

Developing Poverty Assessment Tools Project

**Accuracy Results for 12 Poverty Assessment Tool Countries**

The IRIS Center

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*A Brief Note on the Notation and Content of the Tables*

For eight of the twelve countries below, the poverty line used to classify the “very poor” is median consumption expenditure of those households classified as poor by the official poverty line. For the remaining four countries of Bangladesh, India (Bihar and Uttar Pradesh), Madagascar, and Uganda, the international poverty line of \$1.08 a day (in local purchasing power parity terms) is used in generating the accuracy figures. The type of poverty line used for each country will be noted next to its name and the poverty rate it implies will be listed under the country’s name.

All results are based on models with controls plus 15 best predictors. In the case of a two-step model, there are 15 best predictors for each of the steps of the procedure.

The best model for each country is in bold and second-best model is in italics.

Full details on the poverty accuracy criteria, including PIE and BPAC, can be found in the accompanying document, “Note on Assessment and Improvement of Tool Accuracy.”

### Accuracy Result for 4 Field Test Countries

<b>BANGLADESH (ppp)</b> Poverty rate: 31.41%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	80.60	56.57	43.43	18.33	-7.88	31.47
Quantile regression (estimation point: 43)	80.98	69.72	30.28	30.28	<b>0.00</b>	69.72
Linear Probability	81.72	58.17	41.83	16.33	-8.01	32.67
Probit	82.98	64.94	35.06	19.12	-5.01	49.00
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 45 percentile cutoff	82.98	68.92	31.08	23.11	-2.50	60.96
Quantile (estimation points:43, 22) – 45 percentile cutoff	83.48	74.50	25.50	27.09	0.50	<b>72.98</b>
LP – 43 percentile cutoff	84.85	73.71	26.29	21.91	-1.37	69.32
Probit – 43 percentile cutoff	84.61	73.71	26.29	22.71	-1.13	70.12

<b>KAZAKHSTAN (median)</b> Poverty rate: 4.52%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	96.08	13.51	86.49	0.00	-3.92	-72.97
Quantile regression (estimation point: 23)	94.74	45.95	54.05	62.16	0.37	37.84
Linear Probability	95.59	5.40	94.59	2.70	-4.16	-86.49
Probit	96.20	32.43	67.57	16.22	-2.33	-18.92
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 20 percentile cutoff	95.84	32.43	67.57	24.32	-1.96	-10.81
Quantile (estimation points: 23, 5) – 20 percentile cutoff	94.61	40.54	59.46	59.46	<b>0.00</b>	<b>40.54</b>
LP – 22 percentile cutoff	96.94	43.24	56.76	10.81	-2.08	-2.70
Probit – 22 percentile cutoff	NA <sup>1</sup>					

<sup>1</sup> Two-step Probit could not be computed for the 22 percentile cutoff.

<b>PERU (median)</b> Poverty rate: 26.88%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	86.38	66.98	33.02	17.67	4.13	51.63
Quantile regression (estimation point: 41)	85.13	72.56	27.44	27.91	<b>0.13</b>	<b>72.09</b>
Linear Probability	85.50	62.33	37.67	16.28	5.75	40.93
Probit	85.63	65.58	34.42	19.07	-4.12	50.23
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 87 percentile cutoff	85.88	69.77	30.23	22.33	-2.13	61.86
Quantile (estimation points: 41, 37) – 87 percentile cutoff	85.25	73.49	26.51	28.37	0.50	71.63
LP – 59 percentile cutoff	86.87	69.30	30.69	18.13	-3.37	56.74
Probit – 59 percentile cutoff	86.50	68.84	31.16	19.07	-3.25	56.74

<b>UGANDA (ppp)</b> Poverty rate: 32.36%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	74.36	54.51	45.49	33.72	-3.81	42.74
Quantile regression (estimation point: 44)	75.51	61.96	38.04	37.65	<b>-0.12</b>	61.57
Linear Probability	76.78	52.94	47.06	24.71	-7.23	30.59
Probit	77.66	56.86	43.14	25.88	-5.58	39.60
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 54 percentile cutoff	77.79	63.92	36.08	32.55	-1.14	60.39
Quantile (estimation points: 44, 24) – 54 percentile cutoff	79.06	67.84	32.16	32.55	0.13	<b>67.45</b>
LP – 49 percentile cutoff	79.44	64.71	35.29	28.23	-2.28	57.64
Probit – 49 percentile cutoff	79.44	64.31	35.69	27.84	-2.53	56.47

### Accuracy Results for 8 LSMS Countries

<b>ALBANIA (median)</b> Poverty Rate: 10.42%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	89.88	22.22	77.78	19.37	-6.09	-36.19
Quantile regression (estimation point: 34)	90.21	53.97	46.03	47.94	0.20	<b>52.06</b>
Linear Probability	89.78	4.13	95.87	2.22	-9.76	-89.52
Probit	90.51	28.57	71.43	19.68	-5.39	-23.18
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 22 percentile cutoff	91.27	41.59	58.41	25.40	-3.44	8.57
Quantile (estimation points: 34, 9) – 22 percentile cutoff	89.41	49.84	50.16	51.43	<b>0.13</b>	48.57
LP – 26 percentile cutoff	91.60	41.27	58.73	21.90	-3.84	4.44
Probit – 26 percentile cutoff	90.87	32.70	67.30	20.32	-4.90	-14.29

<b>GHANA (median)</b> Poverty Rate: 13.42%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	87.90	31.86	68.14	22.03	-6.19	-14.24
Quantile regression (estimation point: 38)	86.74	50.00	50.00	48.82	-0.16	48.81
Linear Probability	87.49	11.86	88.14	5.08	-11.15	-71.19
Probit	87.97	29.66	70.34	19.32	-6.85	-21.36
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 25 percentile cutoff	88.22	36.61	63.39	24.41	-5.23	-2.37
Quantile (estimation points: 38, 10) – 25 percentile cutoff	87.51	53.90	46.10	46.95	<b>0.11</b>	<b>53.05</b>
LP – 29 percentile cutoff	88.54	35.93	64.07	21.36	-5.73	-6.78
Probit – 29 percentile cutoff	88.56	33.56	66.44	18.81	-6.39	-14.07

<b>GUATEMALA (median)</b> Poverty Rate: 22.96%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	87.25	70.13	29.87	25.66	-0.97	65.93
Quantile regression (estimation point: 49)	87.41	73.14	26.86	27.94	0.25	72.06
Linear Probability	86.97	63.76	36.24	20.49	-3.62	48.02
Probit	87.65	70.01	29.99	23.80	-1.42	63.82
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 32 percentile cutoff	87.91	72.42	27.58	25.06	-0.58	69.89
Quantile (estimation points: 49, 16) – 32 percentile cutoff	87.86	74.04	25.96	26.92	0.22	73.08
LP – 30 percentile cutoff	88.16	74.10	25.90	25.66	<b>-0.06</b>	<b>73.86</b>
Probit – 30 percentile cutoff	87.91	72.78	27.22	25.42	-0.41	70.97

<b>INDIA: Bihar and Uttar Pradesh (ppp)</b> Poverty Rate: 77.87%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	85.80	95.24	4.76	13.49	6.80	86.51
Quantile regression (estimation point: 65)	86.69	91.63	8.37	8.73	0.28	91.27
Linear Probability	85.47	96.93	3.07	15.59	9.75	84.41
Probit	87.44	95.79	4.21	11.92	6.00	88.08
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 78 percentile cutoff	85.70	94.76	5.24	13.12	6.14	86.88
Quantile (estimation points: 65, 51) – 78 percentile cutoff	86.50	91.33	8.67	8.67	<b>0.00</b>	<b>91.33</b>
LP – 78 percentile cutoff	85.56	96.39	3.61	14.93	8.81	85.07
Probit – 78 percentile cutoff	87.76	95.06	4.94	10.78	4.55	89.22

<b>JAMAICA (median)</b> Poverty Rate: 8.03%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	92.54	39.06	60.94	32.03	-2.32	10.16
Quantile regression (estimation point: 34)	91.72	48.44	51.56	51.56	<b>0.00</b>	48.44
Linear Probability	92.41	5.47	94.53	0.00	-7.59	-89.06
Probit	93.29	28.91	71.09	12.50	-4.71	-29.69
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 24 percentile cutoff	93.85	45.31	54.69	21.88	-2.63	12.50
Quantile (estimation points: 34, 8) – 24 percentile cutoff	92.85	54.69	45.31	43.75	-0.13	<b>53.13</b>
LP – 24 percentile cutoff	94.48	43.75	56.25	12.50	-3.51	0
Probit – 24 percentile cutoff	93.91	42.97	57.03	18.75	-3.07	4.69

<b>MADAGASCAR (ppp)</b> Poverty Rate: 35.22%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	83.64	76.19	23.81	22.66	-0.41	75.04
Quantile regression (estimation point: 51)	83.82	77.06	22.94	23.00	<b>0.02</b>	77.00
Linear Probability	84.12	78.72	21.28	23.81	0.89	76.19
Probit	84.10	76.77	23.23	21.91	-0.47	75.45
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 41 percentile cutoff	84.45	78.03	21.97	22.20	0.08	77.80
Quantile (estimation points: 51, 21) – 41 percentile cutoff	84.53	78.09	21.91	22.02	0.04	77.98
LP – 37 percentile cutoff	84.85	78.61	21.39	21.62	0.08	<b>78.38</b>
Probit – 37 percentile cutoff	84.41	76.37	23.63	20.64	-1.05	73.38

<b>TAJKISTAN (median)</b> Poverty Rate: 47.29%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	71.80	71.81	28.19	31.45	1.54	68.55
Quantile regression (estimation point: 51)	71.34	70.24	29.76	30.84	0.51	69.16
Linear Probability	72.54	72.77	27.23	30.84	1.71	69.16
Probit	72.42	71.93	28.07	30.24	1.03	69.76
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 51 percentile cutoff	72.88	72.17	27.83	29.52	0.80	70.48
Quantile (estimation points: 51, 24) – 51 percentile cutoff	73.45	71.93	28.07	28.07	<b>0.00</b>	<b>71.93</b>
LP – 52 percentile cutoff	74.19	73.49	26.51	28.07	0.74	<b>71.93</b>
Probit – 52 percentile cutoff	74.13	72.29	27.71	26.99	-0.34	71.57

<b>VIETNAM (median)</b> Poverty Rate: 14.52%	Total Accur.	Pov. Accur.	Under- coverage	Leakage	PIE	BPAC
<b>Single-step methods -- MAXR variable selection</b>						
OLS	91.58	58.65	41.35	16.73	-3.57	34.03
Quantile regression (estimation point: 42)	91.05	68.87	31.13	30.55	<b>-0.08</b>	68.29
Linear Probability	89.92	37.52	62.49	6.97	-8.05	-18.00
Probit	91.58	59.12	40.88	17.19	-3.44	35.42
<b>Two-step methods -- MAXR variable selection</b>						
OLS – 22 percentile cutoff	91.36	59.81	40.19	19.40	-3.02	39.02
Quantile (estimation points: 42, 9) – 22 percentile cutoff	91.61	71.66	28.34	29.50	0.17	<b>70.50</b>
LP – 23 percentile cutoff	91.93	65.51	34.49	21.14	-1.94	52.15
Probit – 23 percentile cutoff	91.37	62.95	37.05	22.42	-2.12	48.32