Low-Skilled Liberalizers: Support for Free Trade in Africa

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Abstract Despite populist backlash against globalization in advanced industrialized countries, developing countries have recently sought to liberalize trade. To shed light on this phenomenon, we investigate mass attitudes toward free trade in thirty-six African countries. Using two rounds of Afrobarometer data and original survey data from Ghana and Uganda, we find that individuals hold views that are consistent with their economic self-interest. As factor endowment models predict for a sample of skill-scarce countries, low-skilled individuals are more likely than high-skilled individuals to support free trade. Moreover, the strongest negative effects of skill occur for the most skill-scarce countries in the sample and are driven by individuals in the labor force. Our results are robust to measuring variables more precisely in original surveys and controlling for other factors thought to shape attitudes. The findings indicate that previous evidence against factor endowment models may have partially resulted from inadequate data from the developing world.

Globalization is under fire in advanced industrialized economies.[1] But while the United States was withdrawing from the Trans-Pacific Partnership, rewriting the North American Free Trade Agreement, and launching a global trade war, developing countries were opening their borders. Developing countries are responsible for the majority of regional free trade agreements that have been signed since Brexit.[2] These trends are particularly strong in Africa. The African Continental Free Trade Area, which came into force in 2021, was signed by fifty-four African countries, making it the largest new free trade area since the creation of the World Trade Organization in 1994. This historic agreement embodies the idea that intraregional trade liberalization is the way for African economies to grow and lift millions out of poverty.

1. Approval for this study was obtained from the Institutional Review Board of Princeton University (no. 6368).
2. WTO Regional Trade Agreements Database.

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This discrepancy in trade policies between the global North and the global South motivates us to investigate how explanations for mass attitudes toward trade apply to the developing world. Economists and political scientists have long turned to factor endowment models to explain variation in support for trade. Specifically, they argue that individuals support trade when they hold a relatively abundant factor of production. In relatively capital-abundant (developed) countries, high-skilled individuals, who have high levels of human capital, should support free trade because their country specializes in products requiring skilled labor. In contrast, in capital-scarce (developing) countries, low-skilled individuals should support free trade because their country specializes in products requiring unskilled labor.

Initial evidence from the United States and Europe strongly supported the first prediction, but tests of the second have been challenging, and the results mixed. Cross-national surveys heavily overrepresent developed countries.[3] Analyses of the few developing countries in these samples find little evidence of the predicted negative relationship between skill and support for free trade—instead showing a null or even positive relationship.[4] These findings have given rise to what Margalit calls the "education puzzle"—why would skilled individuals prefer the free movement of goods even in skill-scarce economies?—and have reinforced a shift in the literature away from the factor endowment model.[5]

We argue that these debates have relied on evidence that underrepresents developing countries, but evidence from developing countries is needed to understand current events. We use data from two rounds of the Afrobarometer to analyze cross-national attitudes toward trade in thirty-six developing countries; we then use detailed original survey data from Ghana and Uganda to examine these patterns more precisely. Consistent with canonical models, we observe a negative and statistically significant relationship between education and support for trade, with the strongest negative relationship in the most skill-scarce countries and driven by labor force participants. We conclude that global observational evidence is not as inconsistent with factor endowment models as previously thought: African voters seem to be motivated by their economic interests.

Explaining Attitudes Toward Trade

What explains variation in support for free trade? For this, political economists have turned to the canonical Heckscher–Ohlin factor endowment model. The theory holds that countries export goods that intensively use factors with which they are abundantly endowed. Therefore, owners of an abundant factor of production benefit

3. Mayda and Rodrik 2005; O'Rourke and Sinnott 2006.
4. Baker 2005; Beaulieu, Yatawara, and Wang 2005; Mayda and Rodrik 2005.
5. Margalit 2012.

from free trade, while owners of a scarce factor of production lose. And because skilled labor, which involves human capital, is relatively abundant in developed countries but scarce in developing countries, it predicts that free trade benefits high-skilled workers in the developed world and low-skilled workers in the developing world. This prediction, known as the Stolper–Samuelson theorem, has led political scientists to expect support for free trade from high-skilled workers in the developed world and low-skilled labor in the developing world.[6]

Evidence for the factor endowment model is mixed. Consistent with the theory, education (a proxy for skill) positively and significantly predicts support for free trade in advanced industrialized economies.[7] Initially, survey data appeared to also support the idea that the relationship between skill and support for trade was stronger for skill-abundant than for skill-scarce countries. Using cross-national data from the International Social Survey Programme, Mayda and Rodrik find that education is associated with pro-trade views in skill-abundant countries but anti-trade views in skill-scarce countries.[8]

However, these data include very few skill-scarce countries, and the only negative relationship they observe is for the Philippines. Excluding skill-scarce countries limits the data in two ways: we observe too few low-skilled workers to conduct robust subnational analysis; and we observe too few skill-scarce countries to conduct robust cross-national analysis.

Efforts to include more skill-scarce countries in cross-national analysis have weakened support for Heckscher–Ohlin. Mayda and Rodrik and Baker examine patterns in the World Values Survey, which includes Bangladesh, Nigeria, Pakistan, India, and China.[9] For these relatively skill-scarce countries, there appears to be no relationship between education and trade attitudes. Using survey evidence from 1990s Latinobarometro surveys, Beaulieu, Yatawara, and Wang observe a positive relationship between skill and support for free trade for their sample of seventeen developing countries in Latin America.[10] However, more recent studies involving data from one or a few developing countries have found greater support for trade among low-skilled or low-caste individuals.[11]

Many scholars have tried to explain the mixed evidence for these models. For example, Baker argues that individuals are driven by their consumption preferences rather than their factor endowments.[12] But explanations increasingly emphasize non-

6. Alt and Gilligan 1994; Rogowski 1987. Following previous works, we use "skill-abundant" and "skill-scarce" to refer to countries that are relatively more or less abundant in human capital, a factor of production.
7. Scheve and Slaughter 2001a, 2001b.
8. Mayda and Rodrik 2005.
9. Baker 2005; Mayda and Rodrik 2005.
10. Beaulieu, Yatawara, and Wang 2005.
11. Gaikwad and Suryanarayan 2019; Jamal and Milner 2013, 2019.
12. Baker 2003.

economic factors.[13] Many argue that education could impact attitudes not through labor markets but through learning, culture, and out-group anxiety.[14]

Without challenging the significance of non-economic factors, we claim that economic models have not received fair tests. Beaulieu, Yatawara, and Wang wrote, "The main hurdle in resolving this debate is that the countries examined in the literature to date are limited in the coverage of developing countries."[15] There has been little improvement since their effort. We introduce new data to test the old predictions, specifically:

H1: In skill-scarce countries, low-skilled individuals are more likely than high-skilled individuals to support free trade.

H2: In countries that are relatively more skill abundant, the gap between low-skilled and high-skilled individuals is smaller or may even reverse, with high-skilled individuals supporting trade more than low-skilled individuals.

We note that if non-economic factors do lead educated individuals in all countries to hold more pro-trade preferences, then these factors could dominate economic factors and limit our ability to find evidence for Hypothesis 1. This makes Hypothesis 2 a more reliable test of Heckscher–Ohlin.

Hainmueller and Hiscox offer a third hypothesis: These patterns should be strongest for individuals who are employed or actively seeking work because they are the ones affected by labor market dynamics.[16] However, individuals not in the labor market could also exhibit the relationships expected in Hypotheses 1 and 2, as they may expect future employment or reside in households with similarly skilled labor force participants. We examine this hypothesis but find it a somewhat less compelling test of Heckscher–Ohlin.

H3: The relationship between skill and support for free trade will be strongest for individuals in the labor force.

If these hypotheses are supported, this simply means that the cross-national evidence is more consistent with economic models than scholars previously thought. We think it a significant contribution to test the most straightforward but controversial economic models using newly available data from an often overlooked, low-income continent. However, we do not claim that non-economic factors are unimportant or provide evidence on the mechanisms of Heckscher–Ohlin at work.

13. Economic explanations are primarily invoked when trade is especially salient—for example, Autor, Dorn, and Hanson 2016; Dancygier and Donnelly 2012; Malhotra, Margalit, and Mo 2013; Margalit 2011.
14. Hainmueller and Hiscox 2006, 2007; Mansfield and Mutz 2009.
15. Beaulieu, Yatawara, and Wang 2005, 943.
16. Hainmueller and Hiscox 2006.

Support for Factor Endowment Models from Afrobarometer

We use data from two rounds of the Afrobarometer.[17] The countries included in the survey account for about 85 percent of Africa's GDP and 75 percent of its population.[18] This region generally exports raw materials and intermediate goods (e.g., fuels and foods, which use low-skilled labor and land) and imports consumer and capital goods.[19] Afrobarometer avoids conducting surveys in countries with poor security conditions and limited freedom of expression. While the countries it does include tend to be more democratic and have greater freedom of expression than other African countries, they do not trade more or less than the excluded countries (see Table A2 in the appendix).

We first use data from Round 6 (2015–2016), which asked individuals in thirty-six countries about their attitudes toward the free movement of goods and people. This question reads: "Which of the following statements is closest to your view? Statement 1: People living in [West/South/East/North/Central] Africa should be able to move freely across international borders in order to trade or work in other countries. Statement 2: Because foreign migrants take away jobs, and foreign traders sell their goods at very cheap prices, governments should protect their own citizens and limit the cross-border movement of people and goods." We refer to this as support for globalization, and following previous studies, we dichotomize it, where 1 indicates openness to globalization (statement 1) and 0 indicates aversion to globalization (statement 2).[20] We omit responses of *don't know, agreed with neither, refused*, and *missing*, although our results are robust to modeling these responses.[21] Overall, 61 percent of Round 6 respondents support globalization (see Figure A1 in the appendix). However, this question wording conflates attitudes toward trade with attitudes toward migration. Specifically, respondents may fixate on whether traders should be allowed from neighboring countries (south–south migrants).

The Round 8 (2019–2021) questionnaire asks more precisely about trade attitudes in thirty-four countries, using this language: "Statement 1: In order to develop, our country must rely on trade with the rest of the world, including by opening our borders to foreign imports. Statement 2: In order to develop, our country must rely on local production and protect local producers from foreign competition."[22] We refer to this variable as support for free trade, and in the Round 8 sample it came to 51 percent (Figure A1).

17. Afrobarometer 2017.
18. Authors' calculations using World Development Indicators.
19. Worldwide Integrated Trade Solution.
20. Hainmueller and Hiscox 2006; Mayda and Rodrik 2005; Scheve and Slaughter 2001b.
21. Kleinberg and Fordham 2018. See Tables A24–A27. About 5 percent answered "don't know," similar to 4 percent for the comparable International Social Survey Programme question in 2013.
22. About 2 percent responded "don't know," which we omit as before.

Following previous work, we use education as a proxy for individual skill.[23] First, we use an ordinal measure of education.[24] Education may capture more than just skill, as individuals may acquire economic knowledge or more cosmopolitan worldviews when they attend college. In the United States, this appears as a nonlinear effect of obtaining a college education.[25] We use dummy variables to test for nonlinearity.

Round 8 also includes the support-for-globalization question that appears in Round 6. Support for globalization and support for free trade are highly correlated (Table A31). This improves our confidence that support for globalization, which we must rely on for our Round 6 analysis, is a proxy for support for free trade.

To test the cross-national implications of the factor endowment model, we require a measure of the country's relative abundance of skilled labor. Following Mayda and Rodrik and others, we use logged GDP per capita,[26] taken from the World Development Indicators for 2014 and 2019, the years immediately preceding each round of data collection. Afrobarometer asks whether individuals are employed, looking for work, or not looking for work.[27]

As in nearly all previous studies, we estimate results using binary probit models. We regress the dummy dependent variable (support for globalization or trade) on education, controlling for age, gender, rural, and country fixed effects.[28] We cluster standard errors by region to account for relevant spatial correlation related to border regions and trade routes.

To test H1, we pool each sample and estimate the relationship between education and our outcome measures. The results appear in Tables 1 (Round 6) and 2 (Round 8). In the full sample (model 1), more educated individuals are significantly less supportive of globalization (Round 6) and of free trade (Round 8). Since Afrobarometer countries are skill scarce, this is in line with the expectations of the Heckscher–Ohlin model. This offers strong support for H1, as we observe a negative relationship in a very large sample of respondents from skill-scarce countries across two different survey rounds.

We also find support for H3. Factor endowment models expect the relationship between skill and attitudes to be strongest for labor market participants. Consistent with this theory, in Round 6, our main finding is driven by individuals who are

23. Education has a normal distribution. Plots of this and all education/skill variables appear in the appendix.

24. Levels 1–10 are, in order, No formal schooling, Informal schooling only, Some primary schooling, Primary school completed, Some secondary school / high school, Secondary school / high school completed, Postsecondary qualifications, Other than university, Some university, University completed, and Postgraduate.

25. Hainmueller and Hiscox 2006.

26. Mayda and Rodrik 2005.

27. Respondents report their occupations separately. Students and homemakers mostly identify as looking for work or not looking for work, but some are employed. Consistent with Hainmueller and Hiscox 2006, we include these students and homemakers using the employment status they provide.

28. Other relevant covariates, including political knowledge, import duties, and union membership, are unavailable.

employed (Table 1, models 2–4). In Round 8, our main finding is driven by individuals who are actively looking for work (Table 2, models 2–4). In neither round do we have significant results for individuals not looking for work. As theory expects, the results are driven by those for whom wage concerns exist.

Next, we investigate nonlinearity in the relationship between education and our outcomes. We do not find evidence consistent with Hainmueller and Hiscox's claims about trade attitudes that are learned through attending college.[29] The only nonlinearities we observe are for completing primary school, and these exist only in Round 6 (Table 1, models 5–8). We believe education is a proxy for skill, not learned attitudes, in this sample.

Does the negative relationship between skill and support for trade vary with the country's relative factor endowment? Table 3 tests Hypothesis 2 by interacting GDP per capita with the main education variable.[30] The Stolper–Samuelson theorem predicts a positive coefficient on this interaction term, suggesting that the observed negative effect of skill attenuates (or becomes positive) for countries that are more abundant in skilled labor. In both rounds, this coefficient is positive and statistically significant.

Figure 1 plots the relationship between education and our outcome variables by country GDP per capita. Visually, we observe a positive relationship between GDP per capita and the size of the coefficient on education. In each round, we observe negative and statistically significant coefficients for four to eight countries and positive and statistically significant coefficients for just three to five relatively richer countries. This is a relatively small number of countries in which it is possible to observe, in isolation, the negative relationship between skill and support for trade. Nevertheless, the positive slope of these figures is expected by factor endowment models, supporting Hypothesis 2.

In the appendix, we check two alternative measures of skill endowment: the ratio of skilled to unskilled labor within the country,[31] and the intensity with which the country's top export utilizes skilled labor.[32] The Round 6 findings are similar, but the Round 8 findings are not robust to alternative (cruder) measures of skill intensity.[33] We also provide a cursory test of whether landowners in land-abundant countries are more supportive of globalization.[34] We also present results for the Round 8 question on globalization: while we find support for Hypothesis 2, we do not for Hypotheses 1 and 3. We discuss these findings and why they do not undermine our confidence in the factor endowment model in the appendix (Section 3.4). We also discuss pandemic-related considerations in the appendix Table A28.

29. Hainmueller and Hiscox 2006.
30. Full results by employment status and with nonlinearities appear in the appendix.
31. Barro and Lee 2013.
32. Shirotori, Tumurchudur, and Cadot 2010; Worldwide Integrated Trade Solution.
33. See Tables A8 to A11.
34. See Tables A12 and A13.

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TABLE 1. *Education predicts support for globalization (Round 6)*

	Dependent variable							
	Support for globalization (0–1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EDU.	−0.011**	−0.014*	−0.007	−0.009				
	(0.005)	(0.008)	(0.009)	(0.008)				
PRIMARY					−0.082***	−0.131***	−0.067*	−0.058*
					(0.021)	(0.038)	(0.037)	(0.034)
SECONDARY					0.014	−0.025	0.031	0.045
					(0.025)	(0.038)	(0.043)	(0.042)
ANY HIGHER ED.					−0.017	0.003	−0.098	0.083
					(0.035)	(0.044)	(0.072)	(0.079)
COLLEGE					0.036	0.056	0.117	−0.094
					(0.037)	(0.048)	(0.084)	(0.078)
FEMALE	−0.030**	−0.016	−0.037	−0.039*	−0.031**	−0.022	−0.038	−0.036
	(0.013)	(0.022)	(0.028)	(0.023)	(0.013)	(0.022)	(0.028)	(0.023)
Sample	Full	Employed	Looking	Not looking	Full	Employed	Looking	Not looking
Observations	49,447	19,355	11,547	18,370	49,447	19,355	11,547	18,370

Notes: Regressions use binary probit models to estimate the relationship between education and support for globalization. Controls include age, gender, rural, and country fixed effects. Standard errors are clustered at the region level. Observations are weighted using Afrobarometer's COMBINWT variable. (*Source:* Afrobarometer.)

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TABLE 2. *Education predicts support for free trade (Round 8)*

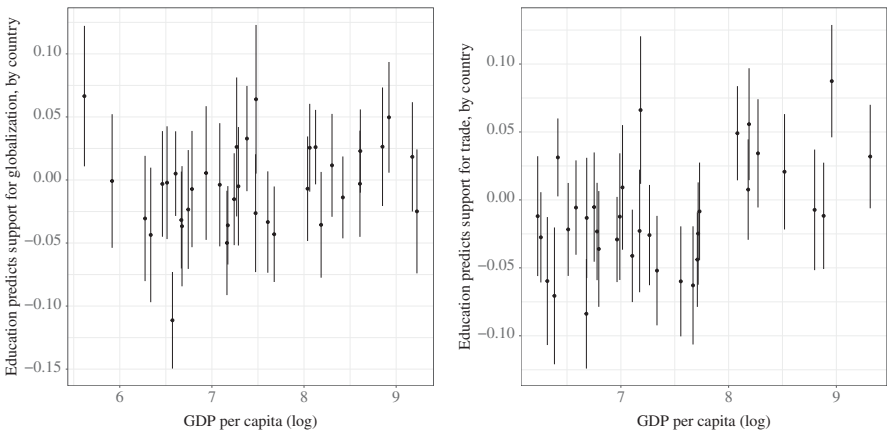
	Dependent variable							
	Support for free trade (0–1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EDU.	−0.012**	−0.007	−0.020**	−0.004				
	(0.005)	(0.007)	(0.008)	(0.008)				
PRIMARY					−0.022	−0.018	−0.026	−0.013
					(0.021)	(0.032)	(0.039)	(0.029)
SECONDARY					0.018	0.018	−0.013	0.059
					(0.024)	(0.036)	(0.041)	(0.041)
ANY HIGHER ED.					−0.082*	−0.057	−0.150**	−0.034
					(0.042)	(0.057)	(0.072)	(0.070)
COLLEGE					0.025	0.025	0.065	−0.018
					(0.049)	(0.068)	(0.078)	(0.084)
FEMALE	−0.032**	−0.044	−0.045*	−0.022	−0.029**	−0.042	−0.044*	−0.019
	(0.015)	(0.030)	(0.026)	(0.024)	(0.015)	(0.030)	(0.026)	(0.023)
Sample	Full	Employed	Looking	Not looking	Full	Employed	Looking	Not looking
Observations	46,200	15,723	12,056	18,325	46,200	15,723	12,056	18,325

Notes: See notes for Table 1. Observations are weighted by using Afrobarometer's within-country weighting variable and standardizing so that all countries are weighted as if they have equal populations (replicating the combinwt variable). (*Source:* Afrobarometer.)

TABLE 3. *Cross-national test of factor endowment model*

	Dependent variable	
	Support for globalization (0–1) (1)	Support for free trade (0–1) (2)
EDU.	−0.102*	−0.193***
	(0.055)	(0.058)
EDU. ×GDP_{pc} (log)	0.012*	0.025***
	(0.007)	(0.008)
GDP_{pc} (log)	−0.751***	−1.315***
	(0.039)	(0.039)
Sample	Round 6	Round 8
Observations	48,395	46,200

Notes: See notes for Tables 1 and 2. Standard errors are clustered by country. *$p < .1$; **$p < .05$; ***$p < .01$.
Sources: Afrobarometer and World Development Indicators.



Support for globalization (Round 6) Support for free trade (Round 8)

Notes: Each point indicates the coefficient obtained from a country-specific regression, and the bar indicates the 95 percent confidence interval. Regressions are identical to those in Tables 1 and 2, model 1, but subset to a single country, and therefore omit country fixed effects. We do not cluster standard errors because there are few regions per country.
Sources: World Development Indicators and Afrobarometer.

FIGURE 1. *Relationship between skill and support for globalization and trade by country factor endowment*

Overall, cross-national and pooled patterns in Afrobarometer data are highly consistent with canonical factor endowment models. Education negatively predicts support for trade, and the relationship is strongest for skill-scarce countries and people in the labor force. Our findings are generally linear, suggesting education reflects skill rather than culture.

Nevertheless, education is an imperfect proxy for skill. In the appendix, we show that the findings generally hold when we code skill using an individual's occupation or income.[35] These measures, however, make assumptions about individuals' work or compensation, so in the next section we measure skill directly by fielding original surveys in two countries.

Additional Evidence from Ghana and Uganda

We have illustrated a robust negative relationship between skill and support for globalization in thirty-six African countries, as well as cross-national patterns that accord with factor endowment models. This large sample benefits cross-national claims especially, but we are constrained in our measure of skill. We therefore complement the Afrobarometer data with original survey data collected in Ghana and Uganda.

Ghana has the eleventh highest annual GDP per capita (USD 1,670) in the Afrobarometer sample, while Uganda sits lower, in twenty-third place (USD 661). These two countries, in different regions—Ghana in West Africa and Uganda in East Africa—are neither extremes nor identical in their economic development relative to other countries in Afrobarometer. While Ghana is wealthier than Uganda, both are poor and skill scarce. Ghana's top exports are stone and glass, fuels, and food products, and Uganda's are vegetables, stone and glass, and food products.[36]

We draw on data from convenience samples in Ghana in 2016 and Uganda in 2017, as well as a national survey in Uganda in 2018. (The surveys are similar but not identical, and the sampling procedures appear in the appendix.) Descriptive statistics suggest that the samples are similar to the Afrobarometer samples in terms of age, gender, education, poverty, and national identification.[37] But there are far fewer agricultural workers than in national surveys, and these individuals might be most supportive of free trade. Nevertheless, we benefit from the ability to measure skill more precisely than does the Afrobarometer, even if in just a convenience sample.

We also measure individuals' attitudes toward trade. The dependent variable is the extent to which individuals agree with the statement, "It should be easier for other countries to buy and sell their goods and services in [COUNTRY]." Again, we

35. See Tables A14–A16 and A17–A18, respectively. Also see Hainmueller and Hiscox 2006; Mayda and Rodrik 2005; O'Rourke and Sinnott 2006; Scheve and Slaughter 2001b.

36. Worldwide Integrated Trade Solution.

37. See Tables A32, A40, and A48.

code individuals as a 1 if they somewhat or strongly agree with this statement. The overall level of support for free trade is 75 percent in Ghana in 2016, 60 percent in Uganda in 2017, and 78 percent in Uganda in 2018.

We first use education as a proxy for skill. This variable is constructed almost identically as in Afrobarometer.[38] We also measure skill directly, which Afrobarometer does not.[39] Individuals are asked about the duties their job requires of them. We create an ordinal variable with a value of 1 if the individual lists no duties, manual labor only, or owning a business;[40] 2 for clerical or computer duties; and 3 if they are managing others. Since this measure pertains to an individual's job, it exists for employed individuals only.[41]

These variables allow us to again test Hypothesis 1.[42] Again, we estimate results using binary probit models. We regress the dummy dependent variable on education/skill and controls including age, gender, religion, ethnicity, and political knowledge. We cluster standard errors by the largest geographic cluster available, the constituency, which is unavailable in the 2018 Uganda survey. Since we cannot replicate the geographic sampling, controls, and clustering from the earlier analysis, any differences could result from these elements. Full results are reported in the appendix, and we summarize our findings later, using the Afrobarometer results for these two countries as a benchmark.

Figure 2 presents the relationship between education and attitudes toward trade in our original samples. In both countries, we recover similar findings to Afrobarometer regarding education.[43] In Ghana, we replicate the negative and significant coefficient on education we found in Afrobarometer, and it is even stronger than it was there.[44] In Uganda, the coefficient on education is insignificant, as it was in the Uganda samples of the Afrobarometer.[45] Overall, the Afrobarometer results are replicated in an original survey.

Figure 2 illustrates how our results change with an alternative measure of skill. In both Ghana and Uganda, skill negatively predicts support for free trade.[46] The relationship is even stronger for skill than it is for education. This suggests that education

38. Levels 1–8 are, in order, No schooling, Some primary, Completed primary, Some secondary school, Completed secondary, Some university or polytechnic, Completed university or polytechnic, and Completed postgraduate training. The last level does not exist in the Uganda 2018 survey.

39. In the appendix, we present results when we use income as a proxy for skill; see Tables A36, A44, and A52.

40. Business owners in this context are more likely to be informal microentrepreneurs than they are to be formal business owners with administrative skills.

41. Information about this variable and missingness appears in Figures A4 and A5.

42. While we do measure individuals' employment status, there are too few individuals who are not at all in the labor force to permit us to test Hypothesis 3.

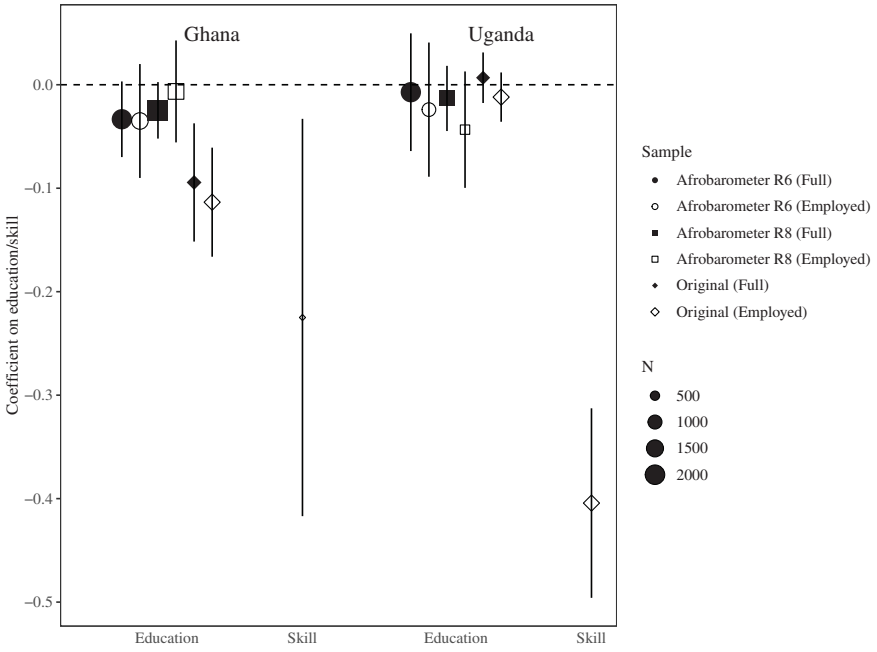
43. Factor endowment models would expect a stronger negative relationship between skill and trade attitudes for Uganda than for Ghana because it is more skill scarce. But any draw of two countries from thirty-six will result in too much noise to test a cross-national hypothesis.

44. See Table A34.

45. See Table A42.

46. See Tables A35 and A43.

may be a proxy for more than just skill in Uganda, and this caused us to observe some null effects. Although this finding is for only two countries, it implies that, if anything, the cross-national Afrobarometer findings understate the negative relationship between skill and support for free trade.



Notes: Each point indicates the coefficient obtained from a single regression, and the x-axis indicates the independent variable (education or skill). In Ghana, the skill measure was asked for only a subset of all employed individuals. Uganda data are from the 2017 survey only; the 2018 survey did not include this measure. Standard errors are clustered at the region for Afrobarometer and the constituency for the original surveys. (*Source*: Authors' data and Afrobarometer.)

FIGURE 2. *Comparing measures of education and skill*

Public opinion on trade is sensitive to question wording. In the Uganda 2018 survey, we include a second measure of support for free trade by asking, "Do you favor or oppose placing new limits on imports?" (with 1 for favor and 0 for oppose). The results are identical and inverse when we frame our outcome measure differently (Table 4). This adds to our confidence that individuals understand how trade works.

In factor endowment models, individuals are well-informed, rational, self-interested economic actors who accurately anticipate the distributional consequences of free trade. Although several studies cast doubt on the validity of these assumptions in the US and Europe, we find moderate evidence for them in

TABLE 4. *Comparing the relationship between education and trade attitudes across measures (Uganda 2018)*

	Dependent variable	
	Support for free trade (0–1) (1)	Support for limiting imports (0–1) (2)
EDU.	−0.054**	0.058***
	(0.023)	(0.022)
AGE	0.005*	−0.005*
	(0.003)	(0.003)
FEMALE	−0.129*	0.042
	(0.072)	(0.067)
Controls	Ethnicity	Ethnicity
Observations	1,670	1,654

Notes: Regressions use binary probit models to estimate the relationship between education and trade attitudes. Unlike in the other original surveys, religion and political knowledge were not asked, so they are not included as controls. Standard errors are not clustered, as geographic data are missing. *$p < .10$; **$p < .05$; ***$p < .01$. (*Source:* Authors' data.)

Africa.[47] The Uganda 2018 survey investigates respondents' beliefs about the consequences of free trade. Although high- and low-skill (education) groups hold fairly homogeneous beliefs about how free trade will benefit their families, their businesses, and their economy, they diverge in expectations about the effect of free trade on jobs. High-skilled individuals are more likely to believe that free trade causes layoffs, while low-skilled individuals are more likely to believe that free trade creates jobs (Figure 3). These are accurate perceptions, according to Heckscher–Ohlin.

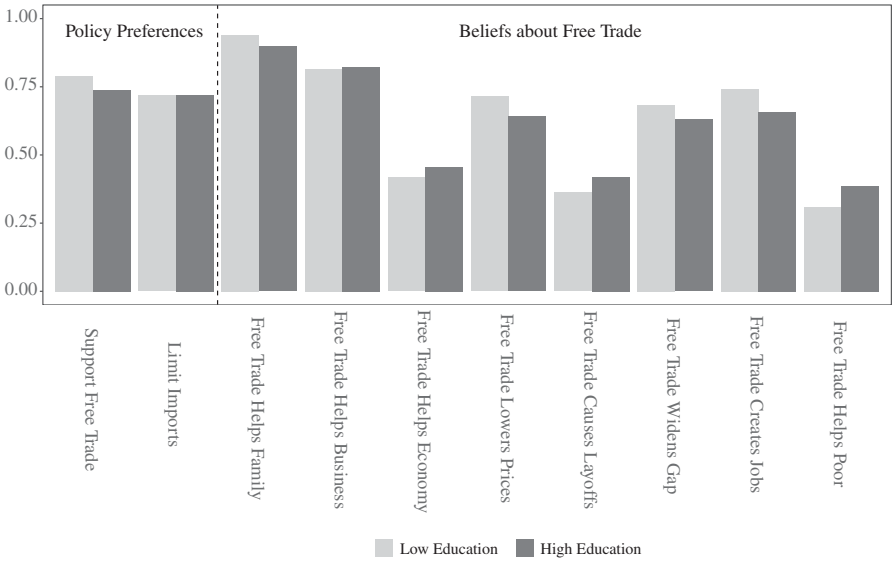
Addressing Alternative Explanations

We address alternative explanations by controlling for variables thought to predict support for globalization and/or free trade. We present the complete tables in the appendix and summarize our findings in Table 5.

First, our results are robust to controlling for price sensitivity. Baker claims that individuals want the low prices associated with globalization, which is why some in the developing world support free trade.[48] Ugandans expect free trade to lower prices, and low-skilled individuals are more likely to believe this (Figure 3). However, this explanation carries the most weight when there is a large middle class that consumes traded durable goods, and the middle class in Africa remains

47. See, for example, Guisinger 2017; Rho and Tomz 2017.
48. Baker 2003.

small.[49] If this explains our result, then our finding should disappear when we control for how individuals feel about prices. Using an Afrobarometer question about how well the current government is doing at keeping prices down, our findings hold.[50] Thus we do not believe our results are explained by consumption dynamics.



Notes: N = 1,692. Authors' data.

FIGURE 3. *Beliefs about free trade (Uganda 2018)*

Second, we test whether our results are driven by public-sector employees. Many countries in the developing world have large public sectors that disproportionately absorb high-skilled workers; trade liberalization could contract these sectors, so this could account for our finding that high-skilled workers tend to oppose free trade. In Afrobarometer and Uganda (though not Ghana), we do find that public-sector workers are higher-skilled. However, there is still substantial variation in skill among public-sector employees, so we simply control for whether an individual is a public-sector employee. Doing so does not affect our main findings.[51]

Third, we test whether political connections explain our findings. Individuals with ties to the regime, usually educated, may oppose trade liberalization that jeopardizes their preferential treatment. Our Ghana and Uganda surveys ask whether an individual is involved in a community association, has held political office, or has a family

49. Shimeles and Ncube 2015.
50. See Tables A20 and A21.
51. See Tables A1, A19, A37, A45, and A53.

member who held political office. Controlling for these variables does not change our results.[52]

TABLE 5. *Summary of controls added to test alternative explanations*

	Alternative explanation			
	Consumption	Public sector	Political connections	Non-economic
Afrobarometer	Price sensitivity	Public sector		National identity Ethnocentrism Xenophobia Support for democracy
Ghana (2016)		Public sector	Community ass'n membership Held political office Family held political office	National identity National pride
Uganda (2017)		Public sector	Community ass'n membership	National identity
Uganda (2018)		Public sector		

Note: Results were robust to inclusion of all above controls.

Fourth, there are non-economic factors. While several cultural variables significantly predict support for globalization, including them in our models does not weaken the significance of education/skill. Following Mayda and Rodrik, we consider national identification,[53] ethnocentrism, xenophobia, and support for democracy.

In the Afrobarometer analysis, we control for these variables (Tables A22 and A23). When individuals identify nationally rather than ethnically, they are somewhat more likely to support globalization in Round 6, but behave no differently from others in Round 8. Individuals who are more ethnocentric or xenophobic are less likely to support both globalization and trade, while democracy supporters are more likely.

Even when these non-economic factors are included, the factor endowment model performs admirably. Education negatively and significantly predicts attitudes toward globalization, and this result is stronger when controlling for these cultural factors. The interaction term between education and GDP per capita remains positive and significant.

We perform similar checks on the original surveys, where we have some limited data on national identification and national pride. Again, our core findings are not sensitive to including these variables.[54]

In all the surveys, we observe a relatively weaker effect of gender than is observed in advanced industrialized countries, where women are generally less supportive of

52. See Tables A38 and A46.

53. Meaning whether the individual identifies more with their ethnic or their national identity, similar to Mayda and Rodrik 2005.

54. See Tables A39 and A47.

free trade. In Round 6, women are somewhat more averse to globalization then men (Table 1), but this is model dependent, and there is no gender effect in Round 8 (Table 2). In Uganda, we see only weak gender effects in the 2017 employed sample and the 2018 full sample, and they are not robust.[55] There is no gender effect in the original survey in Ghana.[56] Gender may play a less important role in shaping trade preferences in African countries.

We are unable to test two other leading economic theories of trade preferences. One is the Ricardo–Viner model of free trade, where individuals' preferences are shaped by the sector in which they are employed rather than their skill endowment. We lack a measure of the industry of employment precise enough to determine whether individuals are in exporting versus import-competing industries (see the appendix for further explanation). Collecting this granular industry-level information (as Jamal and Milner do) is costly, but should be a priority for future research.[57]

We are also unable to address the so-called New New Trade Theory, which holds that preferences over free trade are determined by the extent to which the firm an individual works for participates in global value chains (GVCs). If a firm imports inputs from other countries in order to produce products it subsequently exports, then its employees should favor free trade to support these linkages. But Africa lags the world in GVC integration, and GVC integration there is currently on the decline rather than the upswing. Within Africa, Ghana and Uganda are below average in the percentage of foreign value added in exports, with Ghana having almost none.[58] Given such low overall levels, we find it unlikely that any minimal variation that exists within the country would explain the patterns we observe.

The support we find for Heckscher–Ohlin is noteworthy because there are many critiques, not only of Heckscher–Ohlin's power to explain public opinion, but also of the underlying economic theory and its applicability to Africa. First, Heckscher–Ohlin assumes inter-industry labor mobility. While systematic data on labor mobility tend to cover only OECD countries,[59] it does seem that switching costs between industries are higher in sub-Saharan Africa than elsewhere.[60] Without the ability to switch industries, it is puzzling why trade would affect people according to their factor ownership. Second, the presence of a large informal sector may complicate the predictions of Heckscher–Ohlin if there are high switching costs between the informal and the formal sector. In Ghana, 80 percent of workers are employed informally, and switching costs are high.[61] Third, trade liberalization may have actually increased the skill premium in developing countries, contrary to

55. See Tables A42 and A50.
56. See Table A34.
57. Jamal and Milner 2019.
58. Dollar and Kitter 2017.
59. Hwang and Lee 2014.
60. Artuc, Lederman, and Porto 2015; Clemens 2010.
61. Burger and Fourie 2019; Osei-Boateng and Ampratwum 2011.

Heckscher–Ohlin.[62] Numerous explanations have been proposed. For example, African countries may have faced pressure from wealthier economies to selectively liberalize low-skill products more than high-skill products. Regardless, the rising skill premium leads some to expect that trade will benefit relatively skilled workers in developing countries, contrary to Stolper–Samuelson.[63]

We are sympathetic to these critiques, and they make our results all the more interesting. We are not able in the scope of this paper to reconcile the logic of Heckscher–Ohlin with the context of African countries or to defend its predictions about the distributional effects of liberalization. What we show is that African public opinion exhibits the patterns we would observe if Heckscher–Ohlin did perform well in Africa and if individuals did base their attitudes toward trade on their positions in the economy, and alternative theories of public opinion are unable to account for these patterns. We find the strength and robustness of our findings surprising and hope future research will explain them in light of these objections.

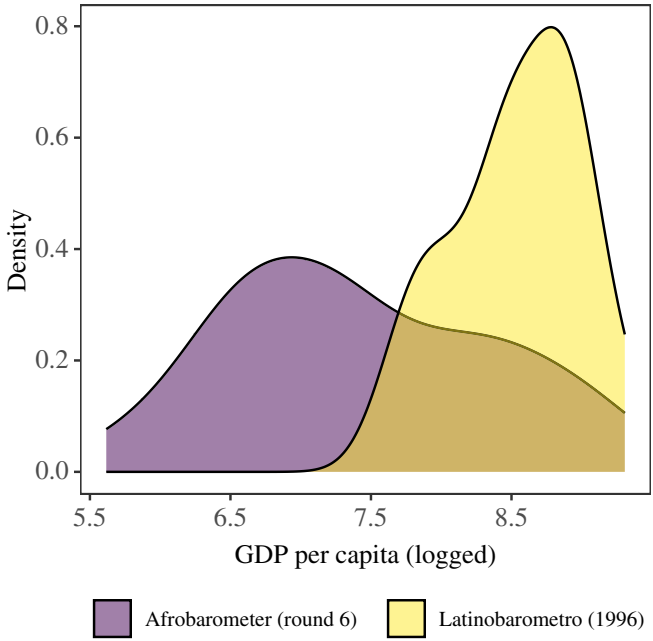
Conclusion

Overall, public opinion data in Africa are strikingly consistent with the predictions of factor endowment models. In this skill-scarce sample, it is low-skilled individuals who are more likely than high-skilled individuals to support globalization and trade. These results are somewhat stronger for individuals who are engaged in the labor market, for whom wage concerns may matter most. Cross-national patterns within this sample support the predictions of trade theory: the negative effect we observe attenuates for the relatively higher-skilled countries in the sample. While we recognize the possibility of measurement error with regard to skill and public opinion, the magnitude of our finding increases when we use alternative measures in original surveys.

Without challenging the claim that non-economic factors matter for attitudes toward globalization, we show that public opinion data are more consistent with economic models than previously thought. Scholars had concluded that skilled workers support globalization even in skill-scarce economies, a significant mark against factor endowment models. This claim was primarily advanced by Beaulieu, Yatawara, and Wang, who in focusing on Latin America in the 1990s provided evidence from a more skill-scarce sample than the United States or Europe.[64] But even this sample is wealthy when compared to an African sample (Figure 4). Previous cross-national studies may have been unable to find cross-national evidence to support Heckscher–Ohlin because there was insufficient variance in skill. In leveraging multiple sources

62. Ackah, Morrissey, and Appleton 2012; Bigsten and Durevall 2006; Goldberg and Pavcnik 2007; Sánchez-Páramo and Schady 2003.
63. Menendez, Owen, and Walter 2023.
64. Beaulieu, Yatawara, and Wang 2005.

of data from this part of the world, we illustrate that once the sample is skill scarce enough, the expected negative effect does show up, and the patterns are consistent with economic expectations.



Notes: Density plots show the distribution of national income for the 36 countries in the Afrobarometer sample and the 17 countries in the Latinobarometro sample used by Beaulieu, Yatawara, and Wang 2005. The African sample is substantially poorer than the Latin American sample. Data on the Africa sample are from the World Development Indicators (using 2014 as the year), and data on the Latin American sample are from the numbers reported by Beaulieu, Yatawara, and Wang (they do not note the specific year of measurement, presumably 1996). Accounting for inflation would further separate these samples. (*Source*: World Development Indicators.)

FIGURE 4. *Benchmarking the national income distribution of each sample*

If Heckscher–Ohlin correctly describes the distributive effects of trade in Africa, then how is it that Africans' preferences align so closely with their economic interests? There is substantial evidence from the United States and Europe that high-skilled workers fail to support globalization that benefits them, so why might Africans better adhere to an economic logic? We offer some preliminary thoughts before leaving this question to future research.

First, elites may introduce frames that highlight class-based interests to their citizens. This is in contrast to the cultural frames politicians use to talk about trade and immigration in Europe and the United States. For example, Tanzanian presidential candidate John Magufuli told supporters at a 2015 campaign rally that opening

Tanzania's borders to boost trade with other countries would top his agenda.[65] Future research should explore whether these issues are salient in other African elections.

Second, individuals in Africa may behave more "rationally" than those in advanced industrialized countries. Being relatively new to liberalization, Africans may evaluate the costs and benefits of these policies in more purely economic terms. There is growing evidence of economically sophisticated behavior among populations living in poverty.[66] Baseline levels of political knowledge in the Ghana and Uganda surveys are much higher than in the United States. In the 2016 Ghana survey, 56 percent of respondents correctly named (in an open-ended response) the chief justice of the Supreme Court of Ghana. In the United States in 2012, only 34 percent of US citizens identified the chief justice of the US Supreme Court in a multiple-choice question.[67] In the 2017 Uganda survey, 89 percent correctly named the speaker of Parliament without prompting, compared with 62 percent of US citizens who correctly selected the speaker of the US House in a multiple-choice question.[68] The high level of political knowledge in this sample is consistent with our claim that attitudes toward globalization stem from individuals' knowledge of their own self-interest.[69]

These results boost our optimism about the virtuous cycle that may follow from the spread of democracy in Africa. Milner and Kubota argue that democratization can foster globalization because it tends to enfranchise low-skilled workers who benefit from free trade.[70] We have shown that these low-skilled workers hold the political preferences they should, and we expect them to vote accordingly. Perhaps societal preferences and public awareness of the benefits of trade are what allowed a trade agreement as historic as the African Continental Free Trade Area to come into effect.

More research is needed to understand how democracy and public attitudes interact to shape trade policy in other regions. While there are some findings similar to ours from the Middle East and India,[71] we know of few studies of trade preferences in Asia more broadly. In other regions, such as Latin America, trade may contribute to labor market polarization, with both high- and low- (but not medium-) skilled workers benefiting from trade and its ensuing technological upgrading. Additional research from a mix of regions will help make sense of these global patterns. In any case, our study suggests that greater democratization in the global South may open the door to lowering economic barriers, even while populism in the global North is erecting them.

65. Alvar Mwakyusa and Nelly Mtema, "Magufuli Vows to End Longido, Arumero Land, Border Disputes," *All Africa*, 7 October 2015.

66. For example, de la Cuesta et al. 2021 find that Ugandans can estimate even the hidden taxes they pay.

67. Dost 2015.

68. Pew Research Center 2017.

69. For a differing perspective, see Rudra, Nooruddin, and Bonifai 2021, who argue that low-skill workers in developing countries are in a "honeymoon phase" with globalization's ability to promote economic mobility.

70. Milner and Kubota 2005.

71. See Jamal and Milner 2013 and Gaikwad and Suryanarayan 2019, respectively.

Data Availability Statement

Replication files for this research note may be found at <https://doi.org/10.7910/DVN/ENO2J6>.

Supplementary Material

Supplementary material for this research note is available at <https://doi.org/10.1017/S0020818323000206>.

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Key Words

Globalization; trade; factor endowment models; Africa; surveys

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