



# Representativeness in RDD surveys in 9 LMICs

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# Motivation

- **Rising cell phone coverage and ownership** has made remote surveys more feasible and cost-effective in LMICs
- COVID-19 pandemic cost and safety considerations accelerated this shift.
- New survey modes are becoming available in LMICs, but **implications for response & coverage bias** aren't well understood

# Phone Surveys in LMICs

- **Phone response rates (pre-pandemic)** range from mean 33% (RDD) to 56% (household survey baseline)
  - Household (F2F) surveys, e.g. the Demographic and Health Survey program rarely have response rates below 90% (Corsi et al 2012)
- **Phone-based samples** frequently differ substantially from household surveys (age, gender, education, urbanicity)
- **Coverage and response bias are endogenously determined**
  - **Information:** knowledge of coverage challenges may change response behavior
  - **Protocol:** coverage and response bias influenced by survey protocol, local cultural practices
  - **Phone access:** multiple SIM ownership complicates coverage & stratification



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# Research Questions

- **How representative are random-digit dial (RDD) generated samples in LMICs?**
- **To what extent can we statistically adjust to improve representativeness?**

\*IPA is examining the role of protocol effects in other papers and methods notes.

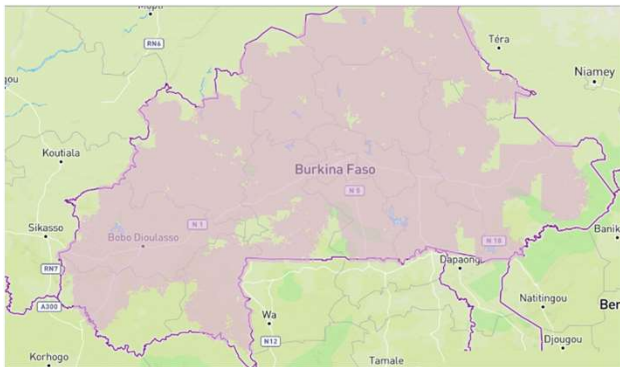
# Data: IPA 2020 RDD Surveys

Country	Sample Size	Survey	Survey Dates
Burkina Faso	1,371	National Sample (RECOVR)	June 2020
Colombia	1,508	National Sample (RECOVR)	May 2020
Ghana	1,637	National Sample (RECOVR)	May 2020
Kenya	794	Consumer Protection in DFS	Sept-Oct 2020
Mexico City	1,338	National Sample (RECOVR)	June 2020
Nigeria	1,968	COVID-19 Gender	Nov-Dec 2020
Philippines	1,389	National Sample (RECOVR)	June 2020
Rwanda	1,489	National Sample (RECOVR)	June 2020
Sierra Leone	1,284	National Sample (RECOVR)	May-June 2020



# Mobile Coverage in RDD Sites

**Burkina Faso**



**Ghana**



**Sierra Leone**



**Kenya**



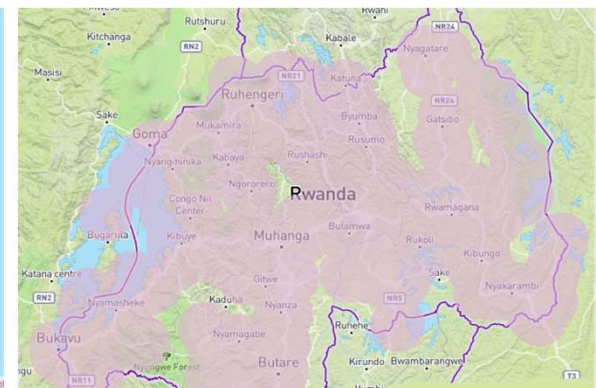
**Colombia**



**Nigeria**



**Philippines**



**Rwanda**



# RDD Response Rates

	<b>Burkina Faso</b>	<b>Colombia</b>	<b>Ghana</b>	<b>Kenya</b>	<b>Nigeria</b>	<b>Mexico City</b>	<b>Rwanda</b>	<b>Philippines</b>	<b>Sierra Leone</b>
Response rate 1									
Response rate 3									
Cooperation rate 1									
Refusal rate 1									
Contact rate 1									
Eligibility rate (e)									



# RDD Response Rates

	<b>Burkina Faso</b>	<b>Colombia</b>	<b>Ghana</b>	<b>Kenya</b>	<b>Nigeria</b>	<b>Mexico City</b>	<b>Rwanda</b>	<b>Philippines</b>	<b>Sierra Leone</b>
Response rate 1	59%	25%	21%	15%	18%	6%	45%	18%	39%
Response rate 3	59%	26%	21%	17%	23%	7%	45%	19%	39%
Cooperation rate 1	96%	90%	54%	62%	39%	84%	89%	76%	78%
Refusal rate 1	0%	3%	10%	6%	26%	1%	5%	6%	10%
Contact rate 1	61%	28%	39%	24%	47%	8%	50%	23%	50%
Eligibility rate (e)	98%	97%	97%	80%	65%	95%	100%	93%	97%



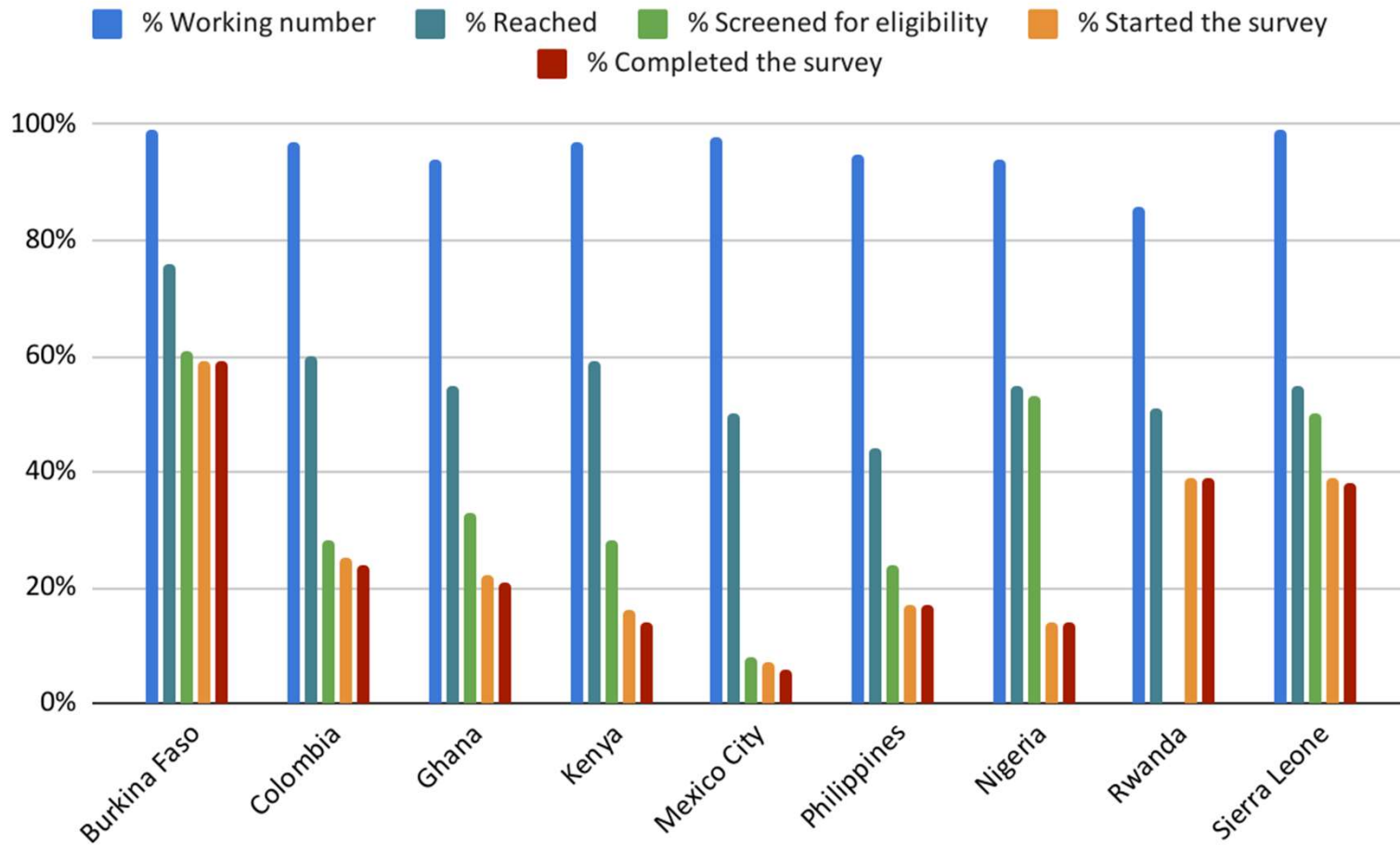


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# Unconditional Response Rates



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# Methods

1. **Assess selection bias** *at national level* by comparing demographic profiles to national benchmarks
  - Using ***representative household surveys*** from statistical agencies
    - High response rates
    - Granular stratification based on census data
    - Detailed household demographic data (rosters, long surveys)
  - Focusing on indicators less likely to shift significantly due to Covid-19
1. **Assess simple statistical adjustment** to correct for biases in these samples
  - Using ***simple post-stratification weighting***

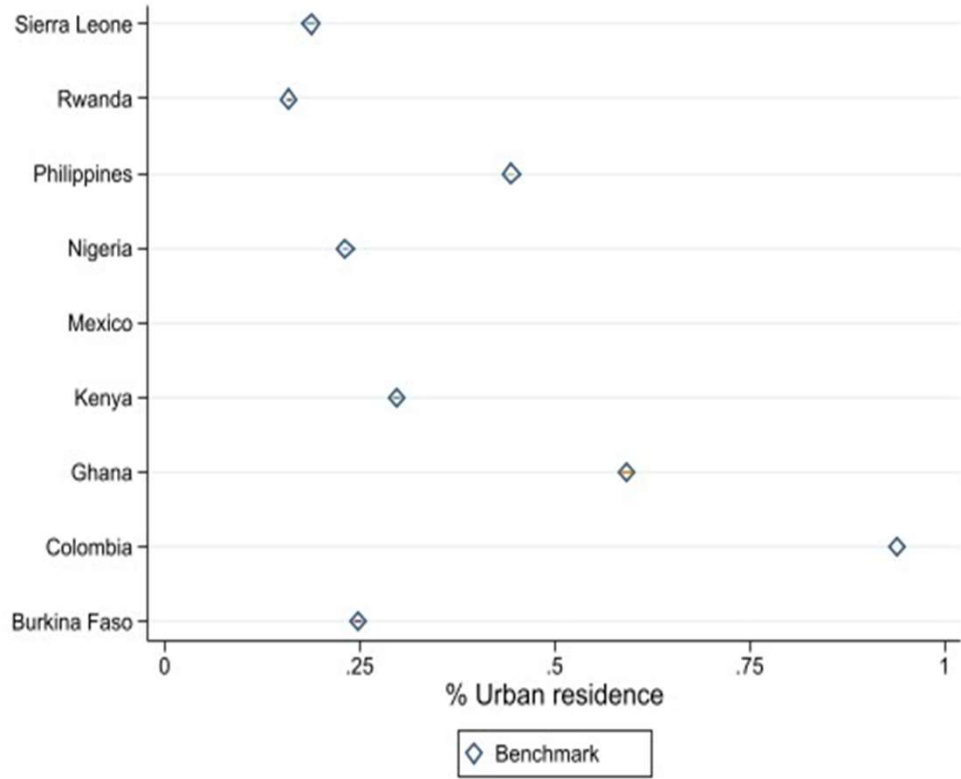
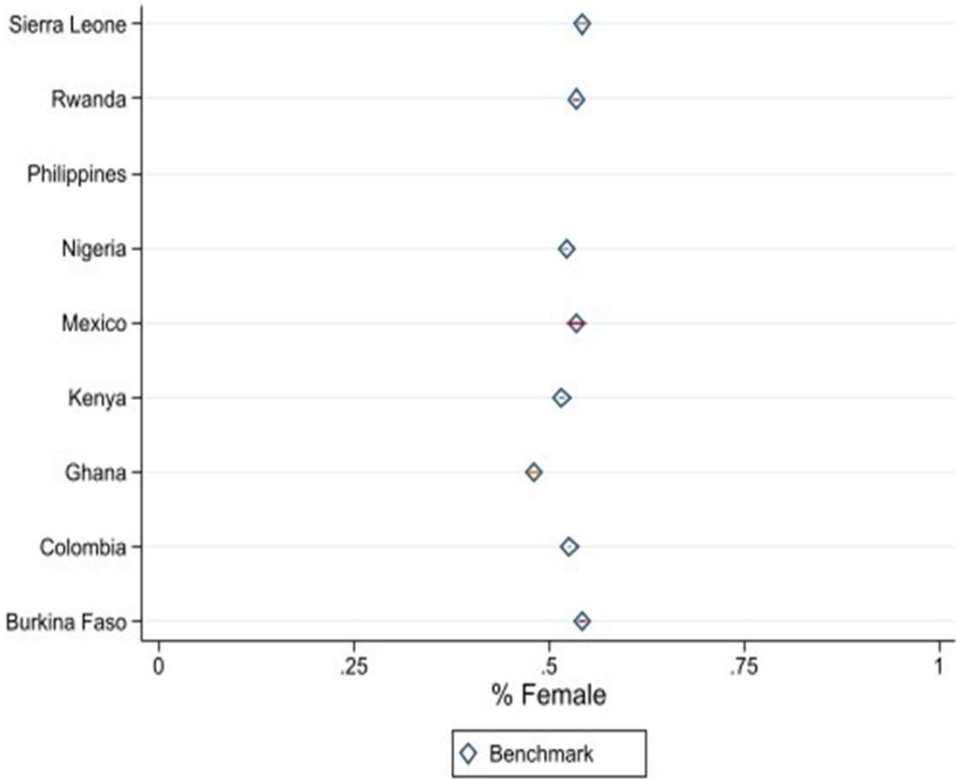


# National Household Survey Benchmarks

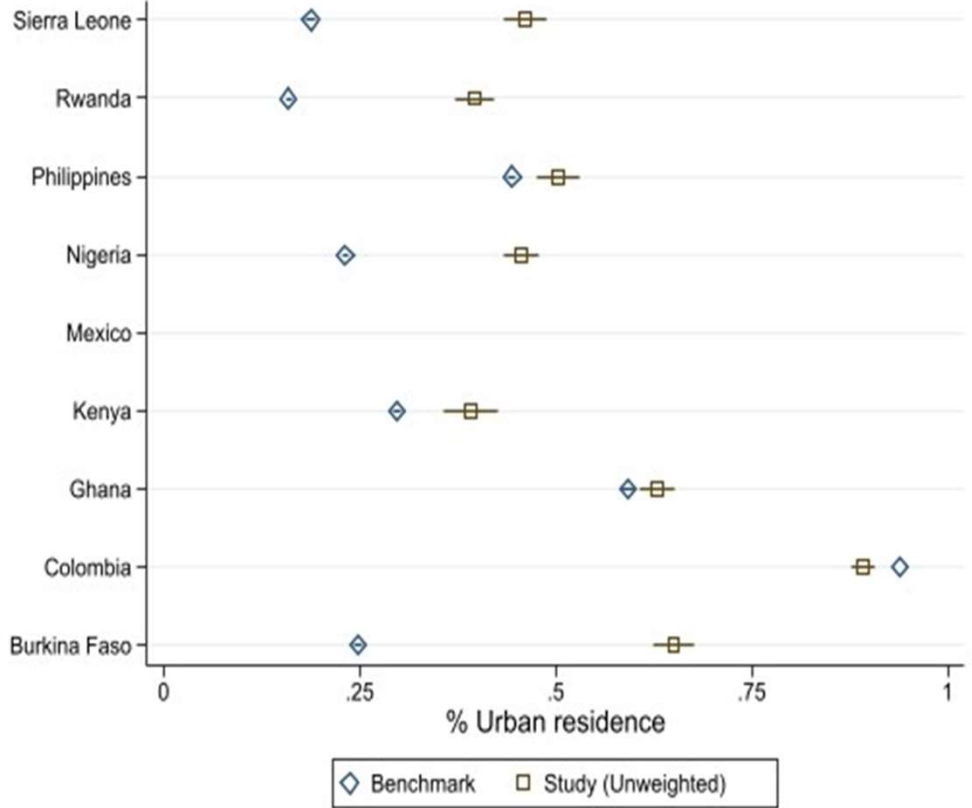
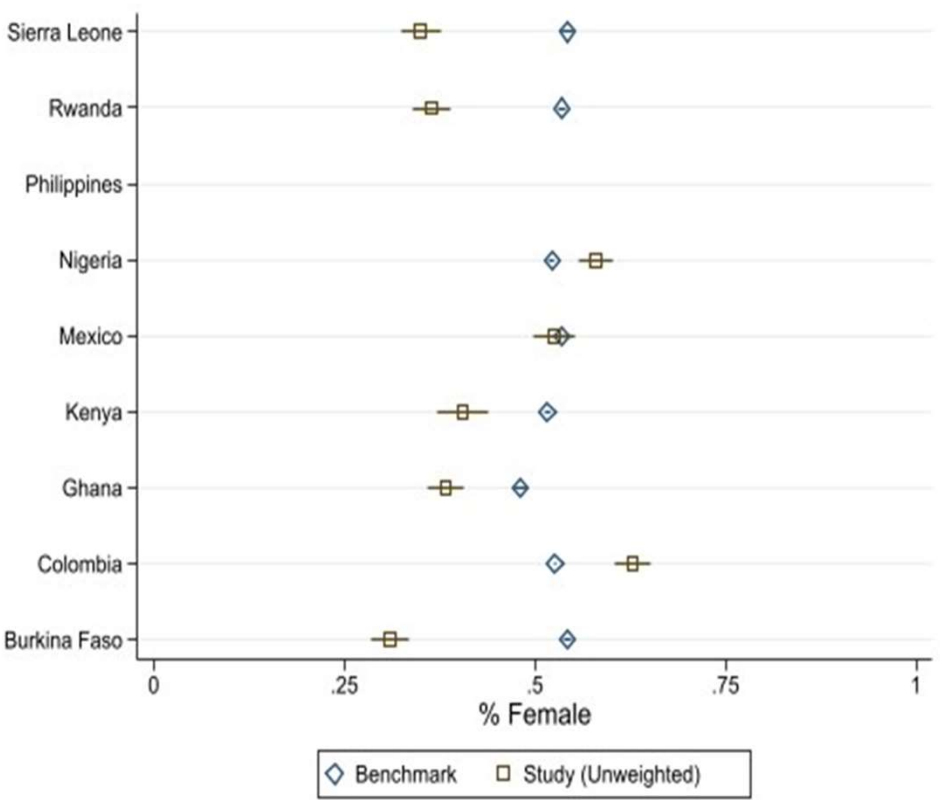
Country	Sample Size	Survey	Year
Burkina Faso	36,384	LSMS	2014
Colombia	816,994	GEIH	2019
Ghana	31,374	LSMS	2016-7
Kenya	45,877	KIHBS	2015-6
Mexico City	5,618	ENIGH	2018
Nigeria	57,838	LSMS	2018-9
Rwanda	33,419	EICV5	2016
Sierra Leone	21,270	IHS	2018
Philippines	41,544	FIES	2015



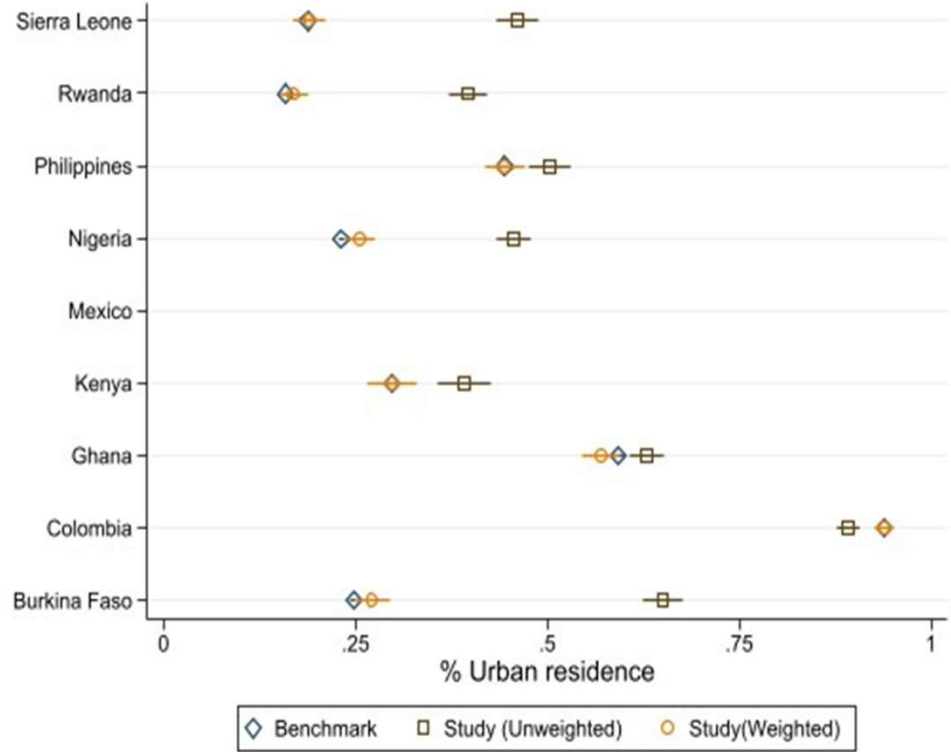
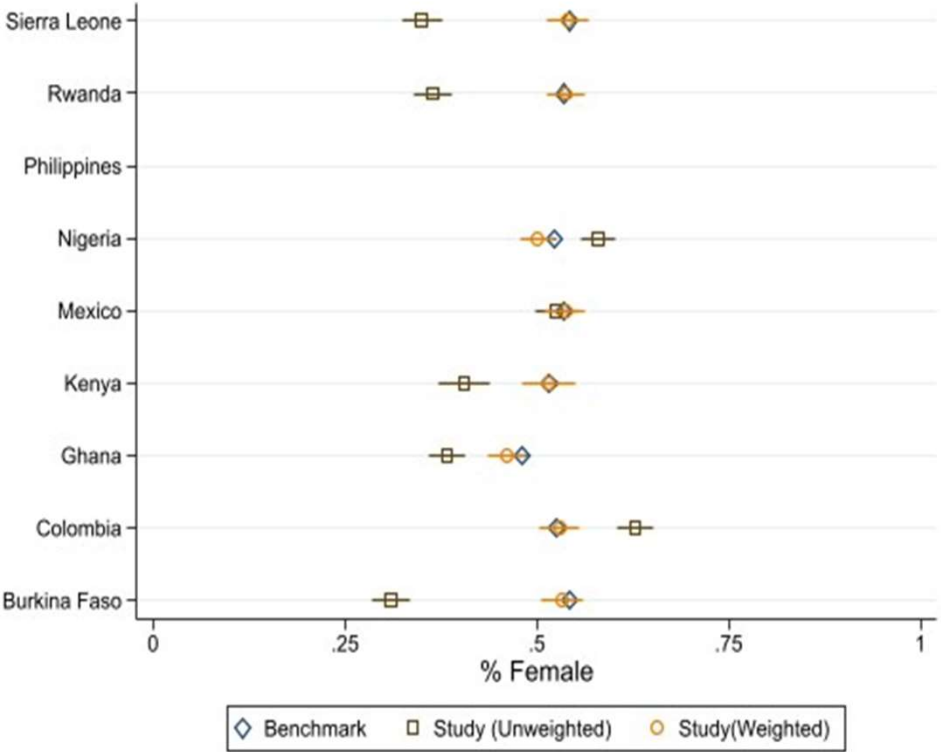
# RDD vs. F2F: Gender & Urbanicity



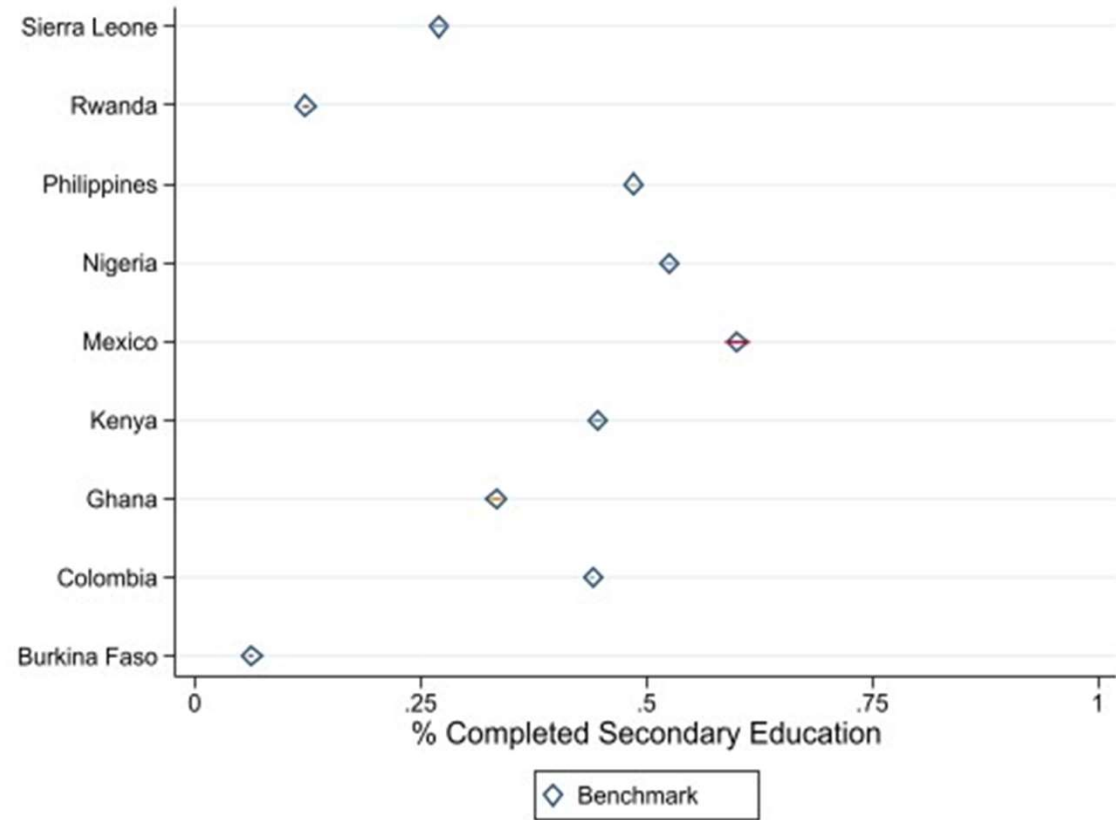
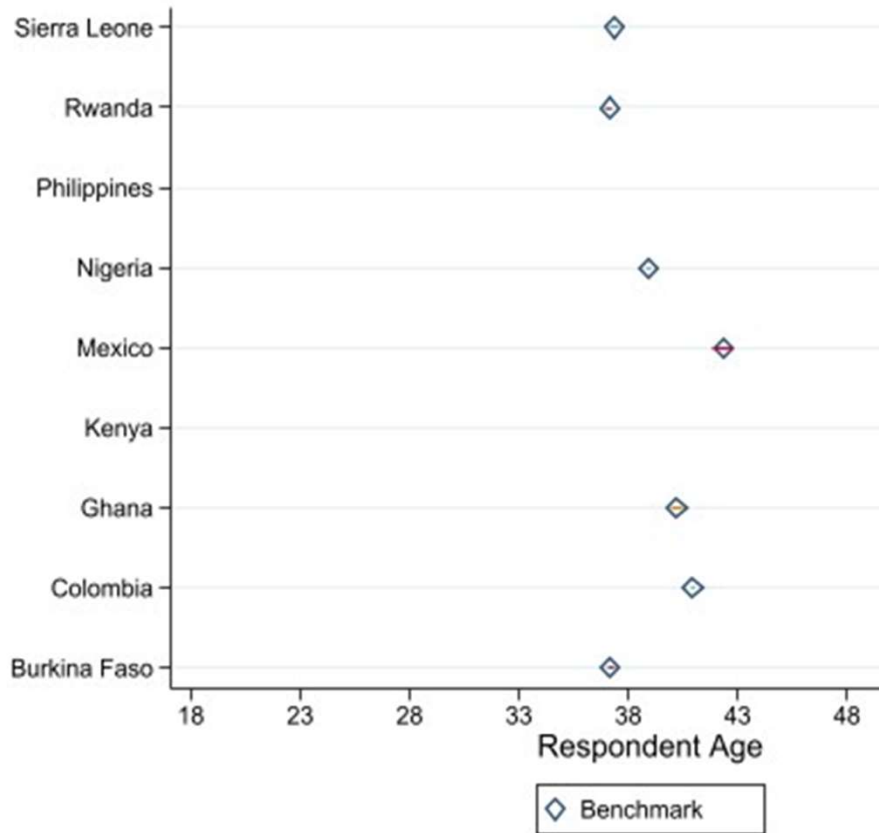
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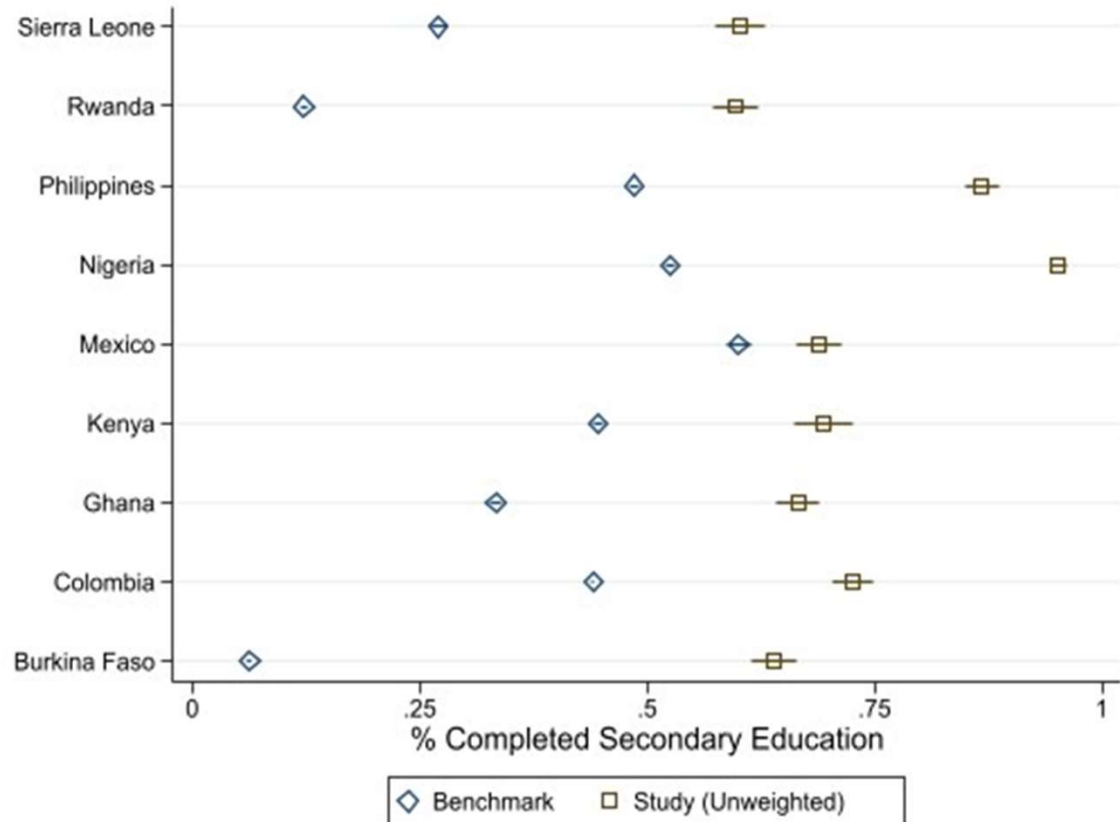
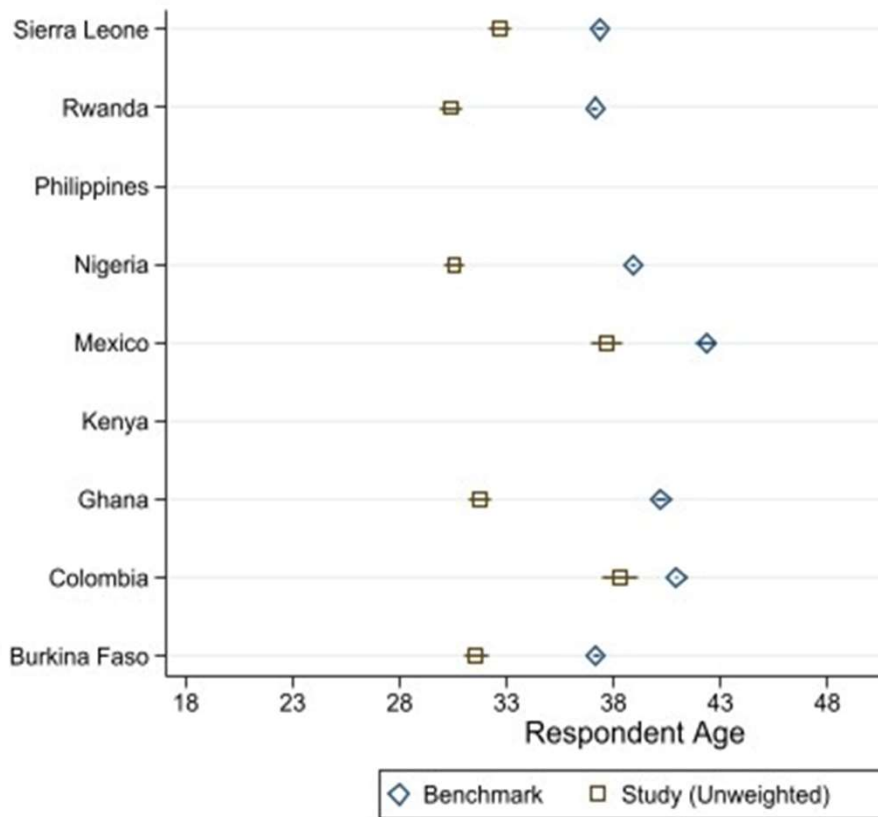


# RDD vs. F2F: Age & Education

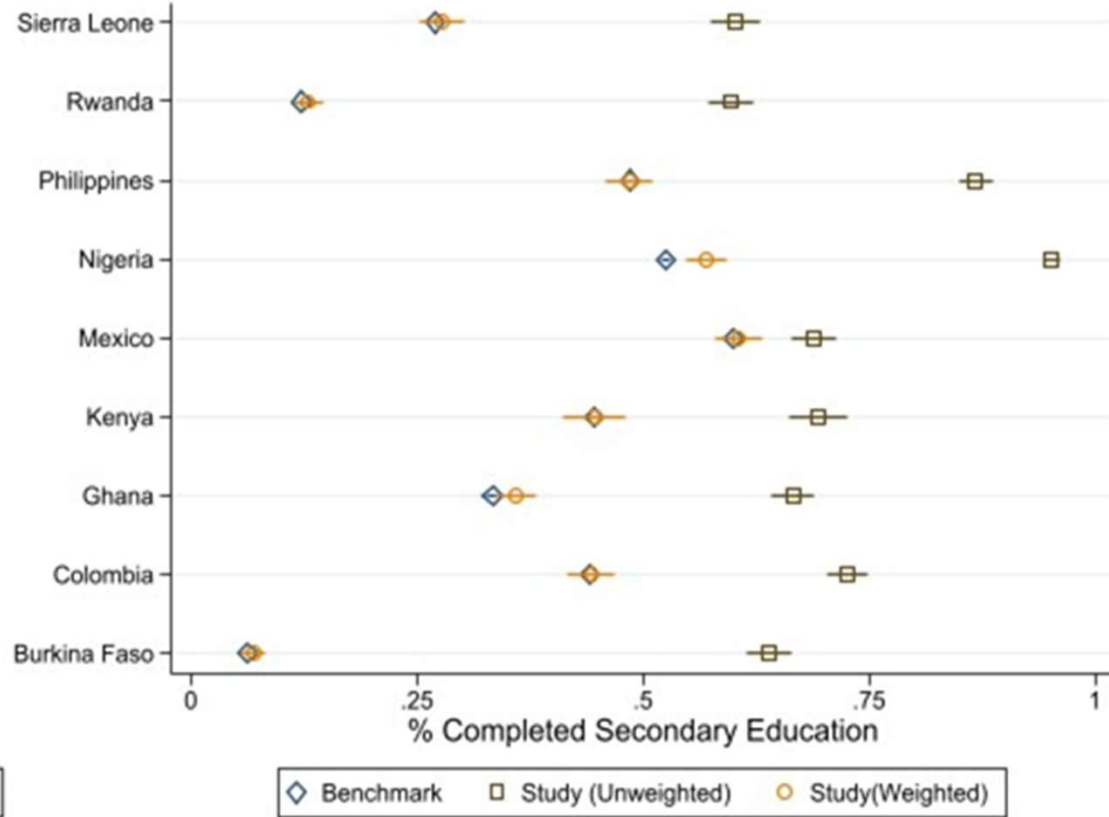
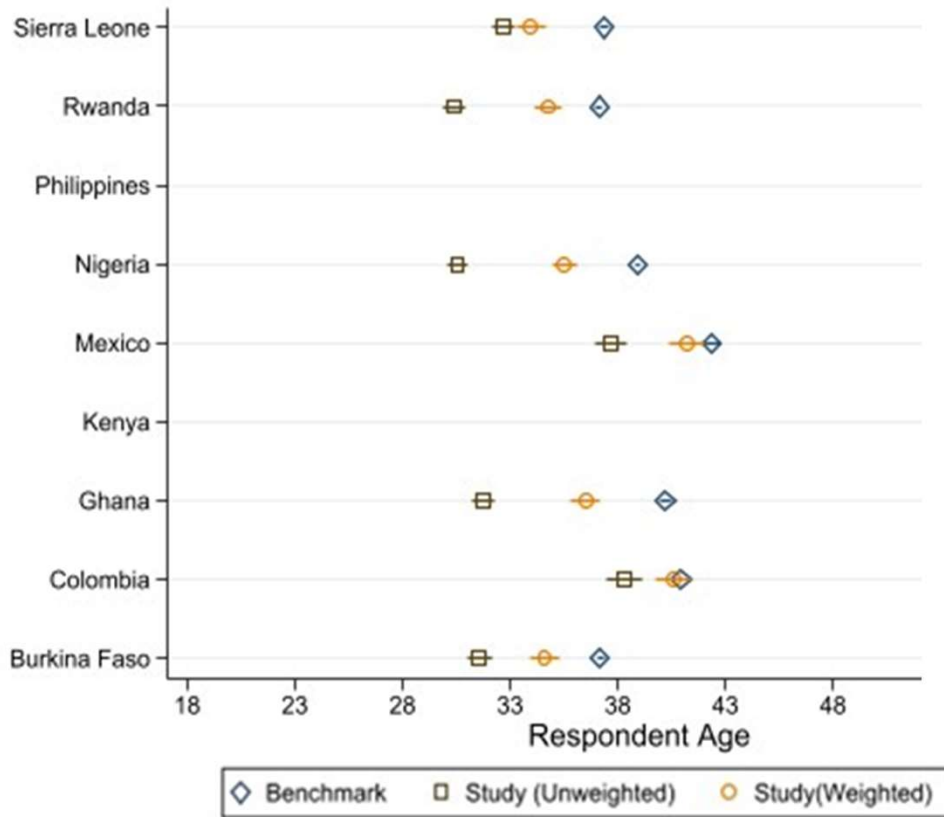




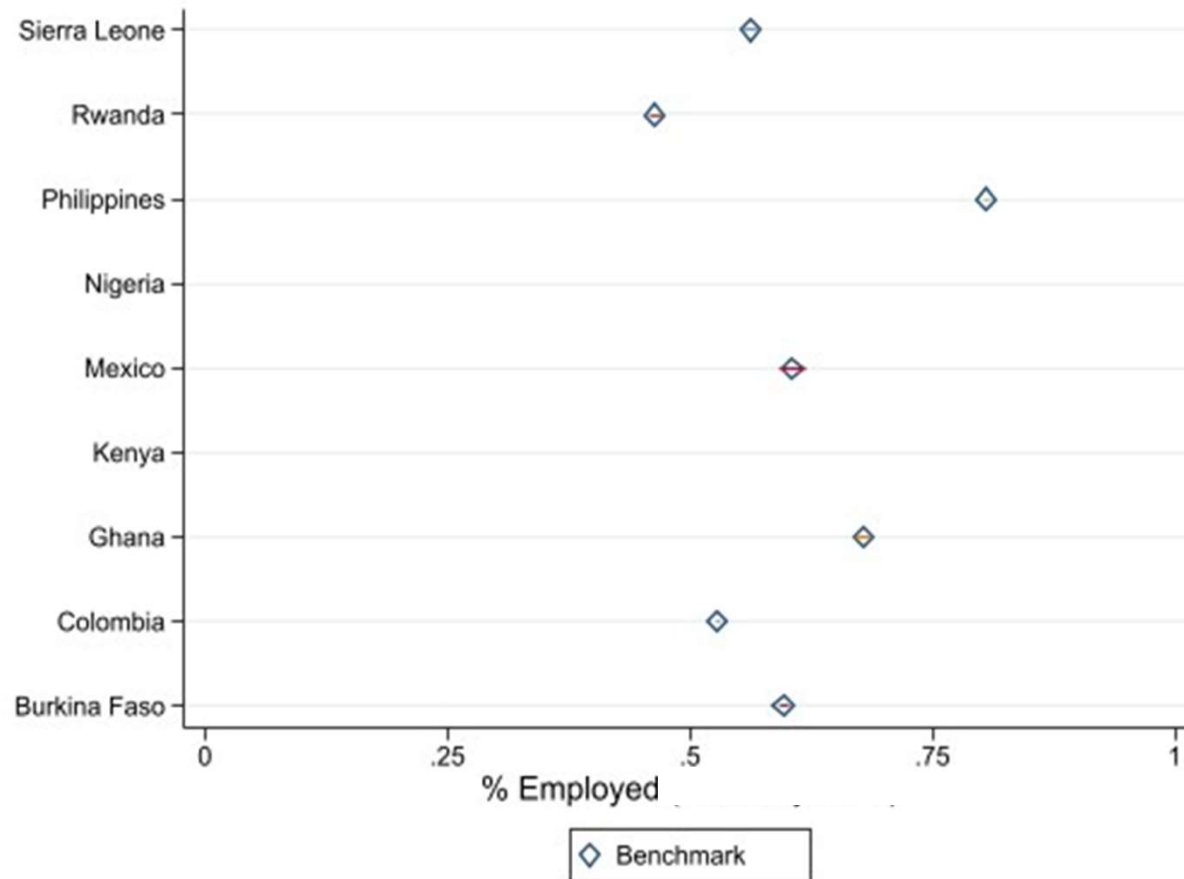
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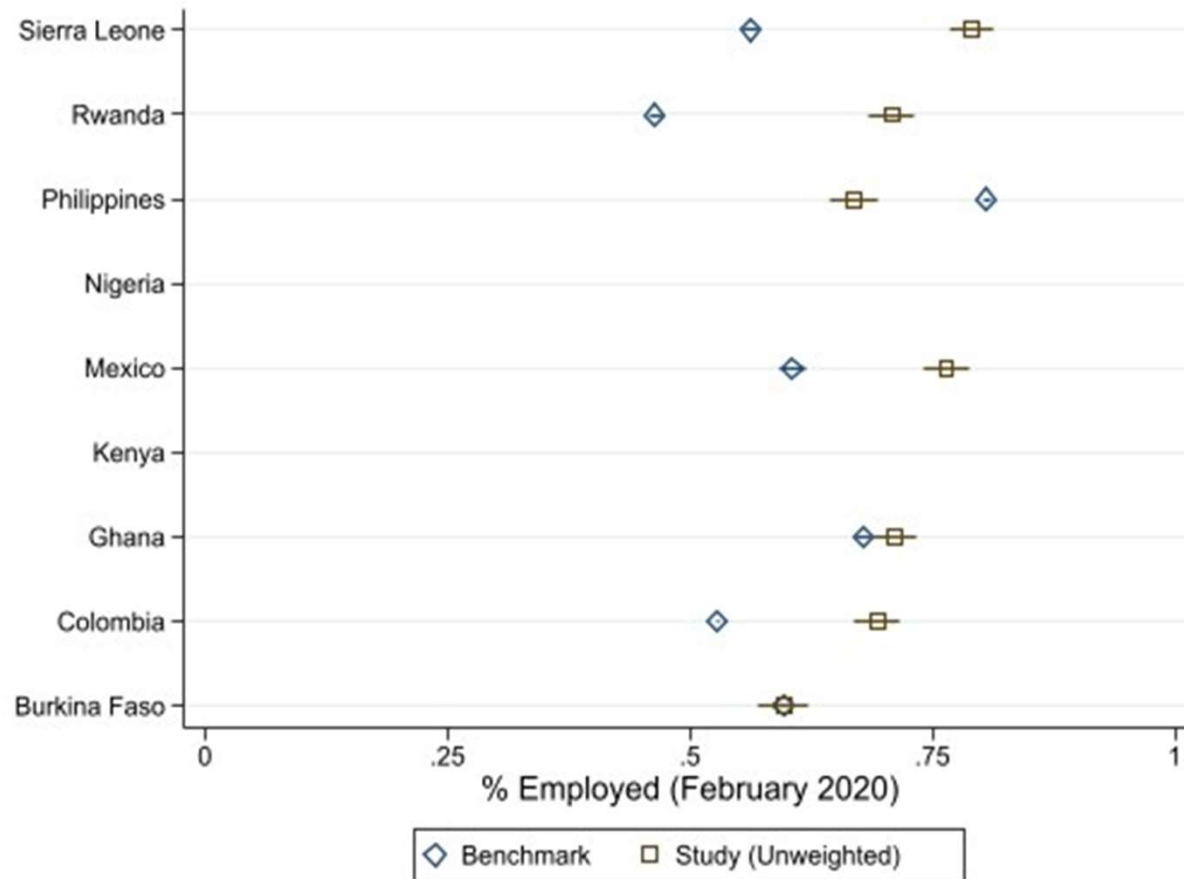
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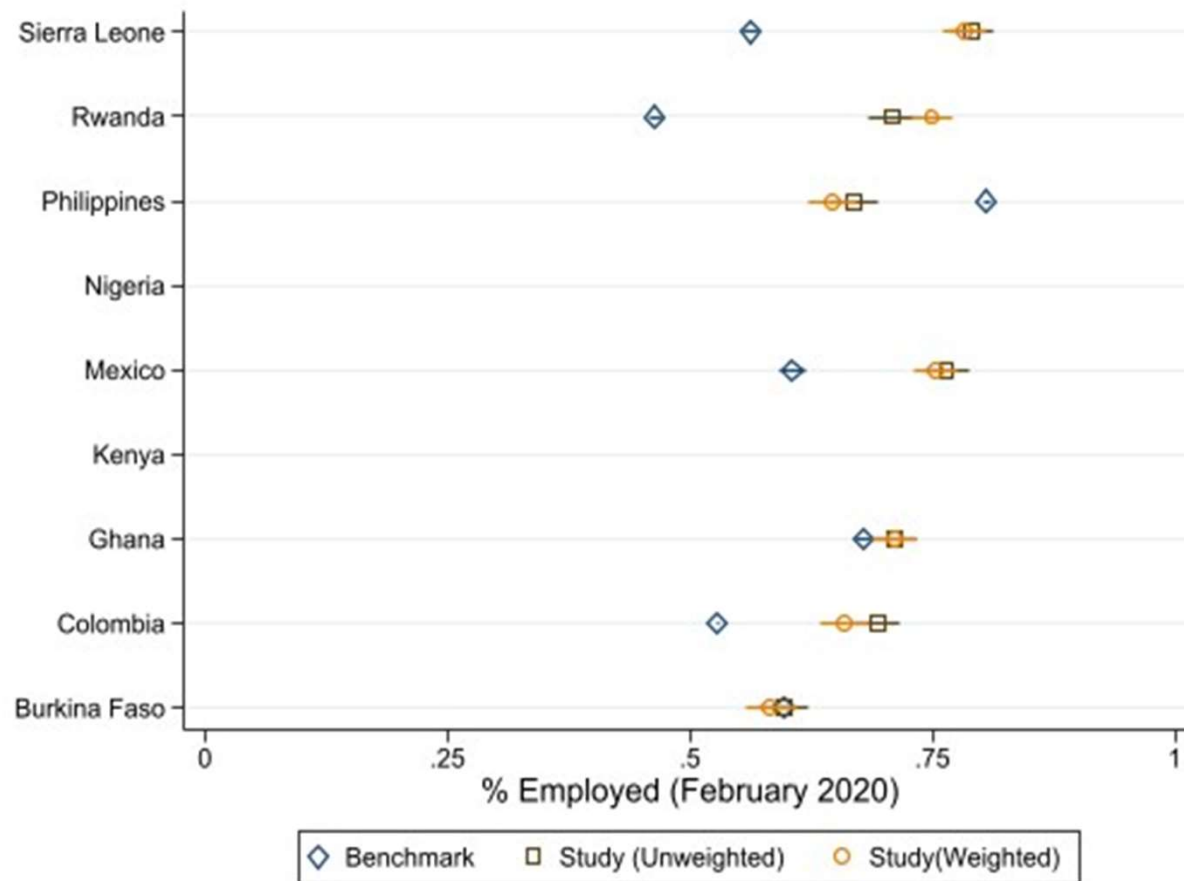
# RDD vs. F2F: Employment



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# RDD vs. F2F: Employment



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# Discussion

- Remote survey coverage and response bias varies by context, but clear patterns emerge and can be quantified to set expectations inform survey design
- Post-stratification and raking on a simple demographic profile won't typically adjust for coverage and response bias at the national level.
  - That said, primary interest isn't always national representation
- Next steps:
  - Disaggregating selection bias by sub-group (region, gender, occupation)
  - Testing different statistical adjustment methods & more carefully chosen weighting variables

