Urban Gender Equality

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In 1950, 29.6 percent of the world's population lived in a city. Today, more than half do.[1] This dramatic shift in where humans live reflects in part the significant urban premium for a wide variety of outcomes, ranging from wages to education. In this project, I systematically investigate how the experience of city life varies between men and women and the resulting implications of urbanization for gender inequality. Across 180 countries, I examine how outcomes vary across men and women in cities and rural areas using a range of data sources and measures of living standards. Across most outcomes—with the notable exception of domestic violence—urban life is associated with improved well-being for women. These relative gains persist conditional on aggregate household earnings, and coefficient stability analyses hint at an important role for the treatment effect of cities. These level gains do not always translate to reduced gender inequality, however, as often urban men experience equal if not greater relative increases in these key domains.

The goal of this exercise is to empirically capture the reduction in outcomes across genders associated with cities, or what I refer to as the "urban gender premium." To measure this object, I estimate the econometric specification in equation 1. For outcome Y_i observed for individual i in country $c(i)$ at time $t(i)$, $\mathbf{X}_i$ is a vector of individual covariates, g_i equals 1 if the individual is a woman, u_i denotes that the individual lives in a city, ψ_c and ϕ_t are country and time fixed effects, and ε is the error term. All standard errors reported are robust to heteroskedasticity. The coefficient of interest γ measures the baseline urban premium and β captures how women's outcomes differentially vary in cities.

$$Y_i = \alpha + \beta g_i \times u_i + \delta g_i + \gamma u_i + \psi_{c(i)} + \phi_{t(i)} + \varepsilon_i \tag{1}$$

Interpreting this specification through a causal framework is difficult because households living in cities may be differentially selected. Understanding whether urban environments

[1] This statistic is calculated based on country-specific urban definitions as aggregated by the United Nations World Urbanization Prospects (2018).

have a true treatment effect nevertheless remains critical for policy. To make progress on separating out the role of selection, I conduct coefficient stability tests of the main results following (Oster, 2019). In particular, by systematically examining how the primary coefficients β and γ and the explanatory power of the model jointly vary with the inclusion of individual covariates, I can estimate alternative treatment effects under assumptions about the relative importance of the observed and unobserved characteristics and the maximum potential R-squared under all omitted variables. This exercise relies on the observed covariates impacting both the outcome variable Y_i and the treatment variable u_i in the same directions as the unobserved covariates. In the baseline specification, I assume equal relative importance of the observed and unobserved factors and a maximum explanatory power equal to 1.3 times the R-squared of the saturated regression, following the recommendation of (Oster, 2019). These results—while suggestive about the potential role of selection—should nevertheless be interpreted with caution with respect to the causal effect of urban environments.

How might cities impact outcomes differentially by gender? One important channel that warrants particular attention is the role of income effects. Urban residents may experience different outcomes due to the higher earnings associated with city life rather than any direct features of the urban environment *per se*. In particular, under diminishing marginal utility of resources within gender, rising incomes in cities would reduce disparities between men and women. When possible, I directly compare outcomes for rural and urban households with the same annual income to examine scope for these income effects.

The definition of "city" itself creates challenges as it varies across both time and place. Following the United Nations World Urbanization Prospects (2018), I largely defer to the country-specific definitions of urban environments, which can use criteria based on population thresholds, density, administrative categorization, or even demographics. Even within a dimension, definitions across countries can vary widely: for instance, according to UNWUP, among those countries that use population thresholds, the cut-off for an urban settlement ranges from 200 to 50,000. For further specific details on the city definitions used in each dataset, see Appendix Section A.

Schooling Achievement

To assess how urban environments shape educational quality by gender, I use test score data on mathematics, reading, and science performance from the OECD's Programme for International Student Assessment (PISA). Many other dimensions of schooling—such as abuse from teachers or peers—are crucial for student welfare, but unfortunately reliable cross-country data on these measures does not exist. Pooling the 2015 and 2018 rounds, my analysis includes test score performance for 1,054,190 15-year-old children across 85 countries.

I assign urban status to the 70.25 percent of children who attend school somewhere larger than "a village, hamlet, or rural area (fewer than 3,000 people)" and larger than a small town (3,000 to 15,000 people) according to the PISA school survey.[2]

Two important drawbacks limit the external validity of the PISA sample. First, like all of the largest international standardized tests (Patel and Sandefur, 2019), PISA largely excludes poor countries. Second, students not enrolled in school are excluded from the sampling design, though this potential selection issue is much less relevant given the bias in the sample of countries towards those where the vast majority of 15-year-olds are enrolled.

Given the item response theory structure of the PISA exams, I estimate this set of regressions taking into account the multiple plausible values from the test score data within each subject (science, mathematics, and reading). I calculate standard errors using balanced repeated replication. The baseline specification pooling across countries includes country, birth year, and survey year fixed effects. To examine coefficient stability, I include fixed effects for mother's and father's education and country by year by wealth index ventile fixed effects where the wealth index is calculated by combining an item response theory model with a country-specific vector of household asset ownership.

The core results can be seen non-parametrically in Figures 4, 5, and 6, which plot test scores by gender and school community size after absorbing country and year fixed effects. For all subjects, educational achievement is monotonically increasing with the community size. For math and science (but much less so for reading), the gains associated with city life are *larger* for boys. These same patterns are quantified in Table 1, which shows that on average across all countries, living in urban areas is associated with a statistically significant lower gain in test scores for girls than for boys. This is true across all three subjects, though the increase in gender inequality associated with cities is largest in mathematics. The magnitudes of these effects suggest that girls experience less than three quarters of the gains in educational achievement from urban schools. On the PISA scale, one point corresponds to 0.01 standard deviation (σ) across all students, so the average coefficient across all countries associated with living in cities remains relatively low ($\approx .3\sigma$). Despite the fact that in rural areas, girls typically score better than their male peers on academic tests, this baseline gap is insufficient to offset the gender disparity from cities, leading to a greater gender gap associated with urbanization.

Are better test scores due to the higher incomes households experience in cities? Figures 7, 8, and 9 provide visual evidence that income effects cannot fully explain the patterns. For the poorest households, little difference exists between the educational achievement of urban and rural children. Yet moving along the wealth distribution, the urban test score

[2] The results are unchanged when I include small towns in the urban definition.

premium steadily grows. Conditional on the same set of assets, children living in richer urban households perform substantially better. These patterns are consistent for both girls and boys. Nevertheless, differential selection across locations could still drive the effects. Indeed, applying bounds from (Oster, 2019) cannot rule out null results, as shown in the bottom rows of table 1.

Anthropometric Health Outcomes

Increased risk of disease has often been a particular concern associated with the density of urban environments, yet cities may also confer health benefits through, for instance, differential access to healthcare or infrastructure (Alsan and Goldin, 2019). To examine the potential gender differences in health associated with cities, I use the Demographic and Health Surveys. This data have several advantages, notably that all outcomes are consistently measured across time and place and care is taken to accurately elicit anthropometric data.[3] Notably, however, the sample coverage excludes all rich countries. I examine three outcomes: height as measured in centimeters, weight in kilograms, and body mass index. I winsorize each of these outcomes to the 1st and 99th percentiles. My focus on these measures as opposed to other health outcomes is that they are simply and easily measured for both men and women. The final sample includes data on the weights of 2,044,582 individuals, the heights of 2,043,756 people, and 2,040,607 BMI measurements covering 36 countries. Of this sample, 34.77 percent live in an urban area, which the DHS classifies according to country-specific definitions. See Appendix Section A for further details. The baseline regression includes country, age, and year fixed effects, and specifications with controls additionally includes country by asset index quintile by year fixed effects.

The main results can be shown non-parametrically in Figures 1, 2, and 3. These binned scatter plots present the health outcome against the wealth asset index separately by gender and urban status after absorbing country, year, and age fixed effects. Conditional on their household wealth, women are equally tall in rural and urban areas, but in the binned scatter plot, men are taller in rural areas across the wealth distribution. Weight tells a different story. While men are essentially equally heavy conditional on their wealth in cities and in rural areas, women weigh significantly more in cities throughout the distribution. The net effect of these patterns is a considerably higher body mass index for urban women relative to rural women, whereas there is no striking difference for boys.

The regression equivalent of these results presented in Table 5 paint a mixed picture for the health outcomes of urban women when pooling all countries together. In this sample

[3] For instance, in Nigeria, only two percent of random remeasurement cases had a height difference greater than one centimeter.

of developing countries, urban areas are systematically associated with increased height and weight. After controlling for income, however, the magnitude of these coefficients falls substantially. Looking at heterogeneity by gender, urban women are both relatively heavier and relatively shorter, leading to a substantial increase in their body mass index. To the extent that women are typically undernourished, these results suggest women experience relatively greater health gains of city life. Yet at the same time, the patterns of height suggest that stunting and malnutrition may in fact be even greater problems for urban women.

Domestic Violence

Rates of domestic violence are disturbingly high around the world. Using data from the Demographic and Health Surveys, I assess how cities are differentially associated with rates of sexual violence, severe and less severe physical violence, emotional violence, and threats by women's partners or husbands. I also estimate a within-country first principal component of these indicators for domestic violence. The final sample spans 32 countries and 1,198,820 women, of whom 34.45 percent live in a city.

Table 7 presents regression tests of how rates of domestic violence vary between rural and urban areas. Across all measures, women systematically experience increased rates of sexual and physical violence in the home in cities when pooling across countries.

Gender Attitudes

I use data from four rounds of the World Values Survey spanning 1999 to 2020 to measure variation in gender attitudes across places. The sample includes 248,099 respondents across 86 countries, of whom 62.73 percent live in cities. I classify urban status at a country-specific level holding the population thresholds constant across years within country whenever possible. See Appendix Section A for further details. I recode all questions to binary indicators where higher values are more progressive gender norms. When multiple response options were available, I divided results as close to the median as possible. The attitudes I consider (the availability of which vary across waves) include: "when jobs are scarce, men should have more right to a job than women", "do you think that a woman has to have children in order to be fulfilled or is this not necessary?", "a working mother can establish just as warm and secure a relationship with her children as a mother who does not work", "if a woman wants to have a child as a single parent but she doesn't want to have a stable relationship with a man, do you approve or disapprove?", "on the whole, men make better [political leaders/business executives] than women do", "a university education is more important for a boy than for a girl", and "when a mother works for pay, the children suffer". The baseline specification pooling across countries includes country, birth year, and survey year fixed effects. To examine coefficient stability, I include fixed effects for country by World Values Survey wave by income bin fixed effects.

Looking across all countries, for nearly all norms, cities are associated with more progressive attitudes, as shown in Tables 2 and 3. This pattern masks heterogeneity across domains for the interaction of women and cities, however. Urban women are relatively more likely to agree that priority over scarce jobs should be given to men yet systematically have more progressive views when it comes to working mothers and single parenthood. Further, they are less relatively likely to say that men make better political leaders or business executives than women. These coefficients tend to get larger with the additional inclusion of country by survey wave by income bin fixed effects, suggesting that differential selection into cities is not driving the results.

Age at First Marriage

Age at first marriage is among the most important determinants of women's welfare around the world. To examine this outcome, I use the Demographic and Health Surveys. I winsorize age at first marriage to 14 and 40 years old, leaving me with a final sample spanning 40 countries including 2,202,512 women and their age at first marriage, of whom 33.05 percent live in urban areas. Table 6 shows that women systematically marry at an older age on average in cities than in rural areas. This coefficient does fall significantly after controlling for country by year by income quintile fixed effects, suggesting that selection into cities could play an important role.

Female Circumcision

Female circumcision is perhaps the most widespread physical abuse of girls around the world. To measure how this practice varies in cities, I use data from the Demographic and Health Surveys spanning 18 countries including 581,115 women, 38.01 of whom live in cities. Table 6 shows that on average, women in cities are less likely to have been circumcised by about 6 percentage points across all countries. This statistically significant relationship does not hold after including country by year by income quintile fixed effects.

Empowerment and Decision-Making

A key indicator of women's welfare is their agency in their own lives. To measure this decision-making power, I use three questions from the Demographic and Health Surveys.

First, I build a dummy equal to 1 if the woman is involved in the decision about whether she works outside the home (including if it is a joint decision between the woman and her husband or partner). Second, among women who worked in the last 12 months and were paid in cash or in cash and in kind, I create a binary variable indicating if it is usually the woman who makes decisions regarding how the income she earns is spent. Finally, I consider whether the woman usually makes decisions about her own healthcare. I also estimate a within-country first principal component of these three decisions which gives me a sample of 1,372,996 women across 38 countries of whom 34.87 live in cities. All regressions include country, age, and year fixed effects.

Table 8 presents the main results on how women's decision-making varies between urban and rural areas. Across all domains (employment, earnings, and health), urban life is associated with greater decision-making power. These results do shrink in magnitude with the inclusion of country by year by wealth asset quintile fixed effects though remain statistically significant and economically meaningful.

Freedom and Life Satisfaction

Many urban environments can be dangerous and restrictive for women's mobility, raising the potential for restricted freedom and well-being. To examine these dimensions, using the World Values Survey, I measure life satisfaction and empowerment using the questions "all things considered, how satisfied are you with your life as a whole these days?", "some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out," and "taking all things together, would you say you are very happy, quite happy, not very happy, not at all happy". I also measure subjective health using the question from the World Values Survey, "all in all, how would you describe your state of health these days?" Depending on the question, there are about 195,000 respondents in this sample.

The results shown in Table 4 show that on average across countries, women living in urban environments are systematically happier and feel more free. There is no statistically significant differential association of urban life by gender for life satisfaction. The interaction coefficient is quite stable with the additional inclusion of country by survey wave by income bin fixed effects, suggesting a limited role for selection in driving these results.

Table 1: Educational Achievement in Cities

	Math		Reading		Science	
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.336	-0.494	26.22***	26.08***	2.324**	2.160**
	(1.047)	(1.019)	(1.126)	(1.118)	(0.936)	(0.911)
Urban	33.69***	20.16***	35.78***	21.77***	31.20***	18.17***
	(1.604)	(1.396)	(1.577)	(1.424)	(1.484)	(1.319)
Female × Urban	-8.044***	-8.039***	-4.908***	-4.818***	-5.939***	-5.902***
	(1.209)	(1.167)	(1.252)	(1.206)	(1.100)	(1.049)
Rural Boys Mean	419.72	419.72	434.37	434.37	433.19	433.19
Observations	972,374	972,374	972,374	972,374	972,374	972,374
Controls		✓		✓		✓
R^2	0.34	0.43	0.30	0.39	0.31	0.40
Oster (2019): Urban		-6.47		-7.65		-6.80
Oster (2019): Female × Urban		-175.05		-164.94		-164.93

Note: Table 1 presents regression results from the 2015 and 2018 PISA rounds. Results are shown separately for math, reading, and science scores. Given the item response theory framework of PISA, all regressions are estimated using plausible values with standard errors calculated using balanced repeated replication. All regressions include country, birth year, and survey year fixed effects. Regressions with controls (columns 2, 4, and 6) additionally include fixed effects for mother's and father's education and country by year by wealth index ventile, where the wealth index is calculated combining an item response theory model with country-specific vector of household asset ownership. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. These coefficient stability results are based on regressions only using the first plausible value of students' test scores for each subject. Children are classified as urban if the school they attend is in a community larger than 15,000 people.

Table 2: Gender Attitudes and Norms

	Jobs Scarce		Needs Children		Single Parent		Working Mother	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.0970***	0.0978***	-0.0138*	-0.0151**	0.00845	0.0103	0.0458***	0.0513***
	(0.00360)	(0.00355)	(0.00708)	(0.00702)	(0.00755)	(0.00768)	(0.00817)	(0.00839)
Urban	0.0477***	0.0371***	0.0570***	0.0248***	0.0308***	0.0119	0.00700	-0.0145*
	(0.00336)	(0.00332)	(0.00718)	(0.00696)	(0.00730)	(0.00725)	(0.00759)	(0.00779)
Female × Urban	-0.0127***	-0.0105**	0.0101	0.0154	0.0328***	0.0397***	0.0346***	0.0343***
	(0.00448)	(0.00441)	(0.00983)	(0.00944)	(0.0102)	(0.0100)	(0.0103)	(0.0105)
Rural Male Mean	0.50	0.50	0.23	0.23	0.28	0.28	0.64	0.64
Observations	193,830	193,825	37,189	37,188	37,698	37,697	37,671	37,670
Controls		✓		✓		✓		✓
R^2	0.24	0.26	0.29	0.28	0.29	0.26	0.14	0.10
Oster (2019): Urban		-0.01		-0.07		-0.06		-0.06
Oster (2019): Female × Urban		-0.41		-0.31		-0.34		-0.24

Note: Table 2 presents regression results from the World Values Survey. All outcomes are binary indicators scaled such that higher values are the more progressive response. The corresponding questions for each outcome are: "when jobs are scarce, men should have more right to a job than women", "do you think that a woman has to have children in order to be fulfilled or is that not necessary", "if a woman wants to have a child as a single parent but she doesn't want to have a stable relationship with a man, do you approve or disapprove", and "a working mother can establish just as warm and secure a relationship with her children as a mother who does not work". All regressions include country, birth year, and year fixed effects. Regressions with controls (even columns) additionally include fixed effects for country by survey wave by income bin. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds in Appendix Section A.

Table 3: Gender Attitudes and Norms, Continued

	Children Suffer		University Imp.		Political Leaders		Business Exec.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.0198***	0.0202***	0.0735***	0.0733***	0.117***	0.116***	0.107***	0.106***
	(0.00442)	(0.00438)	(0.00351)	(0.00345)	(0.00420)	(0.00415)	(0.00376)	(0.00373)
Urban	0.0146***	0.00788*	0.0330***	0.0215***	0.0168***	0.00804**	0.0167***	0.00481
	(0.00426)	(0.00427)	(0.00334)	(0.00330)	(0.00399)	(0.00397)	(0.00354)	(0.00350)
Female × Urban	0.00648	0.00789	-0.00318	-0.000434	0.0155***	0.0175***	0.0131***	0.0165***
	(0.00564)	(0.00559)	(0.00432)	(0.00424)	(0.00520)	(0.00516)	(0.00473)	(0.00467)
Rural Male Mean	0.49	0.49	0.67	0.67	0.49	0.49	0.43	0.43
Observations	132,745	132,741	191,394	191,389	150,405	150,401	188,330	188,325
Controls		✓		✓		✓		✓
R^2	0.16	0.18	0.12	0.14	0.19	0.20	0.21	0.22
Oster (2019): Urban		-0.02		-0.03		-0.08		-0.08
Oster (2019): Female × Urban		-0.18		-0.28		-0.37		-0.39

Note: Table 3 presents regression results from the World Values Survey. All outcomes are binary indicators scaled such that higher values are the more progressive response. The corresponding questions for each outcome are: "when a mother works for pay, the children suffer", "a university education is more important for a boy than a girl", and "on the whole, men make better [political leaders/business executives] than women do". All regressions include country, birth year, and year fixed effects. Regressions with controls (even columns) additionally include fixed effects for country by survey wave by income bin. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds in Appendix Section A.

Table 4: Subjective Well-Being

	Life Satisfaction		Freedom		Happiness	
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.0289	0.0651***	-0.186***	-0.160***	-0.00507*	0.000918
	(0.0185)	(0.0176)	(0.0191)	(0.0186)	(0.00300)	(0.00292)
Urban	0.105***	-0.0315*	0.104***	-0.00969	0.00601**	-0.00848***
	(0.0172)	(0.0164)	(0.0178)	(0.0174)	(0.00277)	(0.00272)
Female × Urban	0.00108	0.0137	0.0889***	0.0981***	0.0138***	0.0136***
	(0.0233)	(0.0220)	(0.0240)	(0.0233)	(0.00376)	(0.00364)
Rural Male Mean	6.60	6.60	7.00	7.00	0.83	0.83
Observations	195,409	195,404	193,238	193,233	195,108	195,103
Controls		✓		✓		✓
R^2	0.13	0.20	0.08	0.12	0.06	0.11
Oster (2019): Urban		-0.33		-0.20		-0.05
Oster (2019): Female × Urban		-0.90		0.61		-0.05

Note: Table 4 presents regression results from the World Values Survey. The questions corresponding to each outcome are: "all things considered, how satisfied are you with your life as a whole these days?", "some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out," and "taking all things together, would you say you are very happy, quite happy, not very happy, not at all happy". All regressions include country, birth year, and year fixed effects. Regressions with controls (even columns) additionally include fixed effects for country by survey wave by income bin. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds in Appendix Section A.

Table 5: Anthropometric Outcomes

	Weight (kgs)		Height (cms)		BMI	
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-6.050***	-6.151***	-11.11***	-11.14***	0.560***	0.523***
	(0.0338)	(0.0329)	(0.0233)	(0.0235)	(0.0113)	(0.0112)
Urban	4.804***	0.781***	1.237***	-0.154***	1.442***	0.186***
	(0.0615)	(0.0627)	(0.0389)	(0.0408)	(0.0203)	(0.0212)
Female ×	0.156**	0.126*	-0.311***	-0.305***	0.365***	0.356***
Urban	(0.0664)	(0.0665)	(0.0413)	(0.0427)	(0.0226)	(0.0231)
Rural Male Mean	55.97	55.97	164.70	164.70	20.55	20.55
Observations	1,971,930	1,971,930	1,971,098	1,971,098	1,968,109	1,968,109
Controls		✓		✓		✓
R^2	0.33	0.39	0.39	0.41	0.28	0.32
Oster (2019): Urban		-62.49		-85.75		-18.55
Oster (2019): Female × Urban		-72.06		262.17		-20.27

Note: Table 5 presents regression results from the Demographic and Health Surveys regarding key anthropometric outcomes: weight in kilograms, height in centimeters, and body mass index. All regressions include age, country, and year fixed effects; specifications with controls additionally include country by year by income quintile fixed effects. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds used by the DHS.

Table 6: Age at First Marriage and Female Circumcision

	Age First Married		FGM/C	
	(1)	(2)	(3)	(4)
urban-rural	1.252***	0.264***	-0.0612***	0.00226
status	(0.00800)	(0.00937)	(0.00133)	(0.00174)
Rural Mean	17.57	17.57	0.57	0.57
Observations	2,004,381	2,004,381	530,142	530,142
Controls		✓		✓
R^2	0.16	0.19	0.44	0.46
Oster (2019): Urban		-0.55		0.08

Note: Table 6 presents regression results from the Demographic and Health Surveys regarding age at first marriage and female circumcision. All regressions include age, country, and year fixed effects; specifications with controls additionally include country by year by income quintile fixed effects. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds used by the DHS.

Table 7: Domestic Violence

	PCA		Sex. Viol.		Severe		Less Severe		Emot. Viol.		Threat	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
urban-rural status	0.225***	0.0841	0.00308***	0.00149**	0.00374***	0.00146**	0.00300***	0.00110*	0.00228***	0.000711	0.00259***	0.000705
	(0.0582)	(0.0701)	(0.000544)	(0.000668)	(0.000593)	(0.000647)	(0.000576)	(0.000647)	(0.000512)	(0.000595)	(0.000533)	(0.000626)
Rural Mean	-0.38	-0.38	8.99	8.99	8.99	8.99	9.00	9.00	9.00	9.00	9.00	9.00
Observations	79,906	79,903	81,620	81,617	81,683	81,678	81,559	81,554	80,695	80,690	80,755	80,750
Controls		✓		✓		✓		✓		✓		✓
R^2	0.09	0.09	0.17	0.17	0.13	0.13	0.09	0.08	0.10	0.10	0.12	0.12
Oster (2019): Urban		0.08		0.00		0.00		0.00		0.00		0.00

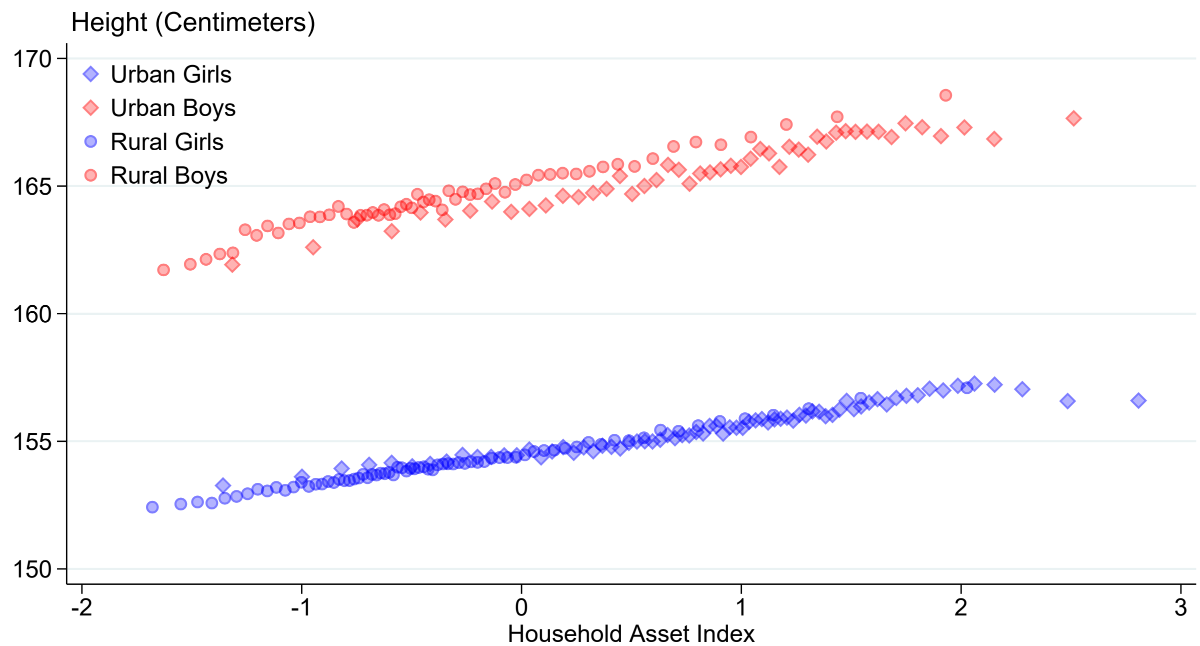
Note: Table 7 presents regression results from the Demographic and Health Surveys regarding domestic violence. All regressions include age, country, and year fixed effects; specifications with controls additionally include country by year by income quintile fixed effects. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds used by the DHS.

Table 8: Decision-Making

	PCA		Women's Work		Women's Health'		Women's Earnings'	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
urban-rural status	0.174***	0.174***	0.0830***	0.0477*	0.0716***	0.0311***	0.0605***	0.0338***
	(2.53e-16)	(9.23e-17)	(0.0141)	(0.0254)	(0.00115)	(0.00145)	(0.00121)	(0.00161)
Rural Mean	0.71	0.71	0.28	0.28	0.53	0.53	0.84	0.84
Observations	2,557,260	2,557,260	5,934	5,934	1,216,800	1,216,800	455,584	455,584
Controls		✓		✓		✓		✓
R^2	1.00	1.00	0.09	0.09	0.18	0.20	0.07	0.09
Oster (2019): Urban		0.17		-0.08		-0.01		0.00

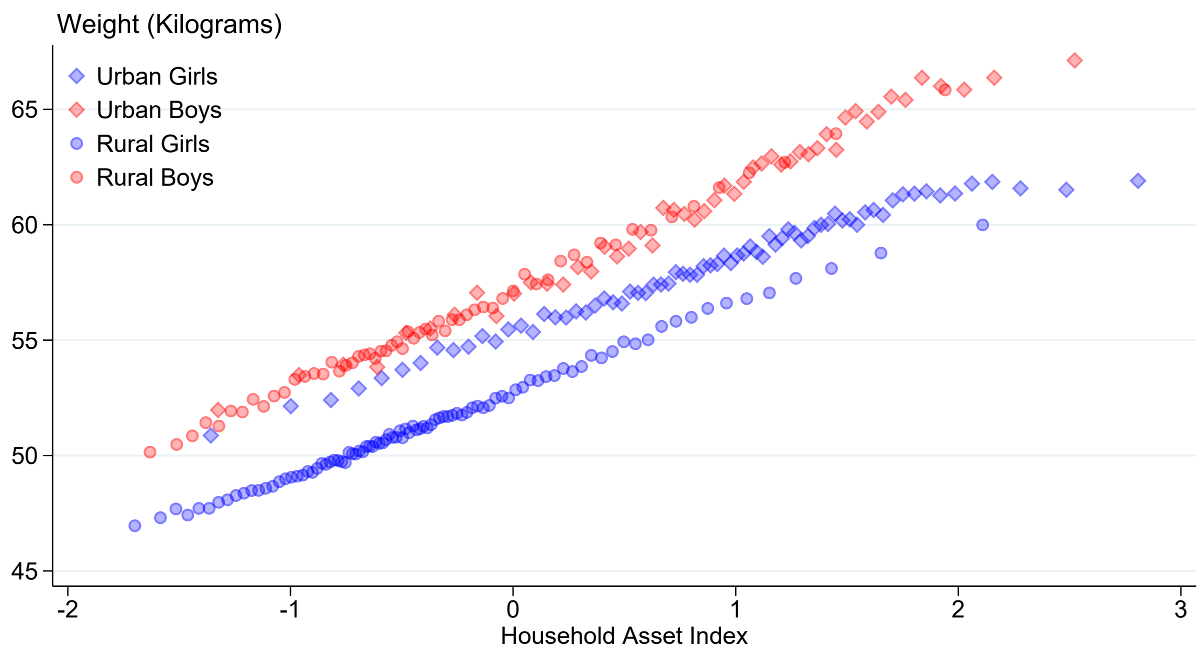
Note: Table 8 presents regression results from the Demographic and Health Surveys regarding household decision-making. All regressions include age, country, and year fixed effects; specifications with controls additionally include country by year by income quintile fixed effects. The (Oster, 2019) treatment effect estimates are based off of a maximum R-squared of 1.3 times the value in the specification with observables and an assumption of equal relative importance of the observed and unobserved factors. Respondents are classified as urban based on the country-specific thresholds used by the DHS.

Figure 1: Height and Income Relationship by Gender and Urban Status



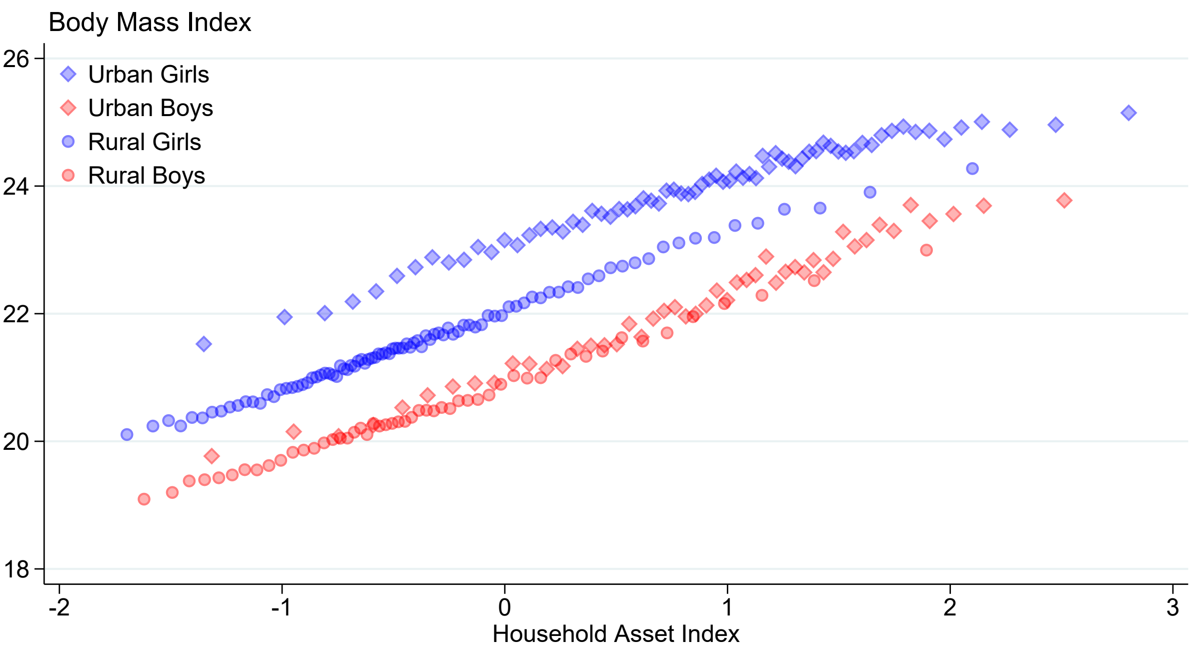
Note: Figure 1 presents a binned scatter plot of height in centimeters against a wealth asset index separately by gender and urban status in the Demographic and Health Surveys, absorbing country, age, and year fixed effects.

Figure 2: Weight and Income Relationship by Gender and Urban Status



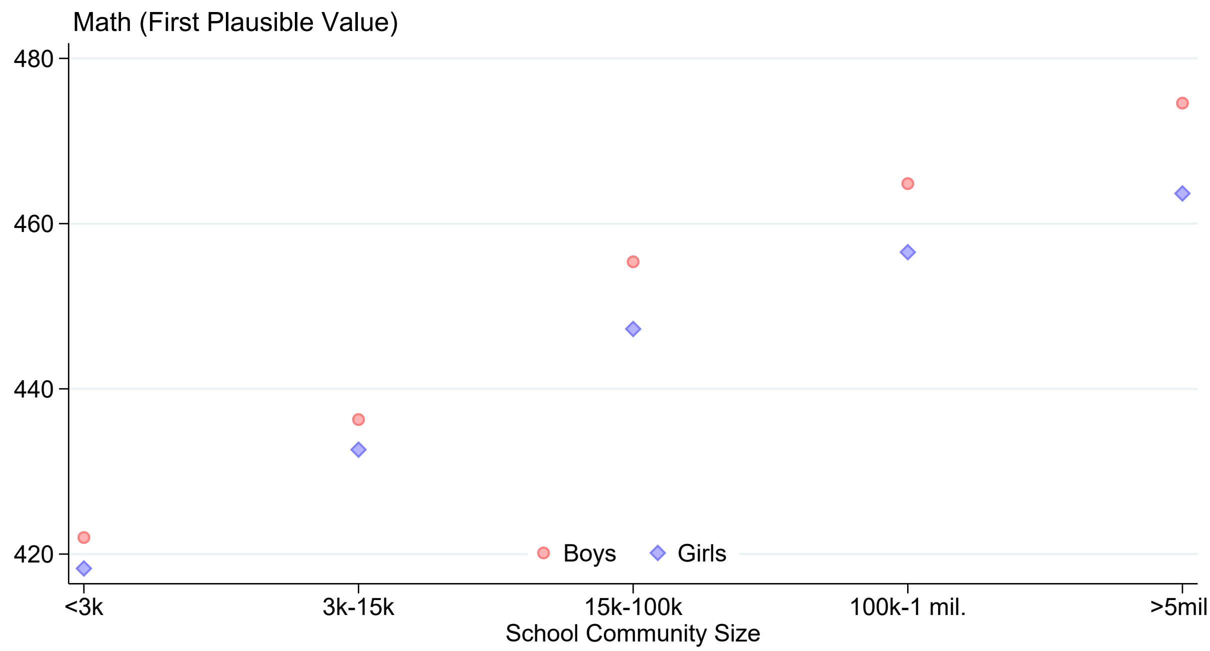
Note: Figure 2 presents a binned scatter plot of weight in kilograms against a wealth asset index separately by gender and urban status in the Demographic and Health Surveys, absorbing country, age, and year fixed effects.

Figure 3: BMI and Income Relationship by Gender and Urban Status



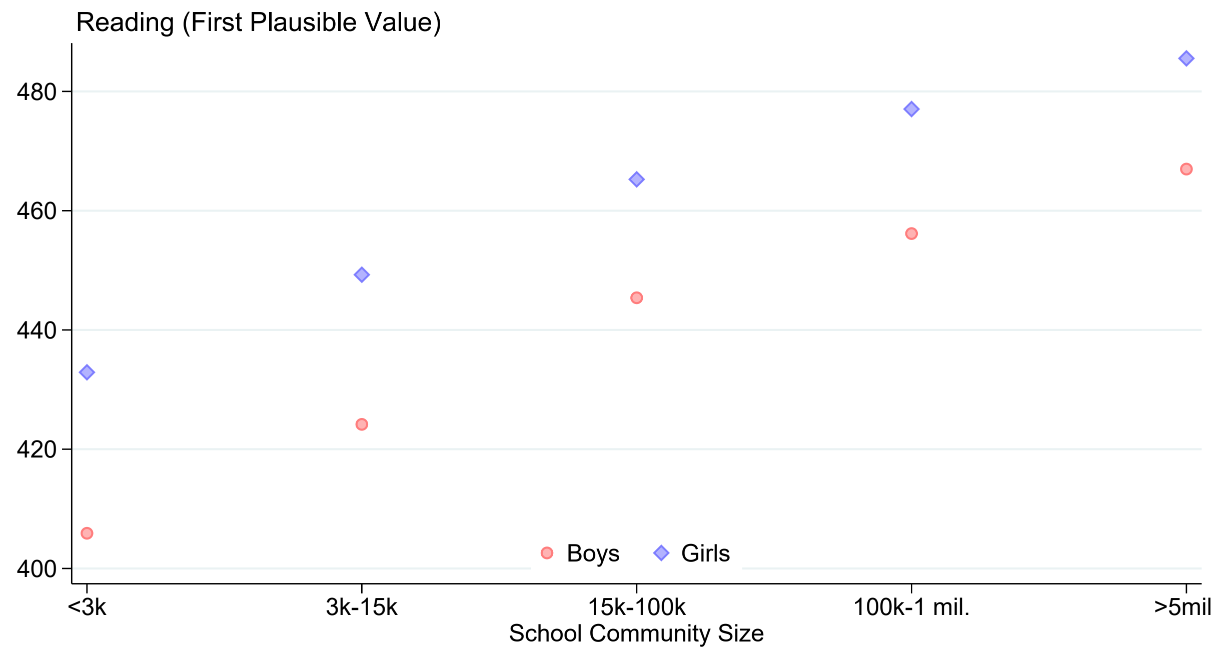
Note: Figure 3 presents a binned scatter plot of body mass index against a wealth asset index separately by gender and urban status in the Demographic and Health Surveys, absorbing country, age, and year fixed effects.

Figure 4: Math Scores by Gender and Community Size



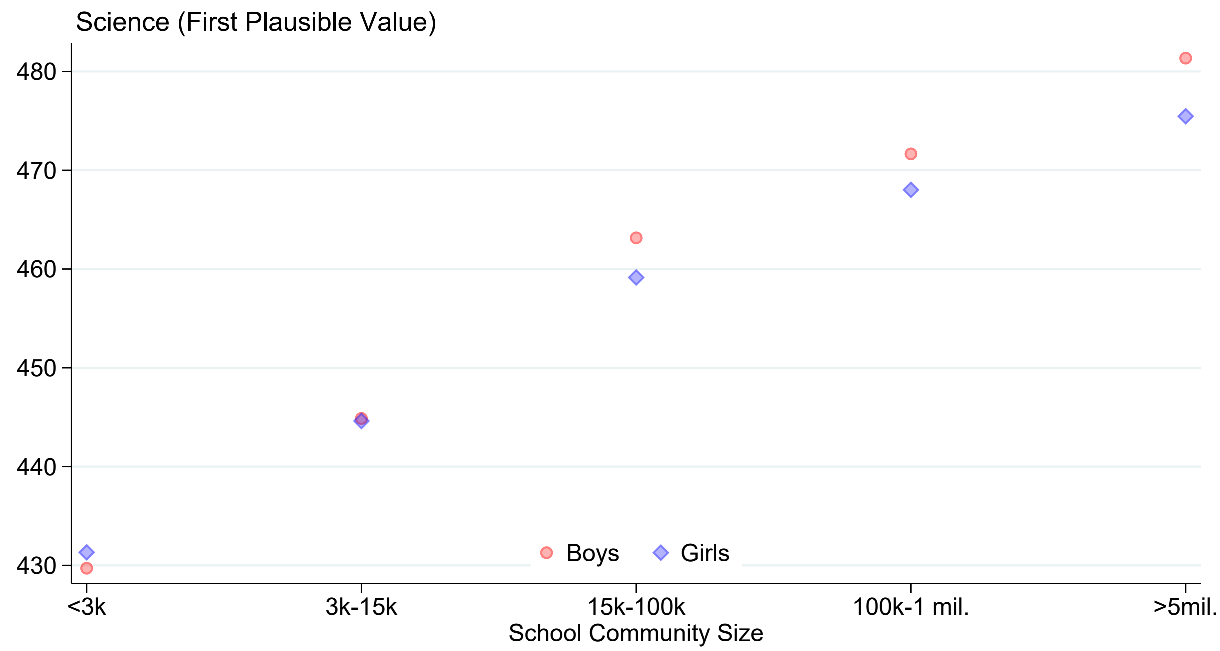
Note: Figure 4 presents a binned scatter plot of the first plausible value of math test scores against the size of the school community by gender in the PISA 2015 and 2018 rounds, absorbing country and year fixed effects.

Figure 5: Reading Scores by Gender and Community Size



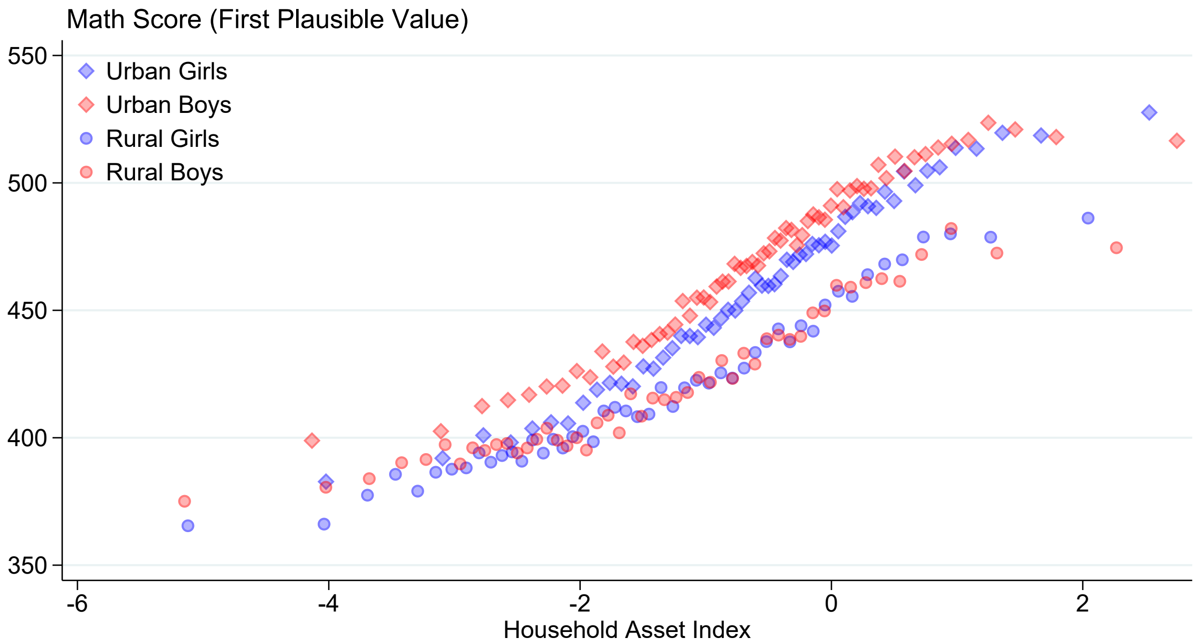
Note: Figure 5 presents a binned scatter plot of the first plausible value of reading test scores against the size of the school community by gender in the PISA 2015 and 2018 rounds, absorbing country and year fixed effects.

Figure 6: Science Scores by Gender and Community Size



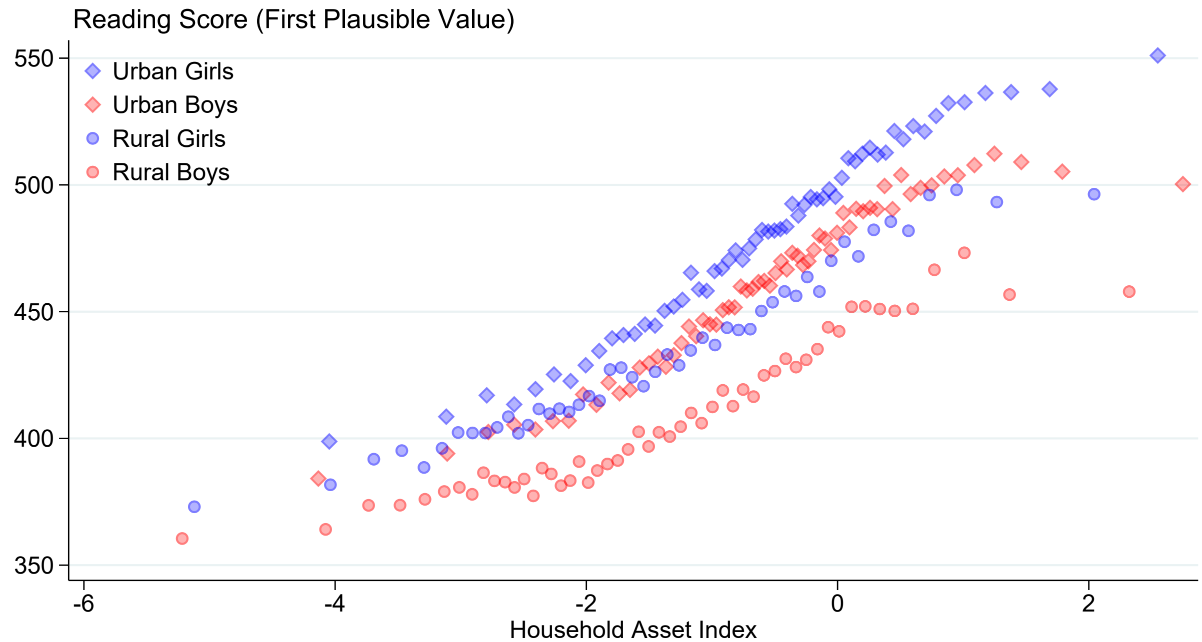
Note: Figure 6 presents a binned scatter plot of the first plausible value of science test scores against the size of the school community by gender in the PISA 2015 and 2018 rounds, absorbing country and year fixed effects.

Figure 7: Math Score and Income Relationship by Gender and Urban Status



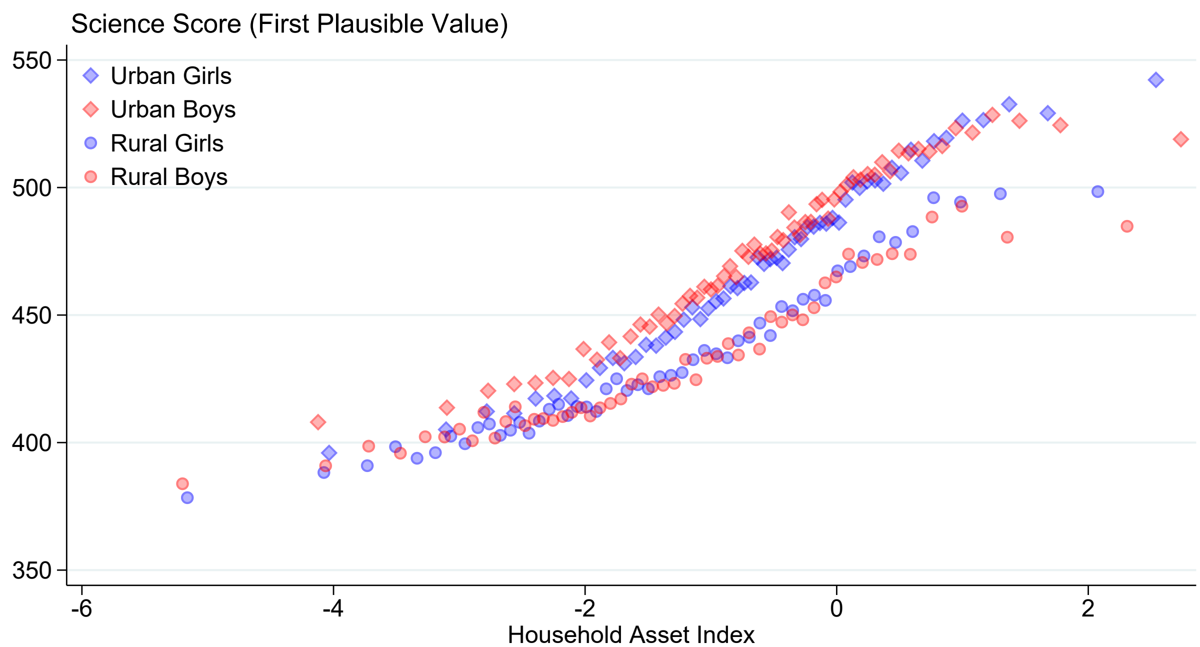
Note: Figure 7 presents a binned scatter plot of the first plausible value of math test scores against the within-country household wealth index by gender and urban status in the PISA 2015 and 2018 rounds, absorbing country and year fixed effects. The wealth index is based on an item response theory model combining country-specific household assets. Children are classified as urban if the school they attend is in a community larger than 15,000 people.

Figure 8: Reading Score and Income Relationship by Gender and Urban Status



Note: Figure 8 presents a binned scatter plot of the first plausible value of reading test scores against the within-country household wealth index by gender and urban status in the PISA 2015 and 2018 rounds, absorbing country and year fixed effects. The wealth index is based on an item response theory model combining country-specific household assets. Children are classified as urban if the school they attend is in a community larger than 15,000 people.

Figure 9: Science Score and Income Relationship by Gender and Urban Status



Note: Figure 9 presents a binned scatter plot of the first plausible value of science test scores against the within-country household wealth index by gender and urban status in the PISA 2015 and 2018 rounds, absorbing country and year fixed effects. The wealth index is based on an item response theory model combining country-specific household assets. Children are classified as urban if the school they attend is in a community larger than 15,000 people.

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A Definitions of City

In this section, I describe the definitions of "city" used across different datasets and places.

PISA The school questionnaire for each student asks about the size of the community. I classify children as urban if they attend school somewhere larger than "a village, hamlet, or rural area (fewer than 3,000 people)" and larger than a small town (3,000 to 15,000 people). Results are unchanged when I include small towns in the urban definition.

World Values Survey Respondents are asked the size of their community. I define country-specific thresholds presented below, whenever possible holding the cut-offs constant across survey waves. In certain waves, I exclude Chile, Ethiopia, Iraq, Jordan, Mali, Saudi Arabia, and Zambia which do not include sufficient sampling of residents from rural areas.

- Andorra: 10,000
- Argentina: 20,000
- Armenia: 10,000
- Albania: 10,000
- Algeria: 20,000
- Australia: 20,000
- Azerbaijan: 5,000
- Bangladesh: 5,000
- Bahrain: 20,000
- Belarus: 10,000
- Bolivia: 20,000
- Bosnia Herzegovina: 5,000
- Brazil: 20,000
- Bulgaria: 10,000
- Burkina Faso: 10,000

- Canada: 20,000
- Chile: 20,000
- China: 20,000
- Colombia: 20,000
- Cyprus: 10,000
- Ecuador: 20,000
- Egypt: 10,000
- Estonia: 10,000
- Ethiopia: 10,000
- Finland: 10,000
- France: 10,000
- Georgia: 5,000 ("Rural" in Wave 6)
- Germany: 20,000
- Ghana: 5,000
- Greece: 20,000
- Guatemala: 10,000
- Hungary: 10,000
- India: 5,000
- Indonesia: 10,000
- Iraq: 50,000
- Iran: 9,000, (10,000 in Wave 5)
- Italy: 10,000
- Japan: "Rural Districts" (50,000 in Wave 7)
- Jordan: 20,000
- Lebanon: 20,000
- Libya: 10,000
- Kazakhstan: 5,000
- Kuwait: 20,000
- Kyrgyzstan: 5,000
- Macedonia: 10,000
- Malaysia: 10,000
- Mexico: 5,000
- Moldova: 5,000
- Montenegro: 5,000
- Morocco: 20,000, (30,000 in Wave 6)
- Myanmar: 5,000
- Netherlands: 20,000
- New Zealand: 9,999
- Nicaragua: 20,000
- Nigeria: 10,000
- Norway: 10,000
- Pakistan: 5,000
- Peru: 20,000
- Philippines: 50,000
- Poland: 10,000

- Romania: 10,000
- Russia: 50,000
- Rwanda: 50,000
- Serbia: 20,000
- Slovenia: 5,000
- South Africa: 7,999, (10,000 in Wave 6)
- South Korea: "Farm/Mountain/Fishing village", ("Rural Area" in Wave 6), (100,000 in Wave 7)
- Spain: 10,000
- Sweden: 50,000
- Taiwan: 50,000
- Tajikistan: 5,000
- Thailand: 5,000
- Trinidad and Tobago: 5,000
- Tunisia: 10,000
- Turkey: 50,000
- Ukraine: 50,000
- Uganda: 7,999
- United Kingdom: 20,000
- United States: 50,000
- Uruguay: 10,000
- Uzbekistan: 5,000
- Venezuela: 50,000
- Vietnam: 10,000
- Yemen: 5,000
- Zimbabwe: 7,999 (10,000 in Wave 6)

Demographic and Health Surveys In the DHS, there is no consistent standard of urban across countries. The DHS always adopts the country's own urban-rural definition, which can be based off of population, infrastructure, or other metrics. See the IPUMS DHS website for specific details on each country.