# The Local Transmission of Gender Norms: Evidence from India

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- Strong gender norms contribute to this phenomenon (Jayachandran, 2015).

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  - Does exposure to tribal women a marginalized group with more equitable gender norms– increase female labor force participation among caste (non-tribal) women?

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#### **Motivating Correlation**



# Roadmap of Talk

#### Context

**Causal Identification** 

Mechanisms

**Conclusion and Next Steps** 

# Distribution of Tribal People in India



District-Level Tribal Shares in India

- Tribal people account for 8.2% of the total population of India.
- Historically marginalized.
- The majority of the tribal people live in the 10 tribal belt states.
- Most of them live in rural areas.

#### Context

Self-identification, Coalition of Adivasi (Tribal) Peoples, 12th session, UNWGIP (1994):

- -"Relative geographical isolation of the community.
- Reliance on forest, ancestral land and water bodies within the territory of the communities for food and other necessities.
- A distinctive culture which is community oriented and gives primacy to nature.
- Relative freedom of women within the society.
- Absence of division of labour and caste system.
- Lack of food taboos."

# **Potential Mechanisms**

As *s<sub>i</sub>* increases...

- Learning: Benefits or costs from working  $b_j c_j$  may change:
  - Wages  $\downarrow$  via positive labor supply shock

  - Husbands update about harm caused to children
- *Contact hypothesis*: Weight placed by caste hhds on tribal views λ(*s<sub>i</sub>*) could increase with share tribal.
- Social Norms: Positive weight λ(s<sub>i</sub>) ⇒ higher tribal share, more approval of women's work
  - Multiplicative effect: higher s<sub>i</sub> could change weights λ(s<sub>i</sub>), also increases caste labor force share
- Ultimately, caste LFP increases  $\frac{1}{N}\sum_{k=1}^{N} w_k \uparrow$

# Similar Results for Female Empowerment Measures

|                            | Wo<br>(Past 12      | rked<br>Months)     | HH Decision-Making |                     | Mobility           |                     | Disagreement<br>Gender-Based Violence |                   |
|----------------------------|---------------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------------------------|-------------------|
|                            | (1)                 | (2)                 | (3)                | (4)                 | (5)                | (6)                 | (7)                                   | (8)               |
| Adivasi Share              | 0.104***<br>(0.025) |                     | 0.076**<br>(0.035) |                     | 0.109**<br>(0.051) |                     | 0.055<br>(0.043)                      |                   |
| Adivasi Share (25-50%)     |                     | 0.025*<br>(0.013)   |                    | -0.024<br>(0.020)   |                    | 0.010<br>(0.026)    |                                       | 0.026<br>(0.023)  |
| Adivasi Share (50-75%)     |                     | 0.046***<br>(0.017) |                    | 0.072***<br>(0.023) |                    | 0.062*<br>(0.033)   |                                       | 0.032<br>(0.030)  |
| Adivasi Share (75-100%)    |                     | 0.103***<br>(0.024) |                    | 0.033<br>(0.036)    |                    | 0.137***<br>(0.052) |                                       | -0.023<br>(0.040) |
| Mean (Adivasi Share< 0.05) | 0.459               | 0.459               | 0.068              | 0.068               | 0.114              | 0.114               | -0.020                                | -0.020            |
| Individual Controls        | Yes                 | Yes                 | Yes                | Yes                 | Yes                | Yes                 | Yes                                   | Yes               |
| Socio-Economic Controls    | No                  | No                  | No                 | No                  | No                 | No                  | No                                    | No                |
| State FEs                  | Yes                 | Yes                 | Yes                | Yes                 | Yes                | Yes                 | Yes                                   | Yes               |
| Round FEs                  | Yes                 | Yes                 | Yes                | Yes                 | Yes                | Yes                 | Yes                                   | Yes               |
| N - Individuals            | 22,729              | 22,729              | 21,159             | 21,159              | 16,557             | 16,557              | 22,689                                | 22,689            |
| N - PSUs                   | 2,855               | 2,855               | 2,843              | 2,843               | 2,385              | 2,385               | 2,855                                 | 2,855             |

Additional Controls
 Empowerment Indices

# **FBA Results**

|                        |   | Wife's Beliefs                        |  |  | Husband's Beliefs                     |  |  |  |
|------------------------|---|---------------------------------------|--|--|---------------------------------------|--|--|--|
|                        | Participated in<br>Work<br>Intervention | Believes that<br>women<br>cannot work | Community<br>share that<br>speaks badly<br>of working<br>woman | Community<br>share that<br>speaks badly<br>of husband of<br>working<br>woman | Believes that<br>women<br>cannot work | Community<br>share that<br>speaks badly<br>of working<br>woman | Community<br>share that<br>speaks badly<br>of husband of<br>working<br>woman |  |
|                        | (1)                                     | (2)                                   | (3)  | (4)  | (5)                                   | (6)  | (7)  |  |
| Tribal Share (10-20%)  | 0.093                                   | -0.084                                | -0.278*  | -0.158   | -0.036                                | -0.467*  | 0.061  |  |
|                        | (0.072)                                 | (0.053)                               | (0.157)  | (0.206)  | (0.059)                               | (0.270)  | (0.194)  |  |
| Tribal Share (20-100%) | 0.134*                                  | -0.146**                              | -0.408   | -0.508   | 0.016                                 | -0.464   | -0.225   |  |
|                        | (0.070)                                 | (0.062)                               | (0.326)  | (0.433)  | (0.091)                               | (0.430)  | (0.325)  |  |
| Mean (ST Share < 0.05) | 0.548                                   | 0.317                                 | 3.954  | 4.233  | 0.378                                 | 4.783  | 5.676  |  |
| Individual Controls    | Yes                                     | Yes                                   | Yes  | Yes  | Yes                                   | Yes  | Yes  |  |
| Village Controls       | Yes                                     | Yes                                   | Yes  | Yes  | Yes                                   | Yes  | Yes  |  |
| N - Individuals        | 967                                     | 970                                   | 969  | 970  | 921                                   | 918  | 920  |  |
| N - Villages           | 50                                      | 50                                    | 50   | 50   | 50                                    | 50   | 50   |  |

# **Chicken Consumption**

|                                | Any Chicken Consumption |          | Value of Chicken Consumption (Rs) |         | Average Chicken Price |         |
|--------------------------------|-------------------------|----------|-----------------------------------|---------|-----------------------|---------|
|                                | (1)                     | (2)      | (3)                               | (4)     | (5)                   | (6)     |
| Adivasi                        | 0.047***                |          | 8.138***                          |         | 0.001                 |         |
|                                | (0.009)                 |          | (2.274)                           |         | (0.001)               |         |
| Adivasi Share                  |                         | 0.111*** |                                   | 13.834* |                       | 0.002   |
|                                |                         | (0.038)  |                                   | (7.867) |                       | (0.003) |
| Mean (Non-Adivasi)             | 0.313                   |          | 44.614                            |         | 0.107                 |         |
| Mean (Adivasi Share $< 0.05$ ) |                         | 0.305    |                                   | 43.008  |                       | 0.106   |
| Caste Controls                 | Yes                     | Yes      | Yes                               | Yes     | Yes                   | Yes     |
| Socio-Economic Controls        |                         | No       |                                   | No      |                       | No      |
| State FEs                      | Yes                     | Yes      | Yes                               | Yes     | Yes                   | Yes     |
| N - Individuals                | 59,109                  | 7,757    | 59,109                            | 7,757   | 41,918                | 5,878   |
| N - PSUs                       | 7,402                   | 1,536    | 7,402                             | 1,536   | 5,248                 | 1,181   |

# Roadmap of Talk

Context

#### **Causal Identification**

Mechanisms

**Conclusion and Next Steps** 

# First Approach to Causal Identification

- Heterogeneity in gender norms across tribal groups.
- Over 700 recognized tribes.
- Substantial variation in gender attitudes as measured by customary laws (divorce, inheritance laws); norms relating to marriage and co-habitation (payments, post-marriage settlement location); etc.

• Restrict to 10 most populous tribes in Central Region states (Madhya Pradesh, Maharashtra, Jharkhand, Chhattisgarh, Odisha, Gujarat, Rajasthan).

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- Follow Boserup (1970) and classify the ten tribes into two groups: > Details
  - 1. Tribes that historically practiced shifting agriculture ( $\rightarrow$  more gender-equal today)
  - 2. Tribes that historically practiced both shifting and plough agriculture (  $\rightarrow$  less gender-equal today)

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- Several other norms important for gender equality map to this classification (e.g. ownership and female inheritance rights).

 $\Rightarrow$  **Identifying assumption**: tribes with different gender norms don't differ systematically along other attributes

#### Tribal Share Only Matters in Districts with 'Empowered' Tribes

|                                      | Worked (Past 12 Months) |                    |  |
|--------------------------------------|-------------------------|--------------------|--|
|                                      | (1)                     | (2)                |  |
| Tribal Share in District             | 0.081<br>(0.087)        | 0.022<br>(0.081)   |  |
| Shifting Ag Tribes Share in District | 0.179*<br>(0.095)       | 0.216**<br>(0.089) |  |
| Mean (Tribal Share $< 0.5$ )         | 0.36                    | 0.36               |  |
| State FE                             | Yes                     | Yes                |  |
| Round FEs                            | Yes                     | Yes                |  |
| Individual Controls                  | Yes                     | Yes                |  |
| Socio-Economic COntrols              | No                      | Yes                |  |
| Ν                                    | 16,345                  | 16,345             |  |

▶ Data-Driven Approach

# Alternative Identification Strategies Using Secondary Data

1. Use forest share as an instrument for tribal share  $\rightarrow$  Results

- Intuition: Tribal people have close ties to nature and often rely on forests for food.
- We find a strong first stage and similar results in the second stage.
- Placebo check: forest share is not correlated with FLP in villages without tribal women (this is sensitive to the specification).

# Alternative Identification Strategies Using Secondary Data

1. Use forest share as an instrument for tribal share 
• Results

- 2. Displacement of tribal groups through dam constructions in the 1960s.
  - We digitized 1961 village-level data for one district in Odisha but only found small changes in tribal shares over time.
  - No relationship between changes in tribal shares and distance to dams.
  - Migration may have been too recent to lead to cultural diffusion.

# Alternative Identification Strategies Using Secondary Data

1. Use forest share as an instrument for tribal share > Results

- 2. Displacement of tribal groups through dam constructions in the 1960s.
- 3. Inland migration of caste people after 1866 Odisha Famine in coastal areas.
  - Idea: use variation in severity of famine or suitability of rivers for boat travel to predict tribal shares.
  - But no information on village-level population shares before 1961 census.
  - General concern: Difficult to disentangle effects of village size and tribal share when examining migration patterns.

# Roadmap of Talk

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# Lab-in-the-Field Experiment

# Lab-in-the-Field Experiment

- Conduct lab-in-the-field experiment in low and high tribal share villages to address endogeneity concerns and disentangle mechanisms.
- Addressing endogeneity concerns:
  - Use gender-unequal tribes as placebo group.
- Disentangle mechanisms.
  - Implement work intervention to keep labor characteristics constant.
  - Change observability of choice to identify social image costs.
  - Identify tribal contact through money allocation game.
  - Collect additional information on work behavior, beliefs, norms, and tribal contact through survey questions.

# Lab-in-the-Field Experiment - Addressing Endogeneity Concerns



- Compute patriarchy index for the main tribes in Odisha and Madhya Pradesh.
- Conduct experiment in 100 villages for each group.
- Ideally, conduct full diff-in-diff. But we dropped low-share gender-unequal group for power reasons. Reasonable?

# Lab-in-the-Field Experiment - Addressing Endogeneity Concerns



- Identifying assumptions:
- 1. Treatment group only differs with respect to the gender norms of the tribal group.
- 2. There was no differential selection based on the gender norms of the tribal group.

- Organize work intervention to keep job characteristics fixed. Except:
- 1. Vary observability (5 people in each group per village).
  - Option 1: conduct job in public or in private.
  - Option 2: conduct job in private but vary observability of choice.
- 2. Vary wage using Becker-DeGroot-Marschak mechanism to measure reservation wage.
- Comparison of Interest:
  - Differences in public and private reservation wages across the 3 groups.





# Mechanism Test 1: Work Intervention Details

- Organize work intervention during lean season to keep alternative work arrangements at a minimum.
- Necesssary job characteristics:
  - Women are familiar with this kind of work / no learning involved.
  - There is a social norms against the activity.
  - Possible to vary the observability of the job.
- Explicitly say that the job is only offered to a small number of people to prevent potential equilibrium changes.

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  - Possible to vary the observability of the job.
- Explicitly say that the job is only offered to a small number of people to prevent potential equilibrium changes.
- $\Rightarrow$  Plan to go to the field in spring to identify a suitable job.

# Mechanism Test 2: Money Allocation Game

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- Play money allocation game (Enke et al., 2019)
  - Ask respondent to divide money between:
    - a randomly selected caste person from village.
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  - Keep wealth and gender of hypothetical recipients constant.

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    - a randomly selected caste person from village.
    - a randomly selected tribal person from village.
  - Keep wealth and gender of hypothetical recipients constant.
- Hypothesis:
  - In higher tribal share villages, caste respondents will give more to tribal recipients because they care more about them.
  - No difference by gender equality of tribal group.

# Mechanism Test 3: Survey Questions

- Social Norms
  - Elicit how many people in the community would speak badly about a working women.
- Social Network
  - Elicit network of caste women to understand whether tribal people are part of their network in high tribal villages.
- Learning
  - Measure beliefs about cost of women working on intra-household outcomes separately for men and women.
- Bargaining Power
  - Play money allocation game in which women have to decide how much money to give up for a direct cash transfer (Almås et al., 2018).

# Addressing Selection and Endogeneity Concerns

- Map historical migration patterns through oral history surveys with village elders.
  - Original location of tribe.
  - Reason for displament and settlement decisions.
  - Caste in- and out-migration.

#### **Power Concerns**

- Initial power calculations suggest that we can detect a change in labor force participation rates by 10-15pp.
- We could run separate regression for public and private work intervention participation...
- ... but we will probably not have enough power to establish that the public-private gap is significantly different acros the three groups. Concern?

#### Alternative Norm: Food Taboos

• A concern with female labor force participation is that it is an equilibrium outcome that is influenced by many factors.

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- A concern with female labor force participation is that it is an equilibrium outcome that is influenced by many factors.
- $\Rightarrow$  Test whether we find a similar pattern for a different norm as well.

# Alternative Norm: Food Taboos

Self-identification from the Coalition of Adivasi Peoples, 12th session, UNWGIP (1994):

- -"Relative geographical isolation of the community.
- Reliance on forest, ancestral land and water bodies within the territory of the communities for food and other necessities.
- A distinctive culture which is community oriented and gives primacy to nature.
- Relative freedom of women within the society.
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- Lack of food taboos."

# Alternative Norm: Chicken Consumption

- Ethnographic evidence shows that some caste groups in tribal areas have started consuming chicken, which is traditionally eaten by tribal, but not caste, groups.
  - We also find a significant positive relationship between tribal share and chicken consumption in NSS data.
- Measure chicken consumption among caste respondents in survey. Also check that no price diff across tribal/ non-tribal villages).

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- Measure chicken consumption among caste respondents in survey. Also check that no price diff across tribal/ non-tribal villages).
- Hypothesis:
  - In higher tribal share villages, caste respondents will be more likely to report that chicken is a part of their diet. No difference by gender equality of tribal group.

# Roadmap of Talk

Context

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- Preliminary evidence for horizontal transmission of norms across tribal and caste women in India.
- Identify subtribes with similar socio-economic characteristics but different gender norms.
- Implement lab-in-the-field experiment to disentangle mechanisms.

# **Thank You!**

# List of Individual Controls

|                                     | ST Share $< 0.05$ |                 | ST Share      |                 |           |  |
|-------------------------------------|-------------------|-----------------|---------------|-----------------|-----------|--|
|                                     | Mean<br>(1)       | St. Dev.<br>(2) | Coeff.<br>(3) | St. Err.<br>(4) | N<br>(7)  |  |
| Panel A: Main Controls              |                   |                 |               |                 |           |  |
| Scheduled Caste                     | 0.220             | 0.414           | 0.163***      | 0.007           | 3,396,755 |  |
| No Caste/Tribe                      | 0.011             | 0.102           | 0.002         | 0.002           | 3,396,755 |  |
| Married                             | 0.869             | 0.337           | -0.039***     | 0.002           | 3,047,482 |  |
| Widowed                             | 0.066             | 0.248           | 0.032***      | 0.001           | 3,047,482 |  |
| Age                                 | 40.661            | 11.039          | 0.341***      | 0.038           | 3,396,755 |  |
| Panel B: Socio-Economic Controls    |                   |                 |               |                 |           |  |
| Inc. of Highest Earner: Rs 5-10,000 | 0.104             | 0.305           | -0.061***     | 0.003           | 3,396,409 |  |
| Inc. of Highest Earner: Rs 10,000+  | 0.080             | 0.271           | -0.053***     | 0.003           | 3,396,409 |  |
| Owns Any Land                       | 0.454             | 0.498           | 0.101***      | 0.009           | 3,396,665 |  |
| Total Irrigaged Land (in Acres)     | 0.476             | 42.256          | 0.199         | 0.523           | 3,062,005 |  |
| Total Unirrigaged Land (in Acres)   | 1.339             | 90.588          | 0.599         | 0.508           | 3,062,004 |  |
| Illiterate                          | 0.342             | 0.474           | 0.336***      | 0.007           | 3,383,911 |  |
| Completed Primary School            | 0.513             | 0.500           | -0.263***     | 0.007           | 3,383,911 |  |
| Completed Middle School             | 0.303             | 0.459           | -0.129***     | 0.006           | 3,383,911 |  |
| Completed Secondary School          | 0.160             | 0.366           | -0.075***     | 0.004           | 3,383,911 |  |

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# List of Village Controls

|                                    | ST Share < 0.05 |          | ST Share    |          |        |
|------------------------------------|-----------------|----------|-------------|----------|--------|
|                                    | Mean            | St. Dev. | Coeff.      | St. Err. | Ν      |
|                                    | (1)             | (2)      | (3)         | (4)      | (7)    |
| Panel A: Distance Controls         |                 |          |             |          |        |
| Distance to Subdistrict HQ (in km) | 18.775          | 15.984   | 6.265***    | 0.367    | 27,302 |
| Distance to District HQ (in km)    | 48.339          | 30.167   | 24.433***   | 0.747    | 27,302 |
| Distance to Nearest Town (in km)   | 23.638          | 16.763   | 16.324***   | 0.443    | 27,301 |
|                                    |                 |          |             |          |        |
| Panel B: Amenity Controls          |                 |          |             |          |        |
| Population Density                 | 8.618           | 18.639   | -5.723***   | 0.244    | 27,129 |
| Total Population                   | 1358.640        | 1212.802 | -797.019*** | 19.322   | 27,302 |
| Total Area                         | 242.780         | 230.080  | 66.161***   | 6.232    | 27,302 |
| N - Public Primary Schools         | 1.409           | 0.940    | -0.467***   | 0.015    | 27,290 |
| N - Private Primary Schools        | 0.100           | 0.334    | -0.032***   | 0.006    | 27,290 |
| N - Public Middle Schools          | 0.700           | 0.583    | -0.404***   | 0.011    | 27,290 |
| N - Private Middle Schools         | 0.081           | 0.282    | -0.043***   | 0.005    | 27,290 |
| N - Public Secondary Schools       | 0.359           | 0.516    | -0.264***   | 0.009    | 27,290 |
| N - Private Secondary Schools      | 0.057           | 0.244    | -0.027***   | 0.004    | 27,290 |
| Any Health Outpost                 | 0.201           | 0.400    | -0.105***   | 0.007    | 27,290 |
| Major District Road                | 0.236           | 0.425    | -0.125***   | 0.008    | 27,290 |
| Other District Road                | 0.326           | 0.469    | -0.100***   | 0.009    | 27,290 |
| All Weather Road                   | 0.691           | 0.462    | -0.120***   | 0.010    | 27,290 |

# Tribal vs. Caste Women in Odisha



#### ST Share and Labor Force Participation for Men



# ST Share Groups

|                               |                     | Female Labor Force Participation (Caste Women) - SECC Data |                     |                     |                     |                     |  |
|-------------------------------|---------------------|--|---------------------|---------------------|---------------------|---------------------|--|
|                               | (1)                 | (2)  | (3)                 | (4)                 | (5)                 | (6)                 |  |
| Tribal Share (25-50%)         | 0.045***<br>(0.003) | 0.041***<br>(0.003)  | 0.037***<br>(0.003) | 0.035***<br>(0.003) | 0.012***<br>(0.003) | 0.009***<br>(0.003) |  |
| Tribal Share (50-75%)         | 0.059***<br>(0.004) | 0.052***<br>(0.004)  | 0.045***<br>(0.004) | 0.043***<br>(0.004) | 0.020***<br>(0.004) | 0.016***<br>(0.004) |  |
| Tribal Share (75-100%)        | 0.061***<br>(0.004) | 0.051***<br>(0.004)  | 0.045***<br>(0.004) | 0.042***<br>(0.004) | 0.026***<br>(0.004) | 0.025***<br>(0.004) |  |
| Mean (Tribal Share $< 0.05$ ) | 0.136               | 0.136  | 0.136               | 0.136               | 0.136               | 0.136               |  |
| Individual Controls           | Yes                 | Yes  | Yes                 | Yes                 | Yes                 | Yes                 |  |
| Distance Controls             | No                  | Yes  | Yes                 | Yes                 | Yes                 | Yes                 |  |
| Amenities Controls            | No                  | No   | Yes                 | Yes                 | No                  | No                  |  |
| Socio-Economic Controls       | No                  | No   | No                  | Yes                 | No                  | No                  |  |
| District FEs                  | No                  | No   | No                  | No                  | Yes                 | No                  |  |
| Subdistrict FEs               | No                  | No   | No                  | No                  | No                  | Yes                 |  |
| N - Individuals               | 3,029,801           | 3,029,801  | 3,029,801           | 3,029,801           | 3,029,801           | 3,029,801           |  |
| N - Villages                  | 24,705              | 24,705   | 24,705              | 24,705              | 24,705              | 24,705              |  |
| N - FEs                       |                     |  |                     |                     | 30                  | 461                 |  |

▶ Back

# **Robustness Checks**

|                            | Worked<br>(Past 12 Months) | HH Decision-<br>Making | Mobility | Disagreement -<br>Gender-Based<br>Violence |
|----------------------------|----------------------------|------------------------|----------|--|
|                            | (1)                        | (2)                    | (3)      | (4)  |
| Tribal Share               | 0.084***                   | 0.074**                | 0.115**  | 0.068                                      |
|                            | (0.024)                    | (0.035)                | (0.050)  | (0.042)                                    |
| Mean (Tribal Share < 0.05) | 0.459                      | 0.068                  | 0.114    | -0.020                                     |
| Individual Controls        | Yes                        | Yes                    | Yes      | Yes  |
| Socio-Economic Controls    | Yes                        | Yes                    | Yes      | Yes  |
| State FEs                  | Yes                        | Yes                    | Yes      | Yes  |
| Round FEs                  | Yes                        | Yes                    | Yes      | Yes  |
| N - Individuals            | 22,726                     | 21,156                 | 16,556   | 22,686                                     |
| N - PSUs                   | 2,855                      | 2,843                  | 2,385    | 2,855                                      |

# **KLK Indices**

#### 1. Index Components

- **Decision-Making** woman helps make household decisions about (1) expenditures on health, (2) whether she can visit natal home, and (3) how to spend her earnings
- **GBV** woman agrees that a husband is justified in beating his wife if she (1) goes out without permission, (2) neglects children, and (3) cook improperly.
- **Mobility** woman says that she can go to the following locations alone: (1) market, (2) health center, and (3) outside.
- 2. KLK Construction

$$\frac{1}{n}\sum_{1}^{n}\frac{\gamma_{i}-\mu}{\theta}$$

- *n*=number of subcomponents
- $\gamma_{is}$  the value of the subcomponent for respondent i
- $\mu$  ( $\theta$ ) the sample mean (sd) of the subcomponent for villages where Tribal Share is < 0.05.

Back - Caste-Tribe Comparison
 Back - NFHS Results

# Village-Level Distribution of Tribal Share in Odisha



• Graph excludes villages with no tribal people (33%) and only tribal people (10%).

▶ Back

# Classifying Adivasi Groups According to Gender Norms

Current method:

- 1. (Attempt) to restrict ethnographies to those that are well-reviewed in *American Anthropologist*, the flagship journal of the American Anthropological Association.
- 2. For each tribe, gather information on set of laws and norms for which we have evidence from other settings (e.g. plough, rules regarding location of settlement after marriage, etc.)

 $\longrightarrow$  Read sufficient number of ethnographies until find minimum 3 that agree on a given norm/ customary law for a given tribe.

3. Restrict to 10 most populous tribes in Central Region states (Madhya Pradesh, Maharashtra, Jharkhand, Chhattisgarh, Odisha, Gujarat, Rajasthan).

# Data-Driven Approach: Tribal Share Only Positively Correlated with Caste Flp When Tribal People Are Working



Caste FLP

|                                   | F                    | LP (Caste Wome       | n)                   |
|-----------------------------------|----------------------|----------------------|----------------------|
|                                   | (1)                  | (2)                  | (3)                  |
| ST Share                          | -0.096***<br>(0.005) | -0.113***<br>(0.005) | -0.159***<br>(0.006) |
| ST Share $	imes$ ST Working Share | 0.848***<br>(0.023)  | 0.854***<br>(0.023)  | 0.829***<br>(0.020)  |
| ST Working Share                  | 0.125***<br>(0.008)  | 0.126***<br>(0.008)  | 0.113***<br>(0.007)  |
| Mean (ST Share< 0.05)             | 0.116                | 0.116                | 0.116                |
| Individual Controls               | Yes                  | Yes                  | Yes                  |
| Distance Controls                 | No                   | Yes                  | Yes                  |
| Amenities Controls                | No                   | No                   | No                   |
| Socio-Economic Controls           | No                   | No                   | No                   |
| District FEs                      | No                   | No                   | Yes                  |
| Subdistrict FEs                   | No                   | No                   | No                   |
| N - Individuals                   | 2,881,208            | 2,881,208            | 2,881,208            |
| N - Villages<br>N - FEs           | 23,885               | 23,885               | 23,885<br>30         |

# IV Approach

|                                | Tribal Share<br>(1) | Working<br>(2) | Working<br>(3) |
|--------------------------------|---------------------|----------------|----------------|
| Forest Share                   | 0.204***            |                | -0.005         |
|                                | (0.013)             |                | (0.013)        |
| Adivasi Share                  |                     | 0.095***       |                |
|                                |                     | (0.035)        |                |
| Specification                  | OLS                 | 2SLS           | OLS            |
| Sample                         | Main                | Main           | ST Share=0     |
| Mean (Forest Share=0)          | 0.046               |                | 0.046          |
| Mean (Adivasi Share $< 0.05$ ) |                     | 0.005          |                |
| F-Stat                         | 251.5               |                |                |
| Individual Controls            | Yes                 | Yes            | Yes            |
| Distance Controls              | Yes                 | Yes            | Yes            |
| Amenities Controls             | No                  | No             | No             |
| Socio-Economic Controls        | No                  | No             | No             |
| District FEs                   | Yes                 | Yes            | Yes            |
| N - Individuals                | 3,042,133           | 3,020,001      | 2,386,921      |
| N - Villages                   | 24,559              | 24,549         | 15,663         |

# Household Surveys: Measuring FLFP

- Goal: Precisely measure women's take-up of work, holding demand constant
- ⇒ partner with land owners to offer daily agricultural jobs at a constant wage across villages to a random sample of women in each village, measure take-up
- ⇒ in complementary hhd survey, ask about wages, hours worked, weeks worked, and work locations
  - Prediction: Take-up will be relatively higher in the high tribal share, equal norms villages
  - If take-up unrelated to village type: suggests primary constraint is labor demand, not social norms constraining supply

#### **References I**

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#### FBA - NREGA Work

|  | NREGA               |                    |                    |  |  |
|--|---------------------|--------------------|--------------------|--|--|
|  | Ever                | Last 12<br>Months  | Last Month         |  |  |
|  | (1)                 | (2)                | (3)                |  |  |
| Tribal Share   | 0.520***<br>(0.174) | 0.288<br>(0.181)   | 0.110<br>(0.110)   |  |  |
| Mean (ST Share< 0.05)<br>N - Individuals<br>N - Villages | 0.391<br>972<br>50  | 0.172<br>972<br>50 | 0.054<br>972<br>50 |  |  |

#### **FBA** - Occupation

|  | Occupation         |                                 |                          |                            |  |  |
|--|--------------------|---------------------------------|--------------------------|----------------------------|--|--|
|  | HH<br>enterprise   | Casual<br>non-farm<br>wage work | Casual farm<br>wage work | Only<br>domestic<br>duties |  |  |
|  | (1)                | (2)                             | (3)                      | (4)                        |  |  |
| Tribal Share   | -0.045<br>(0.174)  | 0.014<br>(0.029)                | 0.178<br>(0.154)         | -0.001<br>(0.003)          |  |  |
| Mean (ST Share< 0.05)<br>N - Individuals<br>N - Villages | 0.228<br>972<br>50 | 0.023<br>972<br>50              | 0.406<br>972<br>50       | 0.000<br>972<br>50         |  |  |

#### FBA - Work After Marriage

|  | Did you ever perform after marriage? |                    |                    |                    |                    |                    |                    |                    |  |
|--|--------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--|
|  | NREGA                                | Self-<br>Employed  | Salaried           |                    |                    |                    |                    |                    |  |
|  | (1)                                  | (2)                | (3)                | (4)                | (5)                | (6)                | (7)                | (8)                |  |
| Tribal Share   | 0.559***<br>(0.156)                  | -0.069<br>(0.110)  | 0.121<br>(0.127)   | -0.034<br>(0.151)  | 0.124<br>(0.117)   | 0.021<br>(0.113)   | 0.044<br>(0.075)   | 0.049<br>(0.047)   |  |
| Mean (ST Share< 0.05)<br>N - Individuals<br>N - Villages | 0.385<br>972<br>50                   | 0.236<br>972<br>50 | 0.724<br>972<br>50 | 0.485<br>972<br>50 | 0.785<br>972<br>50 | 0.772<br>972<br>50 | 0.073<br>972<br>50 | 0.029<br>972<br>50 |  |

#### FBA - Work Last Year

|  | Did you ever perform in the last year? |                             |                     |                        |                      |                     |                    |                    |  |
|--|--|-----------------------------|---------------------|------------------------|----------------------|---------------------|--------------------|--------------------|--|
|  | NREGA                                  | Casual<br>non-farm<br>labor | Work on own<br>Iand | Work on<br>leased land | Casual farm<br>labor | Animal<br>husbandry | Self-<br>Employed  | Salaried           |  |
|  | (1)                                    | (2)                         | (3)                 | (4)                    | (5)                  | (6)                 | (7)                | (8)                |  |
| Tribal Share   | 0.010<br>(0.089)                       | -0.030<br>(0.068)           | 0.085<br>(0.164)    | -0.084<br>(0.135)      | 0.106<br>(0.123)     | 0.098<br>(0.130)    | 0.041<br>(0.073)   | 0.018<br>(0.020)   |  |
| Mean (ST Share< 0.05)<br>N - Individuals<br>N - Villages | 0.084<br>972<br>50                     | 0.103<br>971<br>50          | 0.603<br>972<br>50  | 0.310<br>972<br>50     | 0.646<br>972<br>50   | 0.665<br>972<br>50  | 0.040<br>972<br>50 | 0.015<br>972<br>50 |  |

# FBA - Work Last Year

|                        | Did you ever perform in the last year? |                             |                     |                        |                      |                     |                   |          |  |
|------------------------|--|-----------------------------|---------------------|------------------------|----------------------|---------------------|-------------------|----------|--|
|                        | NREGA                                  | Casual<br>non-farm<br>labor | Work on own<br>land | Work on<br>leased land | Casual farm<br>labor | Animal<br>husbandry | Self-<br>Employed | Salaried |  |
|                        | (1)                                    | (2)                         | (3)                 | (4)                    | (5)                  | (6)                 | (7)               | (8)      |  |
| Tribal Share (10-20%)  | 0.050                                  | 0.017                       | 0.057               | -0.006                 | 0.062                | 0.014               | -0.027            | 0.005    |  |
|                        | (0.038)                                | (0.025)                     | (0.066)             | (0.044)                | (0.044)              | (0.044)             | (0.016)           | (0.011)  |  |
| Tribal Share (20-100%) | 0.061                                  | 0.080                       | 0.058               | 0.102                  | 0.072                | 0.074               | -0.035            | -0.010   |  |
|                        | (0.048)                                | (0.061)                     | (0.055)             | (0.090)                | (0.067)              | (0.079)             | (0.023)           | (0.012)  |  |
| Mean (ST Share < 0.05) | 0.084                                  | 0.103                       | 0.603               | 0.310                  | 0.646                | 0.665               | 0.040             | 0.015    |  |
| Individual Controls    | Yes                                    | Yes                         | Yes                 | Yes                    | Yes                  | Yes                 | Yes               | Yes      |  |
| Village Controls       | Yes                                    | Yes                         | Yes                 | Yes                    | Yes                  | Yes                 | Yes               | Yes      |  |
| N - Individuals        | 972                                    | 971                         | 972                 | 972                    | 972                  | 972                 | 972               | 972      |  |
| N - Villages           | 50                                     | 50                          | 50                  | 50                     | 50                   | 50                  | 50                | 50       |  |

# FBA - Work Intervention

|  | Did not participate in WI because of |                    |                    |                                |                    |                      |  |  |
|--|--------------------------------------|--------------------|--------------------|--------------------------------|--------------------|----------------------|--|--|
|  | Participated<br>in WI                | HH chores          | Sick               | Other Work<br>Commit-<br>ments | Not Called         | Wedding              |  |  |
|  | (1)                                  | (2)                | (3)                | (4)                            | (5)                | (6)                  |  |  |
| Tribal Share   | 0.084<br>(0.203)                     | 0.128*<br>(0.072)  | -0.107<br>(0.065)  | -0.042<br>(0.088)              | 0.048<br>(0.092)   | -0.089***<br>(0.032) |  |  |
| Mean (ST Share< 0.05)<br>N - Individuals<br>N - Villages | 0.498<br>967<br>50                   | 0.056<br>972<br>50 | 0.094<br>972<br>50 | 0.052<br>972<br>50             | 0.086<br>972<br>50 | 0.059<br>972<br>50   |  |  |

# FBA - Beliefs

|  |                                       | Wife's Beliefs   |  | Husband's Beliefs                     |  |  |  |
|--|---------------------------------------|--|--|---------------------------------------|--|--|--|
|  | Believes that<br>women<br>cannot work | Community<br>share that<br>speaks badly<br>of working<br>woman | Community<br>share that<br>speaks badly<br>of husband of<br>working<br>woman | Believes that<br>women<br>cannot work | Community<br>share that<br>speaks badly<br>of working<br>woman | Community<br>share that<br>speaks badly<br>of husband of<br>working<br>woman |  |
|  | (1)                                   | (2)  | (3)  | (4)                                   | (5)  | (6)  |  |
| Tribal Share   | -0.222**<br>(0.103)                   | -1.364**<br>(0.556)  | -0.737<br>(0.673)  | -0.244*<br>(0.124)                    | -1.443<br>(1.115)  | 0.255<br>(0.774)   |  |
| Mean (ST Share< 0.05)<br>N - Individuals<br>N - Villages | 0.317<br>970<br>50                    | 3.954<br>969<br>50   | 4.233<br>970<br>50   | 0.378<br>921<br>50                    | 4.783<br>918<br>50   | 5.676<br>920<br>50   |  |