

Topics in Development Economics (EC9C0)

Week 5: Gender Lecture 9

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Announcement

Thursday this week, we will discuss possible research proposals inspired by this paper: [Frank Sudarshan 2024](#).

Also, for today's talk, I will rely on materials developed by Clement Imbert.

Gender and development

- Female empowerment and economic development are related ([Duflo 2012](#)).
- Many development problems have a gender aspect:
 - Women have restricted access to health care ([Dupas Jain 2024](#)).
 - Women have restricted access to education ([Borker 2024](#)).
 - Farms owned by women get lower investment ([Udry 1996](#)).
 - Firms owned by women get lower investment ([Bernhardt et al 2019](#)).
 - Women face barriers to work, especially in non-agricultural jobs ([Goldin et al 1995](#)).

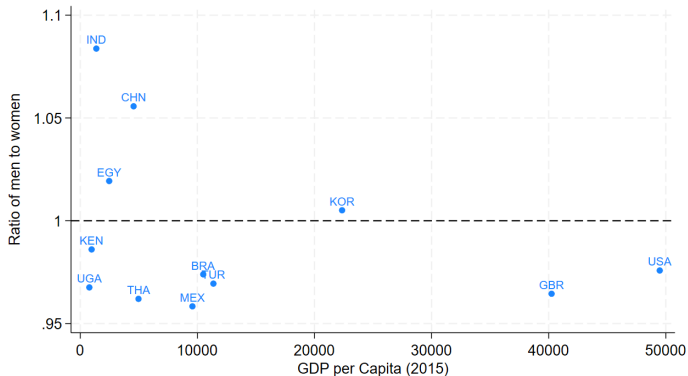
Gender and development

- Female empowerment can contribute to economic development: higher human capital (for women and children), better allocation of capital, labor.
- Economic development can contribute to female empowerment: new job opportunities (services), lower fertility, appliances free up time.
- But the relationship may not be strong enough to be self-sustaining (**Duflo 2012**).

Outline of the lecture

1. **Missing Women**
2. Household decision-making
3. Barriers to Education
4. Female Labor Force Participation
5. Women in Politics
6. Conclusion

There are more women than men in rich countries,
more men than women in (some) poorer countries



Source: World Development Indicators, World Bank.

100 million Missing Women

Sen (1990) in an influential article wrote that "More Than 100 Million Women Are Missing":

- Take rich countries as a benchmark: the ratio of men to women in Europe and Northern America is 0.95.
- Women have better survival rates when offered the same conditions as men (resistance to diseases).
- Sex ratios are higher in poorer countries: much higher in Asia (about 1.05 back then, now > 1.05), a bit higher in Africa (about 1 back then, now < 1).
- This is not only about poverty: Africa is poorer than East Asia (within India, sex ratio is highest in rich states).
- This is not only about West / East: Japan, Thailand, Indonesia have low sex ratios.

Why?

Sen (1990) links missing women to participation of women to "gainful" employment:

- Having their own earnings reduces women's dependence to their husband ("outside option").
- Working women obtain greater social recognition... and bargaining weight in the household.
- Working outside home allows women to learn about "the outside world" (e.g. education, fertility etc.).
- To support this view, compares Sub-Saharan Africa with South Asia and the Middle East-North Africa.
- Correlation is not causation: female labor force participation and sex ratio may be jointly determined.

What about China?

China is an exception to the relationship posited by Sen (1990) between female labor force participation and sex ratios:

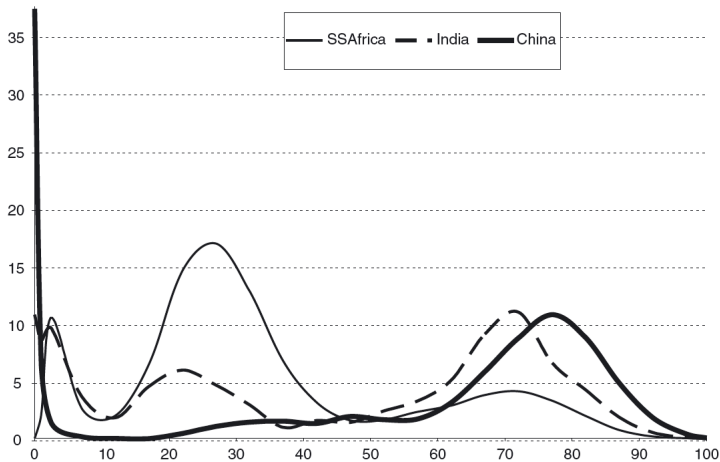
- Last 30 years have seen high economic growth and a decline in the number of women (sex ratio above 1.05).
- Female labor force participation was encouraged by communist policy: higher social status of women.
- Economic reform encouraged a return to more traditional gender roles (especially in agricultural households).
- Single child policy + Tradition of the son taking care of elders: having a son becomes very important.
- Ultra-sound technology allow for sex-selective abortion: sex ratio at birth soared to more than 115.

Missing Women: a reappraisal

In the spirit of Sen (1990) **Anderson and Ray (2010)** compute the number of missing women in SSA, India and China by comparing female mortality to the counterfactual:

$$\textit{Counterfactual} = \frac{\textit{FemaleMortality}_{OECD}}{\textit{MaleMortality}_{OECD}} * \textit{MaleMortality}$$

Missing Women: a reappraisal



Source: Anderson and Ray (2010)

Missing Women: a reappraisal

Anderson and Ray (2010) find interesting results:

- Not only sex selective abortion: a majority of missing women are adult and most of them come from SSA.
- Not only maternal mortality: women also die more than men from injuries in India, HIV/AIDS in SSA.
- Mix of reasons: discrimination in health care, differential incidence (social and physiological factors).

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Calvi (2020) Missing older women

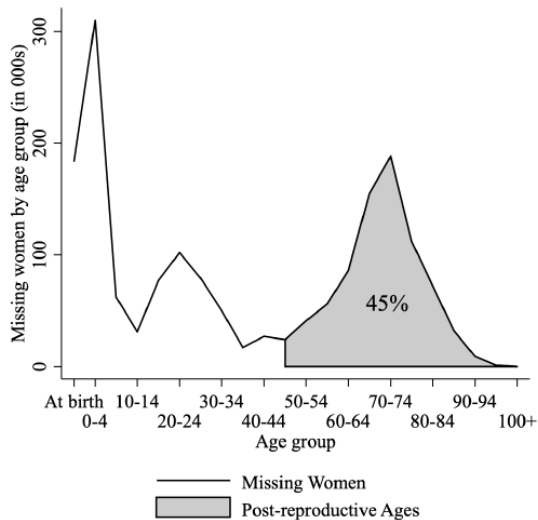


Figure 1: Missing Women by Age Group (Anderson-Ray, 2010)

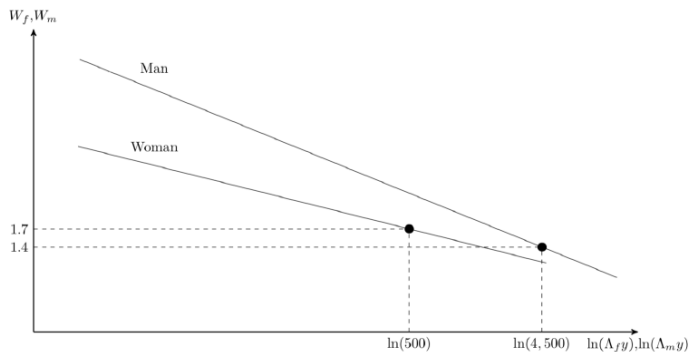
Calvi (2020) Effect of the Hindu Succession Act

Table 1: HSA Amendments and Women's Nutritional Status

	Body Mass Index				Pr(Anaemia)		
	All Sample	BMI \leq 23	BMI $>$ 23	Pr(BMI \leq 18.5)	Severe	Moderate	Mild
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
HSAA	0.231* (0.125)	0.273*** (0.0892)	-0.0884 (0.131)	-0.0468*** (0.0154)	-0.0123*** (0.00306)	-0.0321*** (0.00668)	-0.0345*** (0.00932)
N	81,534	57,607	23,927	81,534	77,777	77,777	77,777
Mean Dep. Variable	21.42	19.24	26.69	0.2648	0.0154	0.1559	0.5298

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. NFHS data. Married women of age 15 to 49 included in the sample. HSAA Exposed is equal to one if woman i got married after the amendment in state s and is Hindu, Buddhist, Sikh or Jain. Mild anaemia includes moderate and severe anaemia, and moderate anaemia includes severe anaemia. All specifications include a religion dummy, equal to 1 if a woman is Hindu, Buddhist, Sikh or Jain, state and cohort indicators, and state-religion, state-cohort, and religion-cohort indicators. Individual controls include household size and household size squared, a household wealth index, and indicator variables for having completed 12 years of school (higher secondary school), having worked in the past 12 months, for living in rural areas and for being part of Scheduled Castes, Scheduled Tribes or Other Backward Classes. Robust standard errors in parentheses. Standard errors clustered at state-religion level. Sampling weights applied.

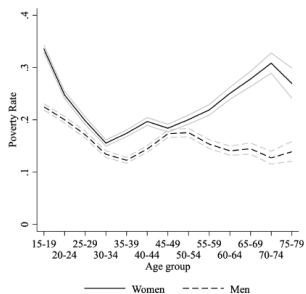
Calvi (2020) Budget shares and resource shares



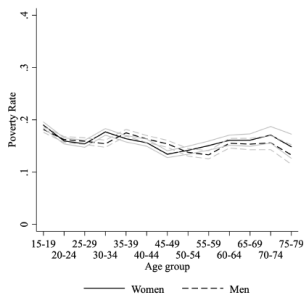
$$W_f > W_m, \Lambda_m > \Lambda_f$$

Figure 2: Assignable Clothing Engel Curves: An Illustrative Example

Calvi (2020) Poverty Rate Results



(A) Model Predictions (Unequal Sharing)



(B) Equal Sharing

Note: The graphs show the fraction of females or males in each age group living below poverty line. Individuals from all households in the sample are used for calculations. Per capita expenditures are computed using the model predictions in panel A. In panel B, I assume that household expenditure is split equally among household members. Per capita expenditures are compared to the US\$1.90/day poverty line.

Figure 4: Poverty Rates By Gender and Age (US\$1.90/day)

Calvi (2020) Summary

- Hindu Succession act increases bargaining power of Hindu women.
- Higher bargaining power improves nutrition, health and lowers mortality.
- Write collective household model where bargaining weight=resource share.
- Compute resource shares based on budget shares on assignable consumption.
- Shows bargaining weight in the household falls after reproductive age.
- Use resource shares to compute poverty rates at individual level.
- Show that poverty rates of women are higher than men, and even higher for older women: excess mortality matches poverty rates.

What is a household?

An entirely unambiguous, consistent, and universal definition of the "household" for use in sampling, data collection and analysis, proved to be elusive.... As a working definition we defined the household as the smallest group of persons usually, but not exclusively kin related who form a more or less independent production and consumption unit during the cropping season.

ICRISAT survey documentation cited in Udry (1996)

Allocative efficiency within household (Udry 1996)

Udry (1996) studies production decisions of agricultural households in Burkina Faso:

- There is no labor market in this context: only family labor is used on the farm.
- Households cultivate multiple plots (median of 10 plots per household).
- Plots are owned by husband, wife, or are "communal".
- Men have control over theirs and communal plots.
- Women have substantive control over their plots.

Are plots owned by men and women cultivated differently?

Test of household efficiency: results

Udry (1996) finds strong evidence that production decisions of agricultural households are not efficient:

- Yield on female owned plot is 30% lower than average.
- Men are much less likely to work on female owned plots.
- Women are slightly less likely to work on male plots.
- All fertilizer is concentrated on plots controlled by men.

Rules out other possible explanations:

- Unobserved heterogeneity: Controlling for plot characteristics increases the difference.
- Differences in technology: Production function parameters are the same for male and female plots.

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Losses due to allocative inefficiency

Udry (1996) attempts to quantify losses due to inefficient allocation of inputs:

- Uses estimated production function parameters (assumed CES function).
- For each household*crop*year reallocates total inputs equally between plots.
- Computes counterfactual output and compares it to actual output: the counterfactual is 6% higher.
- Repeats the exercise across households within each village: the counterfactual is 13% higher.

Hence household joint decision-making mitigates the problem of allocation of inputs but falls short of achieving efficiency.

Production and Consumption

Duflo and Udry (2004) find that shocks to different crops have different effects on consumption:

- Income from yams is spent on education and staples.
- Income from male crops is spent on adult goods (tobacco, alcohol) and prestige goods (jewelry, "pagnes").
- Income from female crops is spent on adult and prestige goods, food (staples, meat, vegetable), clothing.

These results invalidate the income pooling hypothesis:

- households use norms / mental accounting: yams are dedicated to household public goods.
- income from other crops is used for private consumption and spent differently by men and women.

Contraception and Fertility: Ashraf et al. (2014)

Model of household deciding over contraception:

- Collective household model with bargaining.
- Man wants more children but woman does not.
- Hidden action: contraception through injections.
- Moral hazard: no children = bad luck or contraception?
- Aggrievement: suspicious man punishes woman.

Experiment in Zambia:

- Health centres give voucher for family planning services.
- Treatment women get them in presence of their husband.
- Find fertility is lower and contraception higher.
- .. but also find that reported well-being is lower.

Outline of the lecture

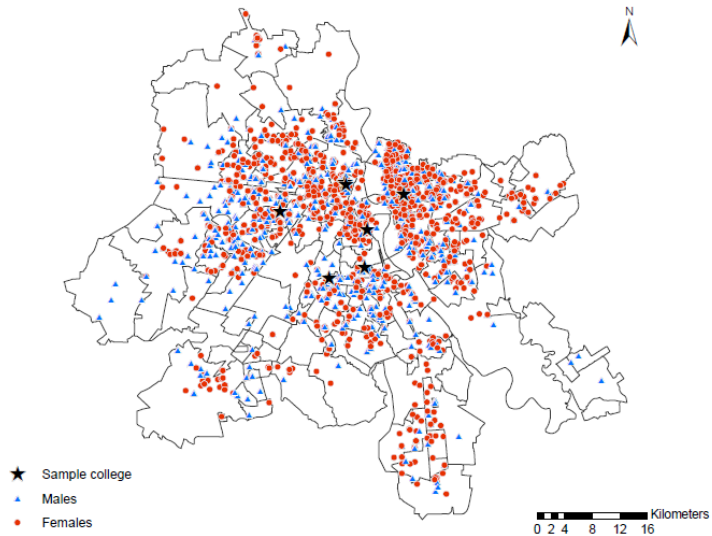
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Safety and college choice: Borker 2024

- Sexual harassment in Delhi:
 - UN women's study shows that 92% of surveyed women in Delhi have suffered sexual harassment.
 - Sexual harassment: from sexual remarks and sexual jokes, to sexual assault and rape.
 - It can affect women psychologically, economically and socially.
- Borker (2020) argues that safety concerns are a major factor of women's college choice:
 - Survey of 3948 male and female students in eight Delhi University colleges.
 - Data on perception of safety by area and mode of transport crowd-sourced from Safetipin.
 - Compares the effect of high school test scores by gender.

Borker 2024: Survey data

Figure 4: Students in Full Survey Sample

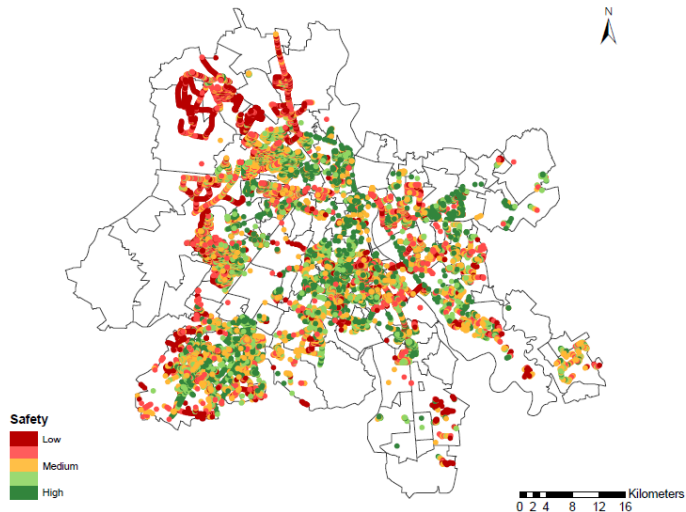


Notes: This map shows the residential location of students who are Delhi residents from the full survey sample that live at home and travel to college everyday.

Borker 2024: Safetipin data

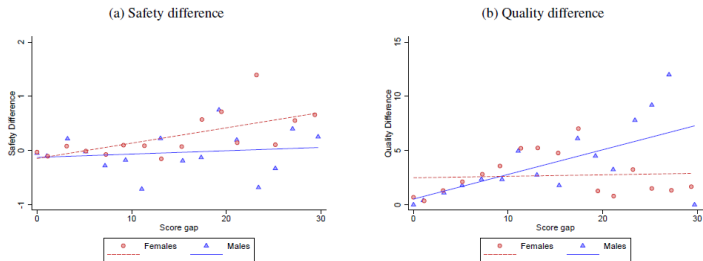
Figure 6: Area Safety Data from SafetiPin

(a) Safety Audit Data



Borker 2024: Safety vs quality in college choices

Figure 8: Choice Relative to Neighbors



Borker 2024 Findings

- She finds stark differences in college choice by gender:
 - Higher scores allow men to go to better colleges.
 - Higher scores allow women to choose colleges that are safer to get to.
- She then estimates a model of college and route choice:

$$U_{icr} = \beta_i^Q Q_{ic} + \beta_i^S S_{icr} + \beta_i^T T_{icr} + \beta_i^P P_{icr} + \varepsilon_{icr}$$

- U_{icr} utility of student i going to college c via route r
 - Q_{ic} college quality, S_{icr} safety, travel time T_{icr} , cost of travel P_{icr}
 - Compares β_i^Q and β_i^P with β_i^S for women and for men.
- For one SD improvement in safety:
 - women sacrifice four times more in college quality.
 - women are ready to spend 75% more on travel than men.

Negotiation Training: Ashraf et al. 2018

- Parents decide on girls' secondary education.
- Preferences may differ: housework versus education.
- Treatment: negotiation skills training for young women.
- Two alternative treatments: information and safe space.
- Real-world outcomes: education, housework.
- Lab in the field: incentivized trust games with parents.

Findings:

- Decrease in dropout, increase in educational outcomes.
- Increase in parents' satisfaction of girls' behavior.
- Some evidence of compromise: housework on Friday.
- More efficient outcomes in games with communication.

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Female labor force participation and development

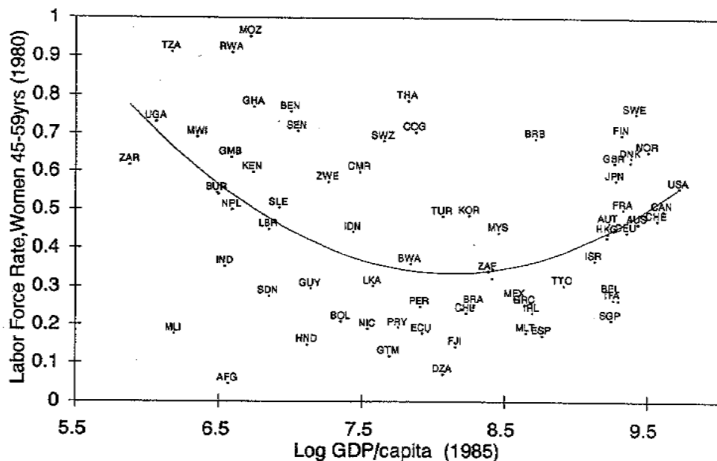
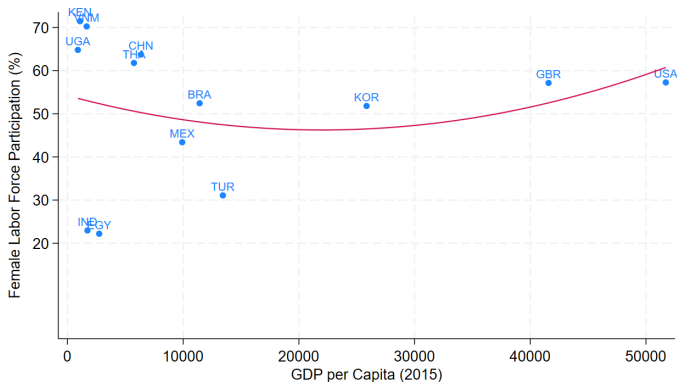


Figure 1
Labor Force Participation Rates for Women 45 to 59-Years-Old (c. 1980) and the Log of GDP/Capita (1985, 1985 \$)

Source: Goldin 1995

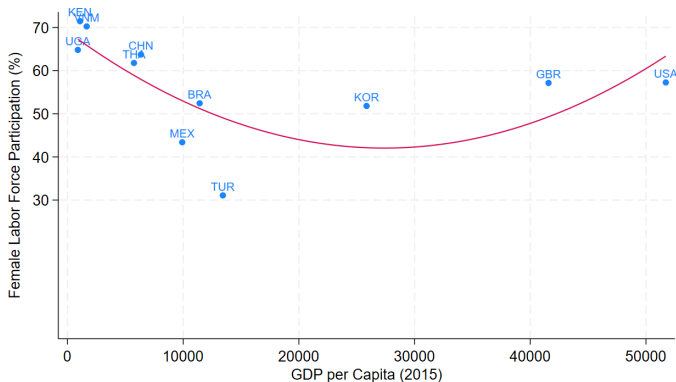
FLFP and development (updated)



Source: World Development Indicators, World Bank

Source: World Development Indicators

FLFP and development (updated without IND or EGY)



Source: World Development Indicators, World Bank

Source: World Development Indicators

Agricultural employment similar for men and women



Source: World Development Indicators, World Bank

Source: World Development Indicators

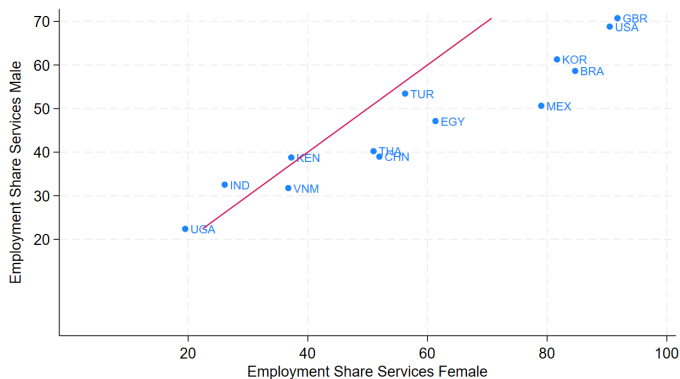
Manufacturing employment is male dominated



Source: World Development Indicators, World Bank

Source: World Development Indicators

Services employment is female dominated in rich countries



Source: World Development Indicators, World Bank

Source: World Development Indicators

Female labor force participation and development

Goldin et al 1995

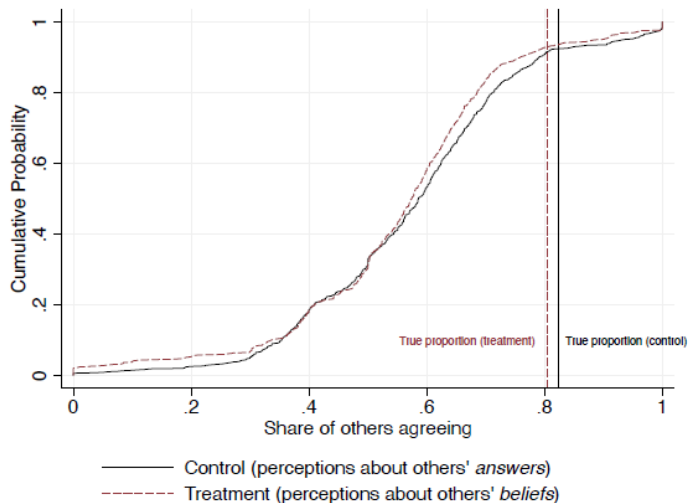
- In poor countries women work on the farm (theirs or someone else's).
- Their labor force participation decreases with increase in non-agricultural work:
 - Rise in wage income earned by men.
 - Women stay at home for domestic work and childcare.
 - Social norms against women doing blue collar work.
- Later increase in female wages with rise in white collar work.

Ho et al. 2024 Bringing work home

- Partners with a company that offers smartphone-based data work.
- Recruits a sample of 1670 low-middle income households in West Bengal (India).
- RCT with a control group and treatment groups that receive different offers:
 - Office job
 - Work from home (inflexible)
 - Work from home (flexible hours and/or compatible with childcare).
- Document strong demand for flexible work from home, with differential take-up:
 - Office job: 14%
 - Inflexible work from home: 29%
 - Work from home compatible with childcare: 46%
- Shows that children report fathers do more household work and have less stereotypical views on gender roles.

Misperceived social norms: Bursztyn et al. 2020

Figure 6: Misperceptions about Others' Beliefs
(National Survey)



Bursztyn et al. 2020 Initial experiment

Argue that social norms against women working are weaker than they seem:

- Survey of 500 young married men in Saudi Arabia.
- Collect their views on married women who work.
- Find that men are less conservative than men think.
- Inform randomly selected treatment group about other's opinion.
- Treated more likely to sign-up to job-matching services for their wives.
- Effects driven by men who underestimated other men's support.
- In the long run wives more likely to have applied to jobs and to have driving license, insignificant effect on employment.
- Limitations?

Bursztyn et al. 2020 External validity tests

- National survey of 1,500 young married men in Saudi Arabia.
- Use list experiments vs direct questions on support for female employment.
- Measures of own preferences similar: little social desirability bias.
- Underestimation of other's support is similar to the first experiment.
- Compares own views with Arab Barometer: similar in other countries.
- Why are views misperceived: online survey shows men don't talk about it.
- Surveyor recruitment experiment: job at / outside home.
- Treatment group is told the results of first experiment.
- Find higher take up of work outside of home!

Reshaping social norms: Dhar et al. (2020)

Evaluate an intervention that aims at changing adolescents' attitudes towards gender equality

- Experiment in 314 secondary schools in Haryana (India).
- NGO workers give gender equality training to adolescents.
- Intensive: 27 sessions over two and a half years.
- Persistent improvements in gender attitudes (girls+boys).
- More gender-equal behavior reported by the boys (only).
- Worry about experimenter demand effect.
- Measure social desirability and test for heterogeneous treatment effects.

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Politics of gender, gender of politics

Gender is not only about household decision-making:

- Many gender issues are political issues: education, health, labor force participation, violence against women.
- Many political issues have a gender aspect: economic policy, police, public infrastructures, social security.
- Because they have different preferences from men, women's political empowerment may change policies.

Political representation of women is low worldwide:

- 22% of the world's parliamentarians were women in 2015.
- There exist three types of quotas: seat reservations, legislative candidate quotas, party voluntary quotas.

Women are less represented in poorer countries

	Single House or lower House	Upper House or Senate	Both Houses combined
Nordic countries	41.1%	---	---
Americas	27.0%	25.7%	26.8%
Europe - OSCE member countries excluding Nordic countries	24.2%	24.2%	24.2%
Sub-Saharan Africa	23.3%	22.0%	23.1%
Asia	19.3%	16.2%	19.0%
Arab States	19.1%	11.9%	17.9%
Pacific	13.4%	36.0%	15.9%

Source: Inter-Parliamentary Union

<http://www.ipu.org/wmn-e/world.htm>

Women quotas are widespread, and developing countries have adopted more aggressive policies.

	Party quotas	Lower House	Sub-National Level
Brazil	No	Candidate Quotas	Candidate Quotas
China		Reserved seats	Not legislated
Egypt	No	Candidate Quotas	Reserved seats
India	No	Not legislated	Reserved seats
Kenya	Yes	Reserved seats	Reserved seats
UK	Yes	Not legislated	Not legislated

Source: The Quota Project

<http://www.quotaproject.org/>

Women as policy makers

Chattopadhyay and Duflo (2004) estimate the causal effect of having a female leader:

- Village councils (Gram Panchayat) are the lowest level of political representation in India.
- Traditional institution in some parts of India, revived and extended to whole country by 1993 law.
- Today, their responsibilities include drinking water, local roads projects, rural development programs.
- By law at least 1/3 of seats need to be reserved for women (50% in some states), randomly allocated.
- Can estimate the effect of having a female leader by comparing reserved vs non reserved seats.

Women as policy makers: Theory

Why would female policy makers make a difference?

- They may have different qualities: be more dedicated, less corrupt, less authoritarian than males.
- They may have different personal preferences as women, e.g. they may care about different type of public goods.
- They may be more accountable to female voters than males and implement their preferred policies.

To test this Chattopadhyay and Duflo (2004) measure:

- Male and female voters preferences in two states: Rajasthan (RJ) and West Bengal (WB).
- Public goods provided by male vs female leaders.
- Participation of women to local assemblies (Gram Sabha)

Women as policy makers: Results

Chattopadhyay and Duflo (2004) find that:

- Women care more about drinking water in RJ and WB
- They care more about roads in WB, not in RJ.
- Female leaders deliver more drinking water in RJ and WB.
- They deliver more roads in WB but not in RJ.
- Female participation to local assemblies is higher when leader is female.

Hence the identity of the leader matters:

- Female leaders shift the policy mix towards women's preferences.
- Female leaders increase women's political empowerment.

Powerful women: Electoral effects

Beaman Chattopadhyay Duflo Pande and Topalova (2009) evaluate the effect of reservation once it is removed:

- Use three rounds of elections in Birnbum district (WB).
- Few women run and are elected on unreserved seats.
- One round of reservation makes little difference.
- Two rounds of reservation increase the probability for women to run (7 to 10%) and be elected (7 to 13%).

Find evidence that voters opinions have changed:

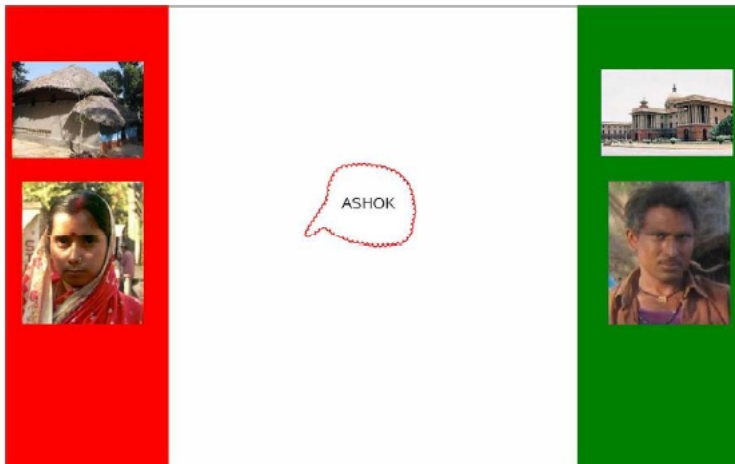
- The first time a seat is reserved, voters' assessment of female leaders is worse than male leaders
- The second time, there is no difference between voter's assessment of female and male leaders.

Powerful women: Measuring bias

Beaman Chattopadhyay Duflo Pande and Topalova (2009)
measure implicit and explicit bias against female leaders:

- Speech: ask survey respondents to listen to a speech from a leader whose gender is randomized.
- Vignette: describe a situation and a leader's action, randomizing gender and decision made.
- Implicit Association Test:
 - Computerized test which doesn't require to read.
 - Randomly associates the male/female category with domestic/public setting or with good / bad characteristics.
 - Asks respondents to categorize words into male/female.
 - Measures the time it takes for respondents to do it.

Powerful Women: IAT



Source: Beaman et al. (2009)

Powerful Women: Results

- Explicit bias: Male and (to a smaller extent) women are biased against female leaders
- ... but reservation erases this negative bias among men (little effect on women)
- Implicit bias: men and women associate women more with domestic activities than leadership.
- ... but one round of reservation is enough for men to get rid of the stereotype.
- Implicit bias 2: men (women) associate images of male (female) leaders with positive attributes.
- ... and one round of reservation strengthens men's preference for male leaders (backlash?).

Reservation changes male voters' opinions and stereotypes about female leaders but not underlying tastes.

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Gender and development: Conclusion

Duflo (2012) in her review paper concludes that:

- Women's living conditions in developing countries are worse relative to men than in developed countries: missing women in SSA and South Asia.
- Economic development in itself may not be enough to improve women's condition: sex selective abortion in growing China.
- Women empowerment may or may not in itself bring economic development: mixed evidence of mother's empowerment on children's education.
- Women empowerment should be pursued for equality's sake: improving women's access to education, health, labor markets, politics does make women better off!