7
<=46	12.9	1.9	25.2	60.0	72.9
<=48	13.4	1.4	29.7	55.6	69.0
<=50	13.7	1.1	34.5	50.8	64.5
<=52	13.9	0.9	39.3	45.9	59.8
<=54	14.1	0.6	44.5	40.7	54.9
<=56	14.3	0.5	49.0	36.2	50.5
<=58	14.4	0.4	53.2	32.0	46.4
<=60	14.5	0.2	57.5	27.8	42.3
<=62	14.7	0.1	61.7	23.5	38.2
<=65	14.7	0.1	67.4	17.8	32.5
<=68	14.7	0.1	71.7	13.6	28.3
<=71	14.8	0.0	75.2	10.0	24.8
<=78	14.8	0.0	81.1	4.1	18.9
<=100	14.8	0.0	85.2	0.0	14.8

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

Table 10 (First-quintile (20th-percentile) line): Share of all participants' 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
<=25	5.1	68.1	23.6	2.1:1
<=31	10.7	59.0	42.7	1.4:1
<=35	15.9	52.1	56.1	1.1:1
<=38	20.8	47.6	66.9	0.9:1
<=40	24.8	44.0	73.8	0.8:1
<=42	29.0	40.4	79.1	0.7:1
<=44	33.5	37.2	84.2	0.6:1
<=46	38.1	33.9	87.3	0.5:1
<=48	43.0	31.1	90.7	0.5:1
<=50	48.2	28.5	92.8	0.4:1
<=52	53.2	26.1	93.7	0.4:1
<=54	58.6	24.1	95.7	0.3:1
<=56	63.3	22.6	96.7	0.3:1
<=58	67.6	21.3	97.6	0.3:1
<=60	72.0	20.2	98.4	0.3:1
<=62	76.4	19.2	99.2	0.2:1
<=65	82.1	17.9	99.6	0.2:1
<=68	86.4	17.0	99.6	0.2:1
<=71	90.0	16.4	100.0	0.2:1
<=78	95.9	15.4	100.0	0.2:1
<=100	100.0	14.8	100.0	0.2:1

Scorecard applied to the validation sample.

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

Table 3 (Second-quintile (40th-percentile) 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:
0–25	89.9
26–31	79.9
32–35	67.9
36–38	60.6
39–40	55.0
41–42	54.6
43–44	45.8
45–46	42.7
47–48	31.1
49–50	28.3
51–52	20.9
53–54	15.6
55–56	11.0
57–58	10.2
59–60	8.9
61–62	8.1
63–65	3.6
66–68	2.5
69–71	1.6
72–78	1.0
79–100	0.0

Table 5 (Second-quintile (40th-percentile) line): Errors in poverty likelihoods for a participant's household (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
0–25	+4.5	2.9	3.5	4.7
26–31	+0.7	3.1	3.7	4.8
32–35	–4.9	4.2	4.4	5.6
36–38	–1.8	3.8	4.5	6.5
39–40	+3.9	4.3	5.2	6.4
41–42	+6.2	4.0	4.7	6.2
43–44	+6.6	3.9	4.4	6.0
45–46	+9.1	3.6	4.3	5.5
47–48	+0.6	3.4	4.0	5.2
49–50	–0.1	3.3	3.9	4.9
51–52	–8.5	6.0	6.3	6.8
53–54	+5.9	1.7	2.0	2.6
55–56	+3.5	1.7	2.0	2.8
57–58	–2.3	2.8	3.4	4.3
59–60	+2.0	1.7	2.0	2.5
61–62	–1.2	2.3	2.7	3.4
63–65	+0.4	0.9	1.0	1.3
66–68	+1.8	0.4	0.4	0.5
69–71	–1.4	1.5	1.8	2.6
72–78	+0.9	0.1	0.1	0.2
79–100	0.0	0.0	0.0	0.0

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

Table 6 (Second-quintile (40th-percentile) line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+0.3	63.4	76.1	93.2
4	+2.2	34.6	42.7	56.4
8	+1.7	24.4	29.9	40.4
16	+1.2	17.8	21.6	28.8
32	+1.0	12.6	15.5	21.3
64	+1.3	8.9	10.6	15.0
128	+1.3	6.4	7.6	10.2
256	+1.1	4.4	5.1	6.9
512	+1.1	2.9	3.6	4.8
1,024	+1.1	2.2	2.6	3.5
2,048	+1.1	1.6	2.0	2.7
4,096	+1.1	1.1	1.4	1.7
8,192	+1.1	0.8	1.0	1.3
16,384	+1.1	0.6	0.7	0.9

Scorecard applied to 1,000 bootstraps from the validation sample.

Table 9 (Second-quintile (40th-percentile) line): Percentages of participants' households by cut-off score and targeting classification, along with the hit rate

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
<=25	4.4	27.0	0.7	67.9	72.3
<=31	8.8	22.6	1.9	66.7	75.5
<=35	12.5	18.9	3.4	65.2	77.7
<=38	15.7	15.8	5.1	63.4	79.1
<=40	17.8	13.6	6.9	61.6	79.5
<=42	19.9	11.5	9.0	59.5	79.5
<=44	22.0	9.5	11.5	57.1	79.1
<=46	23.6	7.8	14.5	54.1	77.7
<=48	25.3	6.2	17.8	50.8	76.1
<=50	26.8	4.6	21.3	47.2	74.0
<=52	28.1	3.4	25.1	43.5	71.6
<=54	28.9	2.5	29.7	38.8	67.7
<=56	29.5	2.0	33.8	34.7	64.2
<=58	30.1	1.4	37.5	31.0	61.1
<=60	30.5	0.9	41.5	27.1	57.6
<=62	30.9	0.5	45.4	23.1	54.0
<=65	31.2	0.2	50.9	17.7	48.9
<=68	31.3	0.1	55.1	13.5	44.8
<=71	31.4	0.0	58.6	9.9	41.4
<=78	31.4	0.0	64.4	4.1	35.6
<=100	31.4	0.0	68.6	0.0	31.4

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

Table 10 (Second-quintile (40th-percentile) line): Share of all participants' 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
<=25	5.1	86.5	14.1	6.4:1
<=31	10.7	82.5	28.1	4.7:1
<=35	15.9	78.8	39.8	3.7:1
<=38	20.8	75.3	49.8	3.0:1
<=40	24.8	72.0	56.7	2.6:1
<=42	29.0	68.8	63.4	2.2:1
<=44	33.5	65.7	69.9	1.9:1
<=46	38.1	62.0	75.1	1.6:1
<=48	43.0	58.7	80.4	1.4:1
<=50	48.2	55.7	85.3	1.3:1
<=52	53.2	52.8	89.3	1.1:1
<=54	58.6	49.3	91.9	1.0:1
<=56	63.3	46.6	93.7	0.9:1
<=58	67.6	44.5	95.7	0.8:1
<=60	72.0	42.4	97.1	0.7:1
<=62	76.4	40.5	98.3	0.7:1
<=65	82.1	38.0	99.3	0.6:1
<=68	86.4	36.3	99.6	0.6:1
<=71	90.0	34.9	99.9	0.5:1
<=78	95.9	32.8	100.0	0.5:1
<=100	100.0	31.4	100.0	0.5:1

Scorecard applied to the validation sample.

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

Table 3 (Median (50th-percentile) 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:
0–25	94.1
26–31	86.9
32–35	78.8
36–38	73.2
39–40	71.1
41–42	69.7
43–44	59.2
45–46	54.7
47–48	44.0
49–50	40.3
51–52	40.2
53–54	27.8
55–56	21.8
57–58	18.5
59–60	15.4
61–62	15.4
63–65	9.0
66–68	6.2
69–71	3.6
72–78	2.4
79–100	0.2

Table 5 (Median (50th-percentile) line): Errors in poverty likelihoods for a participant's household (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
0–25	–1.5	1.3	1.4	1.7
26–31	–4.9	3.3	3.5	3.9
32–35	–5.9	4.2	4.4	4.7
36–38	+4.7	3.7	4.4	6.0
39–40	–1.9	3.6	4.3	5.8
41–42	+8.1	4.0	4.9	6.3
43–44	+6.1	3.9	4.6	6.2
45–46	+9.4	3.6	4.2	5.6
47–48	–0.9	3.5	4.2	5.5
49–50	+1.7	3.4	4.0	5.3
51–52	–6.0	4.8	5.2	5.8
53–54	+12.3	2.2	2.6	3.4
55–56	–2.0	3.3	3.9	5.3
57–58	–8.6	6.2	6.5	7.5
59–60	+1.7	2.7	3.1	4.1
61–62	+3.8	2.3	2.8	3.6
63–65	+3.4	1.1	1.3	1.8
66–68	+1.3	1.6	2.0	2.5
69–71	–1.9	1.9	2.2	2.8
72–78	+1.0	0.6	0.8	1.0
79–100	+0.2	0.1	0.1	0.1

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

Table 6 (Median (50th-percentile) line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and with confidence intervals

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Error	90-percent	95-percent	99-percent
1	+2.5	71.0	77.3	89.0
4	+2.3	37.9	45.8	57.5
8	+2.1	26.6	32.6	41.1
16	+1.5	19.6	22.7	30.5
32	+1.4	14.0	16.1	20.8
64	+1.4	9.2	11.0	15.5
128	+1.4	6.7	8.0	10.1
256	+1.2	4.4	5.4	7.5
512	+1.2	3.4	4.1	5.2
1,024	+1.2	2.5	2.9	3.9
2,048	+1.2	1.7	2.1	2.7
4,096	+1.2	1.2	1.5	2.0
8,192	+1.2	0.9	1.0	1.4
16,384	+1.2	0.6	0.7	1.0

Scorecard applied to 1,000 bootstraps from the validation sample.

Table 9 (Median (50th-percentile) line): Percentages of participants' households by cut-off score and targeting classification, along with the hit rate

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
<=25	4.8	35.8	0.3	59.1	63.9
<=31	9.7	30.9	1.0	58.4	68.1
<=35	13.9	26.6	2.0	57.5	71.4
<=38	17.5	23.0	3.3	56.2	73.7
<=40	20.4	20.2	4.4	55.0	75.4
<=42	23.1	17.5	5.9	53.5	76.6
<=44	25.7	14.9	7.8	51.6	77.3
<=46	27.8	12.8	10.3	49.2	77.0
<=48	30.2	10.4	12.9	46.6	76.7
<=50	32.3	8.2	15.8	43.6	75.9
<=52	34.4	6.2	18.7	40.7	75.1
<=54	35.7	4.9	23.0	36.5	72.2
<=56	36.8	3.8	26.5	32.9	69.7
<=58	37.9	2.6	29.7	29.7	67.7
<=60	38.7	1.9	33.3	26.1	64.8
<=62	39.3	1.3	37.1	22.4	61.7
<=65	39.9	0.7	42.2	17.2	57.1
<=68	40.2	0.4	46.2	13.3	53.5
<=71	40.4	0.1	49.6	9.8	50.3
<=78	40.6	0.0	55.3	4.1	44.7
<=100	40.6	0.0	59.4	0.0	40.6

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

Table 10 (Median (50th-percentile) line): Share of all participants' 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
<=25	5.1	93.7	11.8	14.9:1
<=31	10.7	90.7	23.9	9.8:1
<=35	15.9	87.6	34.4	7.1:1
<=38	20.8	84.3	43.2	5.4:1
<=40	24.8	82.2	50.2	4.6:1
<=42	29.0	79.7	56.9	3.9:1
<=44	33.5	76.7	63.3	3.3:1
<=46	38.1	73.0	68.6	2.7:1
<=48	43.1	70.1	74.4	2.3:1
<=50	48.2	67.1	79.7	2.0:1
<=52	53.2	64.7	84.8	1.8:1
<=54	58.6	60.9	88.0	1.6:1
<=56	63.3	58.1	90.7	1.4:1
<=58	67.6	56.1	93.5	1.3:1
<=60	72.0	53.7	95.3	1.2:1
<=62	76.4	51.5	96.9	1.1:1
<=65	82.1	48.6	98.3	0.9:1
<=68	86.4	46.5	99.1	0.9:1
<=71	90.0	44.9	99.7	0.8:1
<=78	95.9	42.3	100.0	0.7:1
<=100	100.0	40.6	100.0	0.7:1

Scorecard applied to the validation sample.

Tables for
the Third-Quintile (60th-Percentile) Poverty Line

Table 3 (Third-quintile (60th-percentile) 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:
0–25	97.0
26–31	92.1
32–35	88.2
36–38	84.1
39–40	81.4
41–42	79.2
43–44	73.6
45–46	68.6
47–48	56.6
49–50	56.6
51–52	56.2
53–54	45.1
55–56	36.2
57–58	30.0
59–60	24.0
61–62	24.0
63–65	16.0
66–68	11.6
69–71	8.0
72–78	5.5
79–100	0.6

Table 5 (Third-quintile (60th-percentile) line): Errors in poverty likelihoods for a participant's household (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
0–25	–0.1	0.9	1.1	1.4
26–31	–1.3	1.7	2.0	2.6
32–35	–0.1	2.1	2.6	3.3
36–38	+4.3	3.4	4.0	5.1
39–40	–0.7	3.3	3.9	5.1
41–42	+9.5	3.8	4.8	6.2
43–44	–3.6	3.3	3.6	4.5
45–46	+2.6	3.5	4.1	5.4
47–48	–0.9	3.6	4.5	5.6
49–50	+6.3	3.5	4.3	5.7
51–52	–0.6	3.5	4.1	5.7
53–54	+10.5	3.2	3.8	4.7
55–56	–1.7	3.7	4.4	6.0
57–58	–10.9	7.4	7.7	8.9
59–60	+0.7	3.1	3.6	4.8
61–62	–2.6	3.5	4.1	5.4
63–65	+4.6	1.8	2.2	3.0
66–68	+3.8	2.0	2.3	3.0
69–71	–1.6	2.6	3.0	4.1
72–78	+1.4	1.2	1.4	1.8
79–100	–0.5	0.7	0.8	1.2

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

Table 6 (Third-quintile (60th-percentile) line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and 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	71.8	78.7	92.7
4	+1.2	39.1	47.3	59.4
8	+1.2	29.3	34.0	45.9
16	+1.2	20.2	23.8	33.1
32	+0.9	14.0	16.7	23.3
64	+1.1	10.1	11.9	16.0
128	+1.2	7.3	8.5	10.5
256	+1.2	4.8	5.8	7.6
512	+1.1	3.5	4.3	5.5
1,024	+1.1	2.6	3.1	3.9
2,048	+1.1	1.9	2.2	2.9
4,096	+1.1	1.3	1.5	2.1
8,192	+1.1	0.9	1.1	1.4
16,384	+1.1	0.7	0.7	0.9

Scorecard applied to 1,000 bootstraps from the validation sample.

Table 9 (Third-quintile (60th-percentile) line): Percentages of participants' households by cut-off score and targeting classification, along with the hit rate

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
<=25	4.9	45.1	0.2	49.8	54.7
<=31	10.0	40.0	0.7	49.3	59.3
<=35	14.5	35.5	1.4	48.6	63.1
<=38	18.6	31.5	2.2	47.7	66.3
<=40	21.8	28.3	3.0	47.0	68.8
<=42	24.9	25.1	4.1	45.9	70.8
<=44	28.2	21.8	5.2	44.8	73.0
<=46	31.2	18.8	6.9	43.1	74.4
<=48	34.3	15.8	8.8	41.2	75.5
<=50	37.0	13.0	11.1	38.8	75.9
<=52	39.8	10.2	13.4	36.6	76.4
<=54	42.0	8.1	16.7	33.3	75.2
<=56	43.8	6.3	19.5	30.4	74.2
<=58	45.5	4.6	22.2	27.8	73.2
<=60	46.7	3.4	25.3	24.7	71.3
<=62	47.9	2.2	28.5	21.5	69.3
<=65	48.8	1.2	33.3	16.7	65.5
<=68	49.4	0.7	37.0	12.9	62.3
<=71	49.7	0.3	40.3	9.6	59.3
<=78	50.0	0.0	45.9	4.1	54.1
<=100	50.0	0.0	50.0	0.0	50.0

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

Table 10 (Third-quintile (60th-percentile) line): Share of all participants' 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
<=25	5.1	95.8	9.8	22.9:1
<=31	10.7	93.5	20.0	14.4:1
<=35	15.9	91.3	29.0	10.5:1
<=38	20.8	89.3	37.1	8.3:1
<=40	24.8	87.9	43.5	7.3:1
<=42	29.0	85.9	49.8	6.1:1
<=44	33.5	84.4	56.5	5.4:1
<=46	38.1	82.0	62.4	4.6:1
<=48	43.0	79.6	68.5	3.9:1
<=50	48.2	76.9	74.0	3.3:1
<=52	53.2	74.8	79.5	3.0:1
<=54	58.6	71.5	83.9	2.5:1
<=56	63.3	69.1	87.5	2.2:1
<=58	67.6	67.2	90.9	2.1:1
<=60	72.0	64.8	93.3	1.8:1
<=62	76.4	62.7	95.6	1.7:1
<=65	82.1	59.5	97.6	1.5:1
<=68	86.4	57.1	98.6	1.3:1
<=71	90.0	55.2	99.3	1.2:1
<=78	95.9	52.1	99.9	1.1:1
<=100	100.0	50.0	100.0	1.0:1

Scorecard applied to the validation sample.

Tables for
the Fourth-Quintile (80th-Percentile) Poverty Line

Table 3 (Fourth-quintile (80th-percentile) 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:
0–25	99.7
26–31	98.6
32–35	96.2
36–38	95.7
39–40	95.5
41–42	95.2
43–44	95.2
45–46	92.1
47–48	84.3
49–50	84.3
51–52	83.8
53–54	79.5
55–56	72.2
57–58	63.5
59–60	59.8
61–62	51.6
63–65	44.8
66–68	41.4
69–71	30.4
72–78	21.8
79–100	6.2

Table 5 (Fourth-quintile (80th-percentile) line): Errors in poverty likelihoods for a participant's household (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
0–25	+0.7	0.6	0.7	1.0
26–31	+1.7	1.5	1.8	2.3
32–35	–3.0	1.7	1.7	1.8
36–38	+3.9	2.4	2.8	3.7
39–40	–0.2	1.8	2.2	2.9
41–42	+12.7	3.6	4.3	5.7
43–44	–0.8	1.2	1.5	1.9
45–46	+2.1	2.2	2.6	3.5
47–48	–5.3	3.8	4.0	4.4
49–50	+2.8	2.8	3.2	4.0
51–52	+4.7	2.9	3.4	4.4
53–54	+12.1	3.2	3.9	4.8
55–56	+7.4	3.8	4.5	5.6
57–58	–2.8	3.5	4.3	5.5
59–60	+5.2	4.0	4.7	6.1
61–62	+4.1	3.8	4.7	6.0
63–65	+6.6	3.1	3.7	4.9
66–68	+6.8	3.6	4.2	5.1
69–71	+7.8	3.0	3.7	4.9
72–78	–7.5	5.3	5.5	5.9
79–100	+2.8	1.1	1.3	1.8

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

Table 6 (Fourth-quintile (80th-percentile) line): Errors in poverty rates for a sample of a population of participants' households at a point in time (average of differences between estimated and observed values), by sample size and 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	69.0	76.9	86.7
4	+1.3	36.7	43.5	59.4
8	+2.0	28.0	34.1	43.1
16	+2.3	20.7	24.4	32.4
32	+2.5	14.0	16.4	21.5
64	+2.8	10.5	12.1	15.3
128	+2.9	7.4	8.8	11.0
256	+3.0	5.2	6.3	8.0
512	+2.8	3.7	4.4	5.8
1,024	+2.8	2.6	3.1	4.1
2,048	+2.8	1.9	2.2	2.9
4,096	+2.8	1.3	1.5	2.1
8,192	+2.8	0.9	1.1	1.4
16,384	+2.8	0.6	0.7	1.0

Scorecard applied to 1,000 bootstraps from the validation sample.

Table 9 (Fourth-quintile (80th-percentile) line): Percentages of participants' households by cut-off score and targeting classification, along with the hit rate

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
<=25	5.1	66.1	0.1	28.8	33.9
<=31	10.5	60.6	0.2	28.7	39.2
<=35	15.7	55.5	0.3	28.6	44.3
<=38	20.3	50.8	0.5	28.4	48.7
<=40	24.1	47.0	0.7	28.2	52.3
<=42	28.0	43.2	1.0	27.8	55.8
<=44	32.2	39.0	1.3	27.6	59.7
<=46	36.3	34.8	1.8	27.1	63.4
<=48	40.8	30.3	2.2	26.6	67.5
<=50	45.0	26.1	3.2	25.7	70.7
<=52	48.9	22.2	4.3	24.6	73.5
<=54	52.9	18.2	5.8	23.1	76.0
<=56	56.1	15.0	7.2	21.7	77.8
<=58	59.1	12.0	8.6	20.3	79.4
<=60	61.6	9.5	10.5	18.4	80.0
<=62	64.0	7.1	12.4	16.5	80.5
<=65	66.7	4.4	15.5	13.4	80.1
<=68	68.4	2.8	18.1	10.8	79.1
<=71	69.3	1.9	20.7	8.1	77.4
<=78	70.9	0.2	25.0	3.9	74.8
<=100	71.1	0.0	28.9	0.0	71.1

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

Table 10 (Fourth-quintile (80th-percentile) line): Share of all participants' 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
<=25	5.1	98.9	7.1	91.8:1
<=31	10.7	98.5	14.8	66.5:1
<=35	15.9	98.4	22.0	60.0:1
<=38	20.8	97.6	28.5	40.7:1
<=40	24.8	97.3	33.9	36.6:1
<=42	29.0	96.4	39.3	26.7:1
<=44	33.5	96.1	45.2	24.8:1
<=46	38.1	95.3	51.1	20.3:1
<=48	43.1	94.8	57.4	18.2:1
<=50	48.2	93.4	63.3	14.1:1
<=52	53.2	92.0	68.8	11.5:1
<=54	58.7	90.2	74.4	9.2:1
<=56	63.3	88.6	78.9	7.8:1
<=58	67.7	87.3	83.1	6.9:1
<=60	72.0	85.5	86.6	5.9:1
<=62	76.4	83.8	90.0	5.2:1
<=65	82.2	81.2	93.8	4.3:1
<=68	86.4	79.1	96.1	3.8:1
<=71	90.0	77.0	97.4	3.3:1
<=78	95.9	73.9	99.7	2.8:1
<=100	100.0	71.1	100.0	2.5:1

Scorecard applied to the validation sample.