

COVID-19 Vaccine Acceptance in Sub-Saharan Africa

Findings from two rounds of High Frequency
Phone Surveys on COVID-19

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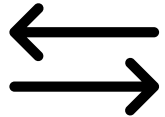


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Background



Current debate on lagging vaccination campaigns in LMICs centers around financial and supply chain factors, yet willingness to be vaccinated is another key factor to safeguard sufficient uptake



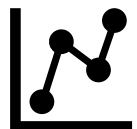
Studies in HICs show attitudes are malleable and change over time, however, very limited evidence on COVID-19 vaccine acceptance over time in LMICs thus far



LSMS-supported national longitudinal High Frequency Phone Surveys (HFPS) on COVID-19 collected monthly data since May 2020. Survey question: *If an approved vaccine to prevent coronavirus was available right now at no cost, would you agree to be vaccinated?*

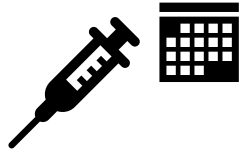


First round of questions on vaccine acceptance from Sept – Dec 2020 in six countries in Sub-Saharan Africa (Burkina Faso, Ethiopia, Malawi, Mali, Nigeria, Uganda)

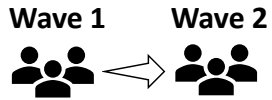


Second round data on COVID-19 vaccine acceptance collected between February and June 2021 which allows for longitudinal analysis

Some features of the data



Data cover a survey round **before** commencement of vaccination campaigns **and one around their start**



Respondents typically the same across waves, allowing the **tracking of** the same individuals' **attitudes over time**



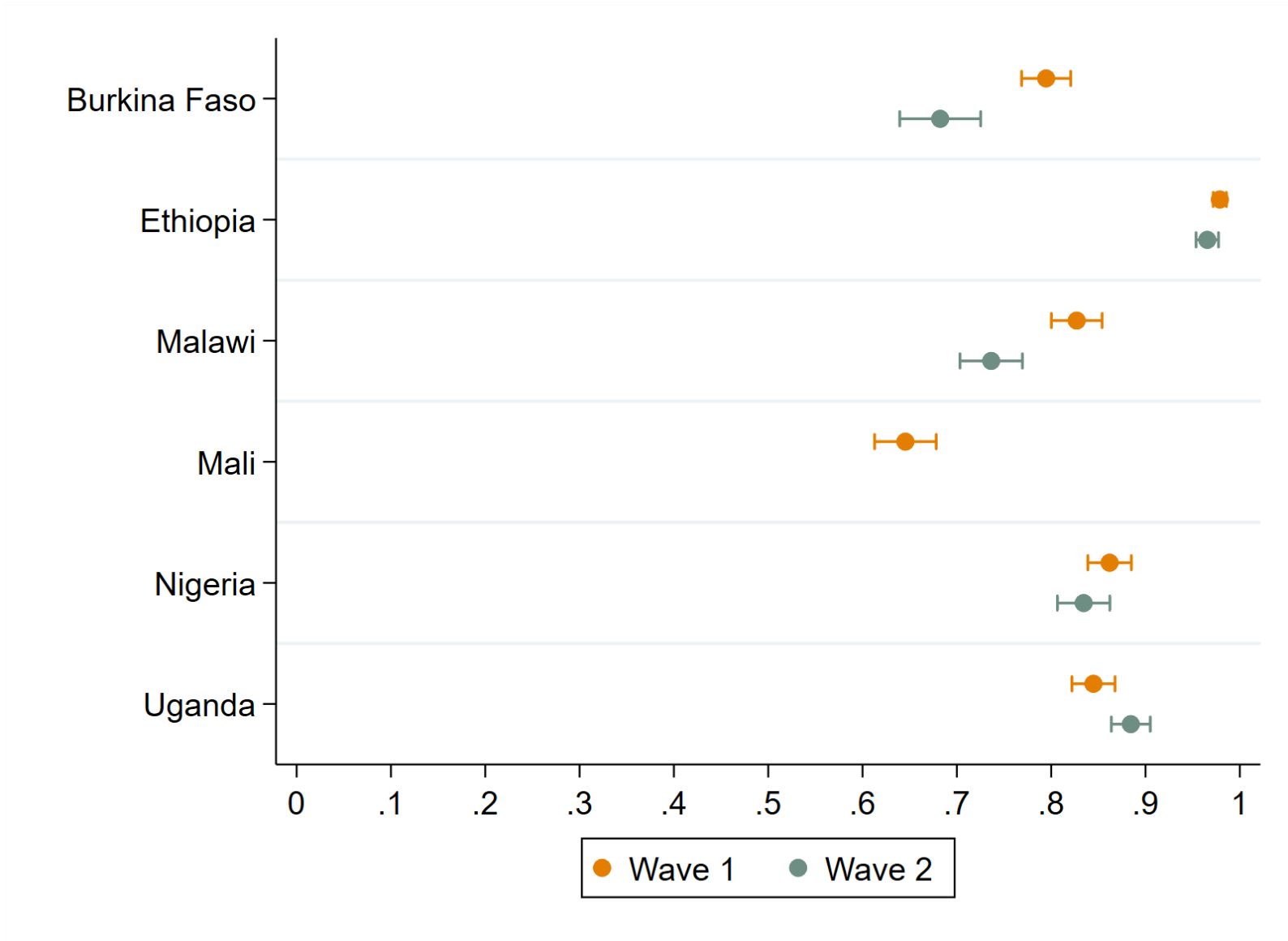
Data are **cross country comparable** and draw on the pre-COVID LSMS-ISA household surveys as nationally representative sampling frames. Sample of household main respondents, not a randomly selected sample of individuals.



Can link data to a wealth of **pre-COVID socioeconomic characteristics** and further information from the LSMS-ISA household surveys and re-calibrate survey weights to **attenuate coverage biases** (Ambel et al. 2021; Brubaker et al., 2021).

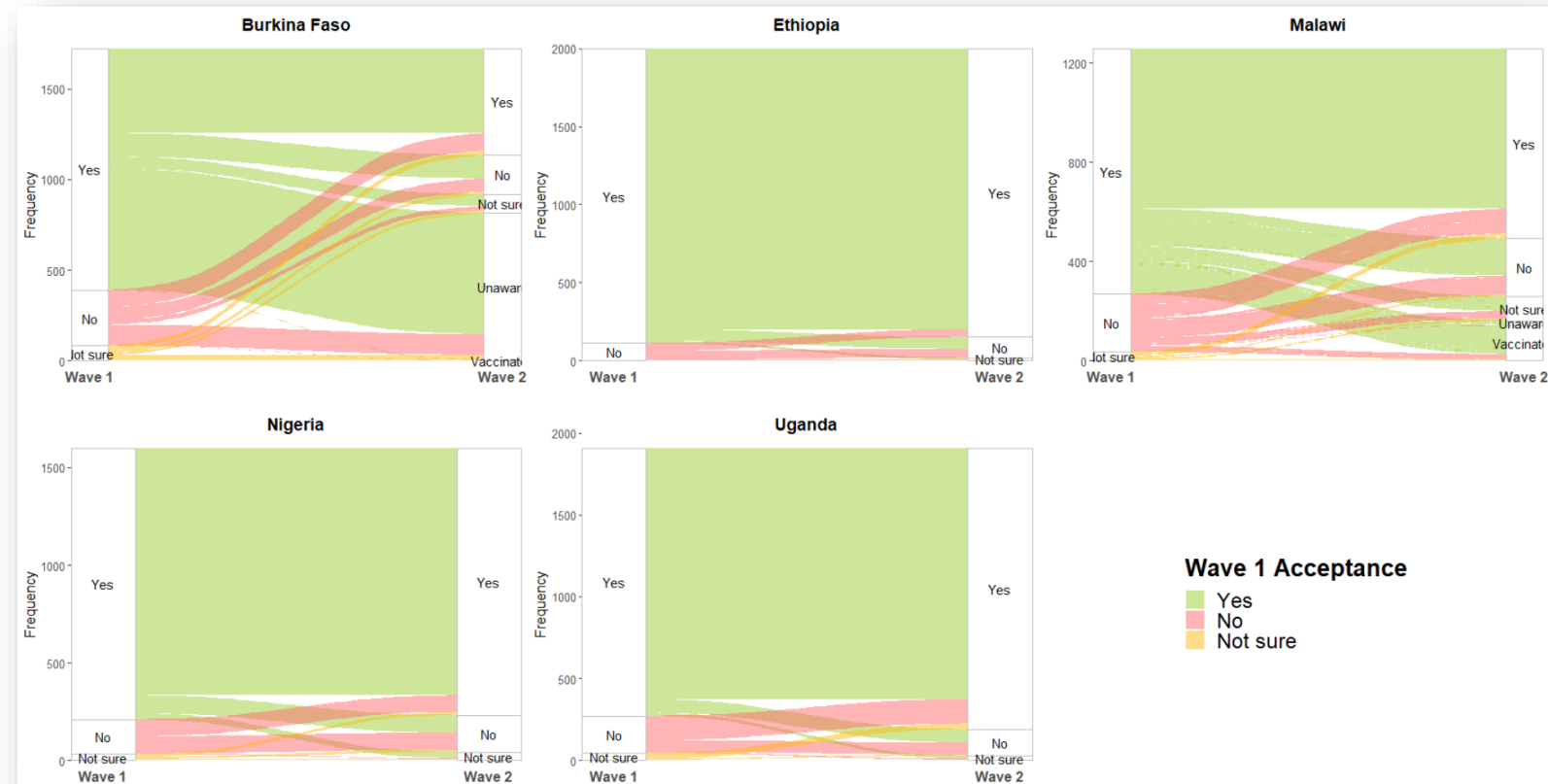
High rates of acceptance with some cross-country and temporal variation

- Four in five people were willing to be vaccinated in all countries but Mali during autumn of 2020
- High acceptance rates relatively stable in most countries, yet some notable decreases in Burkina Faso and Malawi
- Near universal acceptance in Ethiopia and very high rates also in Uganda and Nigeria
- Latest acceptance rate estimates for Burkina Faso and Malawi from spring 2021 closer to the proverbial “herd immunity” threshold
- Caveat: Willingness to be vaccinated does not automatically translate into active demand!



Attitudes mostly stable but evidence that trust can be lost (and gained)

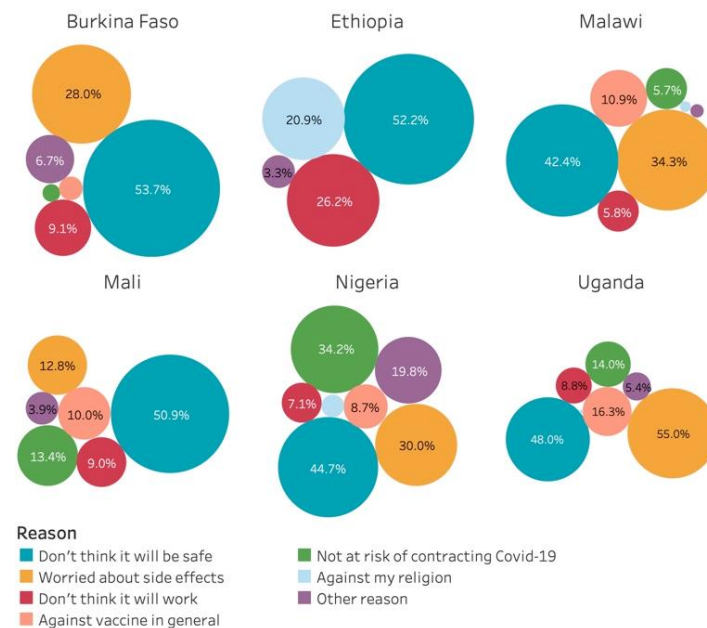
- Tracking individual respondents' attitudes over time reveals some limited switching of vaccine attitudes
- Little switching in Ethiopia (7% of panel indiv.'s) Nigeria (14%) and Uganda (15%)
- Somewhat larger amount of switchers in Burkina Faso (18%) and Malawi (28%)
- Among those changing attitudes, more people switch from accepting the vaccine to being hesitant in Ethiopia (65%), Burkina Faso (61%), Malawi (58%), and Nigeria (55%) whereas the opposite is true in Uganda (36%)
- Suggests that public information and communication campaigns need to be ongoing, trust can be lost (and gained)



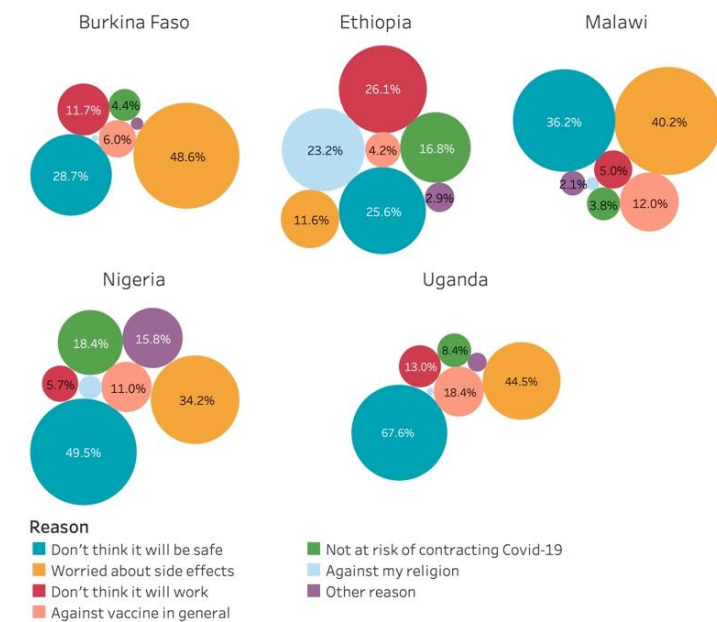
Concerns around safety of vaccines and side effects key reasons for hesitancy

- Concerns over the vaccine's safety and its side effects are the primary reservations
- Doubts regarding their efficacy or the need for vaccination appear secondary although non-negligible in Ethiopia and Nigeria
- Key concerns have remained the same over time although their share varied in some countries
- Public communications and information campaigns should aim to bolster confidence in the safety of vaccines and resolve concerns about adverse side effects

Wave 1



Wave 2



Clusters of hesitancy according to socio-demographic characteristics vary across countries

- Correlates of hesitancy vary across countries

Some indicative patterns include...

- ...higher hesitancy among those with internet access
- ...higher hesitancy among women
- ...higher hesitancy in urban areas (but opposite in Mali)
- ...higher hesitancy among better-off households (pre-COVID consumption data)

Correlates of hesitancy - marginal effects from multivariate logit regressions (pooled)

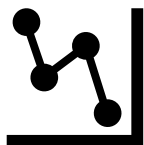
Dependent Variable: Vaccine Acceptance Dummy	(1) Burkina Faso	(2) Malawi	(3) Mali	(4) Nigeria	(5) Uganda
Has internet access		-0.0431* (0.0256)		-0.0622*** (0.0208)	
Has Facebook account	-0.0707*** (0.0264)	-0.0157 (0.0265)		-0.0165 (0.0217)	
Respondent is male	-0.0290 (0.0313)	0.0840*** (0.0247)	0.0407 (0.0533)	0.107*** (0.0212)	0.0188 (0.0183)
Lives in urban area	-0.0972*** (0.0259)	-0.0508** (0.0248)	0.0579* (0.0337)	0.00148 (0.0195)	-0.0237 (0.0176)
Years of education	-0.00339 (0.00223)	-0.00399 (0.00273)	-0.0002 (0.0035)	-0.00558** (0.00283)	0.00215 (0.00213)
Age group of respondents = 2, 30-59 yrs	0.0382 (0.0398)	0.0383 (0.0279)	0.0670 (0.0555)	-0.0156 (0.0249)	-0.0397* (0.0211)
Age group of respondents = 3, 60+yrs	0.0827* (0.0497)	0.0438 (0.0393)	-0.0313 (0.0714)	-0.0556 (0.0386)	-0.00122 (0.0255)
Household head	0.0434 (0.0339)	0.0342 (0.0287)	-0.0875 (0.0594)	0.00903 (0.0279)	-0.0164 (0.0209)
hhsiz	0.00117 (0.00352)	0.00693 (0.00484)	-0.00530 (0.00431)	0.000237 (0.00461)	0.00717** (0.00354)
Expenditure quintile = 2	0.0307 (0.0437)	-0.0423 (0.0412)	0.0579 (0.0514)	-0.0522 (0.0346)	-0.0290 (0.0243)
Expenditure quintile = 3	-0.0531 (0.0457)	-0.0720* (0.0408)	0.0469 (0.0525)	-0.0674** (0.0297)	-0.0613** (0.0239)
Expenditure quintile = 4	-0.0642 (0.0454)	-0.0896** (0.0396)	-0.0728 (0.0599)	-0.0998*** (0.0277)	-0.0859*** (0.0247)
Expenditure quintile = 5	-0.134*** (0.0498)	0.0117 (0.0398)	-0.1051* (0.0611)	-0.131*** (0.0298)	-0.0708*** (0.0261)
Observations	2,750	4,507	1,697	3,330	4,201
Pseudo R2	0.102	0.0251	0.0214	0.0755	0.0244

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Policy implications



Acceptance generally high but need to turn intent into active demand



Variation in vaccine acceptance over time suggests that high levels of acceptance should not be taken for granted



Need for ongoing information and communications campaigns aimed at resolving safety and side-effects concerns



Country-specific clusters of hesitancy

Need for more data collection

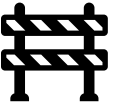


A new phase of LSMS-supported HFPS on COVID-19 in 2021/2022, will field re-designed module on vaccines

Some things new modules will focus on:



Gauge *active* demand for vaccines and main motivations



Identify key constraints to access vaccines



Study information channels and sources



Look into transmission of vaccine attitudes and intra-household decision making on vaccine uptake



Gauge support for vaccine mandates

Additional Resources



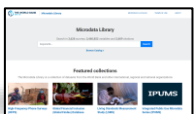
Articles

- Paper on wave 1 vaccine acceptance results published in *BMJ Open*: [Kanyanda et al. \(2021\)](#)
- Methodological papers on bias adjustment in phone survey data: [Brubaker et al. \(2021\)](#); [Ambel et al. \(2021\)](#)
- Viewpoint paper on lessons-learned from the HFPS: [Gourlay et al. \(2021\)](#)
- Paper analyzing other socio-economic outcomes covered in the HFPS: [Josephson et al. \(2021\)](#)



Blogs

- Blog posts on results from vaccine module for [wave 1](#) and wave 2
- COVID-19 effects on [labor](#), [food security](#), and [agriculture](#) based on HFPS data
- Country-specific blog posts on other modules: [Burkina Faso](#), [Malawi](#), [Nigeria](#), Uganda ([W1](#), [W2](#), [W4+5](#))



Data

- [High Frequency Phone Survey \(HFPS\) collection](#) in the World Bank Microdata Library
- [LSMS-ISA household survey collection](#) in the World Bank Microdata Library



Background

- Further information and resources on LSMS-supported High Frequency Phone Survey on the [LSMS webpage](#)

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Thank you for your attention!

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Estimated acceptance rates in repeated cross section

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Vaccine Acceptance by Survey Wave		
Country	Wave 1	Wave 2
Burkina Faso (1: Dec 20; 2: May - Jun 21)	79.5% (76.9 to 82.1)	68.2% (63.9 to 72.5)
Ethiopia (1: Sep 20; 2: Feb 21)	97.9% (97.2 to 98.6)	96.6% (95.4 to 97.7)
Malawi (1: Oct - Nov 20; 2: Apr 21)	82.7% (80 to 85.4)	73.6% (70.3 to 76.9)
Mali (1: Oct - Nov 20)	64.5% (61.3 to 67.8)	
Nigeria (1: Oct - Nov 20; 2: Feb 21)	86.2% (83.9 to 88.5)	83.4% (80.7 to 86.2)
Uganda (1: Dec 20; 2: Feb 21)	84.5% (82.2 to 86.8)	88.4% (86.4 to 90.5)