

Does Caste Still Matter? Gender, empowerment and inequality in 3 states of India

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Abstract

This paper examines the relationship between caste, economic status and gender inequality in three states of India: Bihar, Odisha and Tamil Nadu. We use detailed data on sub-caste groupings to explore the relationship between caste and living standards. Using an inequality decomposition framework, we show that within-group inequality contributes more to total inequality in each of the three states than between-group inequality. We also explore the relationship between caste and gender. We find overall patterns that are consistent with the literature on India: lower-caste women are more likely to participate in the labor force, have greater decision-making autonomy within their households and greater freedom of movement. There is however, considerable variability in the relationship across the three states. There is also a strong relationship between empowerment and economic status in some groups but not others. Overall, the results of the paper suggest that focussing on broad caste-categories such as “scheduled castes” and “scheduled tribes” can provide misleading insights, and masks the patterns at the sub-caste level.

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1. Introduction

It has been long known that caste affects economic inequality and poverty in India. Much academic literature shows systematic disparities across caste groups, with less privileged castes performing worse on economic indicators such as income, consumption, and education (Desai and Kulkarni 2010; Deshpande 2000, 2001, 2002; Government of India 1990).

Caste also affects the status of women. A long-standing anthropological and sociological literature highlights a negative relationship between gender inequality and caste inequality. This literature has observed that low caste women have more opportunities to participate in the labor force, fewer patriarchal restrictions on their mobility and more decision-making autonomy (Boserup 1970; Chakravarti, 1993; Chen 1995; Eswaran, Ramaswami and Wadhwa 2009; Kapadia 1995, 1997; Liddle and Joshi, 1986; Mencher 1988). Some recent scholarship however, has begun to question whether low-caste women are truly more empowered in the modern Indian economy (Deshpande 2002, 2007; Rao 2014). Deshpande (2002, 2007) uses data from large national datasets to illustrate that in contemporary India, low-caste women suffer material deprivation, low exposure to modern opportunities and numerous constraints on their safety, dignity and autonomy.

Rigorous empirical investigations into the relationships between caste and gender in India however, are quite limited. Such studies are constrained by three major methodological challenges. The first is the absence of detailed caste information in most large datasets. Most datasets classify households using broad caste categories such as “scheduled caste” and “scheduled tribe” (SC and ST) with no indicators to distinguish *within* scheduled castes and tribes, or *within* non-scheduled castes. Deshpande (2002, 2007) for example, focuses entirely on these broad categories for making comparisons. Narrower categories of *jati* (*sub-caste*) are more relevant for making rigorous welfare comparisons since caste is lived and practiced based on these identities. The lack of data on this issue has been a significant obstacle for studying caste in modern India. The largest investigation into caste inequality in India in recent times, conducted by the Government of India under the Mandal Commission in 1980 actually used data from the 1931 census to construct estimates of *jati* populations!

A second challenge for examining the relationship between caste and gender is the paucity of datasets that contain details on *both* gender and economic indicators. The National Family Health Survey, the District Level Household Survey and the Annual Health Surveys for example, all collect detailed information on the status of women, but limit the list of economic indicators to just a checklist of household assets and occupational status of household members. This makes it difficult to control for economic inequality in analysing the relationship between caste and gender inequality.

Most studies have had to construct district or state-level estimates to examine the trends in gender inequality in India and correlate these with changes in economic and demographic variables (Dyson and Moore, 1983; Dreze and Sen, 2001).

The third methodological challenge, largely faced by anthropologists and ethnographers, concerns geographic coverage. Most in-depth studies of caste, gender and income have typically focused on small samples in a single state or community (examples include Chen, 1995, Kapadia, 1995; Jeffrey and Jeffrey 1996; Seymour 1999; Srinivas 1977, 1979; and many others). Given the enormous geographic, demographic and cultural variations within India, this has limited the generalizability and usefulness of the findings to policy-makers.

This paper fills a gap in the literature by examining large datasets from three states – Bihar, Odisha and Tamil Nadu – to address issues of caste, gender and economic inequality in India. The datasets are unique in having not only broad geographic coverage, but also detailed information on jati categories, income and consumption indicators, the status of women and indicators of subjective welfare. Conducted between 2011 and 2013, the surveys served as a baseline for livelihoods programs that targeted the poor. They are thus representative of vulnerable populations who are currently eligible for a variety of poverty-alleviation programs in rural areas of these states.

We find evidence of caste-related inequality in all three states, with SC and ST populations being poorer than households from higher-ranked castes. We find stronger variation at the level of *jatis* rather than castes. Sub-group inequality decompositions estimate that more than 80 percent of total inequality is driven by inequality *within* jatis rather than *between* jatis or *between* castes.

Next, we examine the extent to which both caste affects the status of women, and test the hypothesis about the negative relationship between economic status and gender inequality in Indian society. Our data finds evidence in support of the long-standing hypothesis of the negative relationship between caste and women's labor market participation: in all three states, lower-caste women are more likely to participate in the labor force. Evidence on the negative relationship between caste and other measures of autonomy are more mixed. We find some evidence that lower-caste women are more mobile and more empowered to make their own decisions, but these patterns show significant variation by state. We also find evidence of variation between lower ranked castes.

Finally, we examine the extent to which economic advancement within caste groups can be linked to female empowerment. We regress indicators of empowerment on income, measured by consumption expenditure, within each state separately for each caste group. We find that income plays little role in determining empowerment in Bihar and Tamil Nadu; however, economic indicators and female empowerment have a

significant relationship for communities in Odisha. Overall, economic advancement predicts mixed results on empowerment with regard to making decision in their household while increases mobility for some low ranked communities in Odisha.

The rest of the paper is organized as follows. Section 2 discusses the literature on caste, empowerment and inequality. Section 3 describes our sample and data. Section 4 presents the main findings on inequality between castes; variation of female empowerment for castes and the role of economic advancement in female autonomy.

2. Literature Review

The Indian caste system is a system of social stratification that divides communities into hereditary *jati* groups (Smith, 2005). These *jatis*, more than 3000 in number, are distinguished from one another by property ownership, occupation, diets, and, often, ritual status.¹ Usually translated into English as "castes", the *jatis* are often grouped into four *varnas*: Brahmins, Kshatriyas, Vaishyas and Shudras. Certain groups, now known as "Dalits", have been historically excluded from the system and occupy the lowest rank within the system.

2.1 Caste and Inequality

Economic and political developments after independence have brought many changes to the caste system. Article 15 of the Indian constitution outlaws discrimination. Article 46 grants the state the responsibility of uplifting the status of disadvantaged groups. Furthermore, Articles 341 and 342 include a list of castes and tribes that would be entitled to state support: castes and tribes included in these two lists have been referred to as Scheduled Castes (SC) and Scheduled Tribes (ST) respectively.²

In recent years, affirmative action benefits have also been extended to groups called Other Backward Classes (OBC), i.e. castes that have faced similar disadvantages as SCs and STs, but have not previously been eligible for compensatory programs. The decision to reserve 27 percent of reservations for OBCs was made by the Mandal Commission of India. Appointed in 1980, the Commission was given the mandate of identifying disadvantaged groups in the country and recommending additional reservations. One of its main challenges however, was the lack of data on caste/*jati* populations. The 1931 Census data was used to determine overall estimates of the OBC

¹ Desai and Dubey (2012) find that more than 95 percent of Indians still marry within their caste networks.

² Article 46 of the 1950 Constitution pronounces "The State shall promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation."

population.³ Eleven criteria were used to estimate the levels of disadvantage faced by caste groups, which were then weighted to construct an aggregate index for each group in a state.⁴ Castes with scores below a particular threshold were labeled backward and thus, eligible for state support. In the contentious aftermath of the Mandal Commission reforms in 1990, a concern emerged that benefits would disproportionately accrue to a group of wealthy elites, often called a "creamy layer". In 1993, the Supreme Court of India specified criteria for this creamy layer. Recently, the National Commission for Backward Classes (NCBC) proposed income ceilings to ensure their exclusion from the state policies. In recognition of the growing heterogeneity in these groups, it also recommended the division of the 27% quota into 'backward', 'more backward' and 'extremely backward' OBC groups in proportion to their population (NCBC, 2015).⁵

Evidence on the effectiveness of reservations policies are hard to find, mainly because they were nationally implemented during an era of unprecedented economic growth and poverty reduction for India as a whole. Borooah, Dubey and Iyer (2007) find that job reservations raised the proportion of SC and ST individuals in regular salaried employment by about 5 percent. Gang, Sen and Yun (2008) find that persistent disparities in the consumption of SC, ST and OBC groups is largely driven by occupational and

³ The population of Hindu OBCs was derived by subtracting from the total population of Hindus, the population of SC and ST and that of forward Hindu castes and communities. The commission found that 52 per cent of the total population, belonging to 3,743 castes and communities, were backward. Assuming that roughly the proportion of OBCs amongst non-Hindus was of the same order as amongst the Hindus, the population of non-Hindu OBCs was also assumed to be 52 percent.

⁴ These criteria were as follows:

1. Castes/classes considered as socially backward by others;
2. Castes/classes which mainly depend on manual labour for their livelihood;
3. Castes/classes where at least 25 per cent females and 10 per cent males above the state average get married at an age below 17 years in rural areas and at least 10 per cent females and 5 per cent males do so in urban areas;
4. Castes/classes where participation of females in work is at least 2 per cent and above the state average;
5. Castes/classes where the number of children in the age group of 5–15 years who never attended school is at least 25 per cent above the state average;
6. Castes/classes when the rate of student drop-out in the age group of 5–15 years is at least 25 per cent above the state average;
7. Castes/classes amongst whom the proportion of matriculates is at least 25 per cent below the state average;
8. Castes/classes where the average value of family assets is at least 25 per cent below the state average;
9. Castes/classes where the number of families living in kuccha houses is at least 25 per cent above the state average;
10. Castes/classes where the source of drinking water is beyond half a kilometre for more than 50 per cent of the households;
11. Castes/classes where the number of households having taken consumption loans is at least 25 per cent above the state average.

⁵ Times of India, May 5, 2015. <http://timesofindia.indiatimes.com/india/Raise-creamy-layer-to-Rs-10-5-lakh-OBC-panel/articleshow/47155884.cms>. Retrieved on May 23rd, 2016.

locational characteristics, making the public sector job quotas rather limited in its potential for upliftment.

Another perspective on this issue comes from the analysis of large datasets to study within-caste and between-caste disparities. Desai and Kulkarni (2008) use four waves of data from the National Sample Surveys (NSS) to report a declining gap in educational attainment at the primary-school level, though not at the secondary and tertiary levels of education. Desai and Dubey (2012) analyze reported income from three waves of the IHDS survey to illustrate the continued persistence of caste disparities in educational attainment, land ownership, consumption expenditure and social connections, though the education indicators are improving over the time period of the survey.⁶ Thorat (2010) uses the 2004-05 NSS data to illustrate that poverty rates are highest among the ST groups, and this is followed by SCs and OBCs, and that this pattern repeats across all major religious groups. Deshpande (2001) uses data on assets and occupations from the NFHS survey to show not only that SC and ST groups are poorer, but that the variance in the SC and ST categories was much lower than the “others,” indicating a lower degree of intracaste inequality in these groups. Deshpande (2000) uses NSS data and restricts her attention to the state of Kerala, which has a long history of people’s movements and thus may have experienced an erosion of the caste system. She finds low to medium levels of overall inequality using the Theil index, and finds that high consuming elites are more confined to the higher castes than the SC or ST categories. Deshpande (2006) challenges the notion the OBC “creamy layer” by highlighting the stronger evidence for between caste inequalities rather than within caste inequalities. A related literature finds evidence of persistent discrimination towards lower castes, both in educational institutions (Hoff and Pandey 2006) and in labour markets (Thorat et al. 2010).⁷

This paper argues that the relationship between caste and inequality varies significantly by state. However, in all three states in our study, within-group variation at the jati level is more significant than between-group variation.

2.2 Caste and Gender

Analyses of caste and gender in India have often highlighted a consistent pattern: there is a negative relationship between caste and the overall status of women (Boserup 1970; Eswaran et al. 2009; Kapadia 1997; Mencher 1988; Srinivas 1996). Ethnographic studies have documented that higher-caste women often appear to be more likely to

⁶ Desai and Dubey (2010) report that upper-caste men aged 25–49 completed 8.18 years of education on average, while OBCs complete 6.68 years, SCs 5.23 years and STs 4.39 years. Annual household expenditure adjusted for family size by dividing with square root of the household size, is INR19,857 for upper castes compared to 17,961 for OBCs and 16,832 for SCs and 16,062 for STs. All of these differences are statistically significant at 0.01 level and control for relevant education and other background variables.

⁷ For a survey of mechanisms of discrimination, see Thorat and Newman (2010).

practice *purdah* (female seclusion), more likely to use the veil, and face significant restrictions on their mobility (Chen, 1995, Kapadia, 1995; Jeffrey and Jeffrey 1996; Seymour 1999; Srinivas 1977, 1979; and many others).⁸ In rural areas, women's labor market opportunities are closely tied to their caste-status, and more status brings fewer opportunities (Chen, 1995).⁹ Even with urbanization and the significant increases in female education, evidence from household surveys consistently finds that higher caste women have lower mobility and are less likely to be employed than their counterparts at the bottom of the caste structure (Das and Desai 2003; Eswaran et al. 2009; Kingdon and Unni 1997).

Many explanations have been provided for this pattern. The religious explanation emphasizes the need for higher caste women to maintain their purity (Dumont 1980). Another explanation emphasizes the importance of maintaining pure bloodlines in contexts where most wealth is inherited along patrilineal lines (Boserup 1970).¹⁰ Other economic explanations relate to the U-shaped relationship between wealth and FLFP (Goldin 1994): at low levels of wealth, FLFP rate are high due to economic necessity. As wealth increases, movement of production from the household to the wider market triggers an income effect. At higher level of income however, the income effect weakens and the substitution effect strengthens. There is also the effect of education. When women are poorly educated their only income opportunities lie in manual wage labour, which may be highly stigmatized. As education levels rise however, women may enter white-collar work, which does not suffer from such stigmas. As a result, the relationship between income and FLFP may resemble a U (Goldin 1994).

In India, this U-shaped pattern is reinforced by the caste system. It has been noted widely that the poorest women participate in the labour force due to economic necessity (Boserup 1970; Chen 1995; Mencher 1988). As income rises however, the decline in FLFP is not only driven by the usual income effect, but also by status-seeking behavior in which lower castes emulate wealthier castes by adopting practices and customs such as

⁸ Kapadia (1995, 1998) for example, finds that among the Pallar women of Tamil Nadu – a highly impoverished, landless and scheduled caste who largely perform agricultural labour – women form a major share of the local labour force and enjoy significant independence in the domestic domain as well as in negotiations with their employers. She reports that this pattern was not seen in the higher caste Vellalar women who worked in the rural synthetic gem-cutting industry as gem-cutters.

⁹ Chen (1995: 46) points out that villagers display a high-level of preoccupation with ensuring status-appropriate work for women and rank castes by "...whether they allow women to work in the following activities: only within their courtyards/homesteads, only on their own farms, only within the courtyards or homesteads of others, only at the farms of others, in other activities within the village, or in other activities outside the village. Using this ranking scale, the more secluded the woman, the higher her household's status or prestige (Chen, 1995:46)".

¹⁰ A good example of this is the use of the veil. In her book *Women's Role in Economic Development*, Boserup (1970) argued that in settled agricultural societies where land is inherited through patrilineal rules, it has been typical for the wives of landholders to veil and remain in seclusion in order to maintain the purity of the family's bloodline in the patrilineal system of property rights (Boserup 1970; Smuts 1995).

female seclusion in the process that is often referred to as “Sanskritization” (Eswaran et al. 2009; Srinivas 1977). The emulation of the practices of higher castes has been shown to have dramatic consequences for women (Srinivas 1976). A higher levels of income however, the usual income effect and substitution effect may kick in, along with additional influences such as the irrelevance of the caste system in highly educated urban areas where white-collar jobs can be secured (Das and Desai 2003; Deshpande 2007; Rosenzweig and Munshi 2003).

In recent years, these hypothesized relationships between caste and gender have been explored using large national datasets. As mentioned earlier however, most Indian national datasets categorize caste in broad categories: Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Castes (OBC) or other castes (forward castes). The relationship between caste and gender with these broad categories produces mixed results. In a series of papers, Deshpande (2001, 2002, 2007) uses such data to challenge the traditional hypothesis about caste and empowerment. She argues that SC women are worse off than upper-caste women along many different indicators of well-being: education, access to information, and exposure to domestic violence. Deshpande (2001) uses data from the NFHS-II survey to study the caste-gender relationship in numerous measures of well-being. She finds that for India as a whole, 77.3 percent of SC women and 69.7 percent of ST women have no education, which is substantially higher than the average for other castes, i.e. 51.6 percent. She also reports lower overall asset ownership by SC and ST households. Estimates of female employment do find that SC women are more likely to work: 60.1 percent of SC women, 48.3 percent of ST women and 70.2 percent of “Other” women report that they do not participate in the formal labor force. Deshpande (2001) argues however, that these estimates are inaccurate because they fail to capture the type of informal employment, and working conditions of women.¹¹ She argues that the employment opportunities and vulnerabilities of women, which are missing in most national survey datasets, undermine the hypothesis of greater labor market opportunities for SC and ST women. Using more indicators from the same dataset, Deshpande (2001) also argues that SC and ST women face higher levels of violence, and the process of Sanskritization has left them with less mobility and autonomy even when they do participate in the labor force.

In another study Deshpande (2002) uses the 55th round of the NSS data, conducted in 1999—2000 to show that the higher levels of poverty among SCs, STs, and OBCs undermine the status of women, as measured by their mobility: in these groups, women are only marginally better off (in terms of mobility) than higher-ranked castes.

¹¹ She also argues that the survey questionnaire was ill-suited for measuring female labor force participation because it did not capture the many types of income-generating activities that women may perform within the homestead, family farm or enterprise.

Here too, she finds that contrary to the prevailing wisdom, lower-caste women are the worst off on measures of consumption and exposure to domestic violence.

In similar work, Deshpande (2007) confirms these patterns using data from the NFHS-2. Compares estimates from the two rounds of the NFHS and shows that there is significant inter-caste disparity as well as regional variation in both rounds. Indicators on health and nutritional status reinforce this picture. She argues that the traditional distinction between lower caste and upper caste women, based on the relative egalitarianism and greater freedom of movement of the latter, needs to be revised.

In this paper, we exploit the jati-level variation in our data to find very different results than Deshpande (2001, 2002 and 2007). Moreover, we use surveys that have more detailed questions about female employment, mobility and autonomy than the large national datasets used in her papers. We find strong evidence for the negative relationship between caste and employment. We also find clear evidence of higher mobility and decision-making autonomy among lower-caste women. There are however, variations at the state-level as well as the jati-level, which we document in the remainder of the paper.

3. Data

The datasets used for our work were collected as baseline surveys for the impact evaluation of State Rural Livelihoods Projects in three states in India: Bihar, Odisha and Tamil Nadu between 2011 and 2013. Around 9000 households from seven districts in Bihar and 3000 households from ten districts in Odisha were surveyed in 2011; and 3900 households from ten districts were surveyed in Tamil Nadu were surveyed in first half of 2013.

The surveys were administered in seven districts in Bihar, and ten each in Odisha and Tamil Nadu (see Table 1). The surveys were designed to be representative of the target population of state-implemented livelihoods projects. The survey populations are concentrated in the poorest regions of the three states¹², and oversampled SC and ST households as intended by the project coverage. Thus, our analysis focuses on the patterns of caste inequality and gender inequality.

A cursory look at the summary statistics confirms that the three states are quite distinct from one another. Tamil Nadu is ranked high in terms of economic indicators: per capita income, human development indices and infrastructural development; Bihar and Odisha are among the poorest and least developed states in the country. While this

¹² For Tamil Nadu, the baseline was conducted to assess the impact of the second phase of intervention and therefore, the districts captured are relative less disadvantaged when compared to the districts where the first phase was rolled out in 2005.

study does not seek to highlight between-state comparisons, it is nevertheless important to keep in mind that the profile of a poor household and a poor individual can vary sharply in the three states we examine here.

Each household was administered a household questionnaire that had two components: (i) a general household module that included an NSS/LSMS¹³ type consumption module; and detailed information on the livelihoods portfolio and debt profile of the household, and (ii) a woman's module that was administered to an adult married woman in the household, and measured different metrics of women's empowerment. These measures included questions on decision-making within the household, and on women's mobility in the village and on women's participation in local government and civic action.

We restrict the sample to those households for which we have both a household and woman module¹⁴. This leaves us with a sample of 8973, 2490 and 3469 households in Bihar, Odisha and Tamil Nadu respectively. Since the purpose of this paper is to examine the between caste and subcaste variations, we restrict the sample to major caste groups in each state for which we have both, the household and woman modules. We, thus, use data on 8969, 2470, and 3384 households from Bihar, Odisha and Tamil Nadu.

Table 1 summarizes the caste distribution for our baseline data in the three states. Almost 70 per cent of the sample in Bihar, 26 per cent in Odisha and 30 per cent in Tamil Nadu comprise of SCs. As mentioned above, certain caste groups were over sampled in our datasets to fully take account of the targetting strategy of the projects and thus is over-representation of certain caste groups in every state. In particular, SCs in Bihar; SCs, and STs in Odisha and in Tamil Nadu, were oversampled; with the oversampling based on their population proportions in Odisha and Tamil Nadu. The Backward Castes (BCs) comprise the largest caste group in Tamil Nadu followed by SCs and Mostly Backward Castes (MBCs). Odisha is the only state with a decent sample on General caste, which forms the third largest caste category after Other Backward Castes (OBCs) and SCs. It is also the only state with highest share of ST households in our sample.

Table 1 contains the jati distributions considered for our analysis by state. We retain the major jati groups in the state when studying the jati level variations and club the small jatis into 'Others' category distinguished by caste. Musahar (26 per cent), Chamar (20 per cent), Dushad (16 per cent) and Yadavs (7 per cent) form the major jati

¹³ NSS (National Sample Survey) type consumption module was in Bihar and Odisha surveys, while LSMS (Living Standards and Measurement Survey) type consumption module was included in the Tamil Nadu survey.

¹⁴ Those households for which we could not match the women between the two modules have been dropped.

in our sample for Bihar, all of which belong to the SC caste group¹⁵. Khandayat (19 per cent), Chasa (8 per cent), and Pana (7.5 per cent) form the sampled castes in Odisha, which belong to General, OBC and SC castes respectively. In Tamil Nadu, Adi Dravidar (21 per cent), Vanniyar (13 per cent), and Vellalar, also known as Gounder (10 per cent) comprise our sample, and belong to SC, MBC and BC groups respectively.¹⁶

4. Results

4.1 Caste and Inequality

We decompose the inequality between and within caste groups using the measure developed in Elbers et al. (2008). The conventional measure of inequality decomposition¹⁷, a standardized entropy measure to capture between-group inequality, has its drawbacks.¹⁸ We use the measure proposed in Elbers et al (2008), referred to as the ‘alternative’ ELMO index (\widehat{R}_B), which is the between-group inequality normalized by the maximum possible between-group inequality given the current income distribution, relative sub-group sizes, and their rank order¹⁹. In what follows, we present both the conventional and the ‘alternative’ ELMO measure of between group inequality. Table 2 presents the conventional and ‘alternative’ ELMO measures of between-group inequality for per capita monthly consumption expenditure and land holding.²⁰

Several interesting insights emerge from the estimates of the ELMO measure. Note that there is significant variation across states. Overall inequality in monthly per

¹⁵ This is due to oversampling of SCs in the baseline data.

¹⁶ Tamil Nadu’s jati distribution looks fairly close to the population representativeness. Vanniyars are roughly 20%, Gounders around 8%, Thevar (10%) Vellalars (7%), SCs – 20 per cent.

¹⁷ An inequality measure, I , from a partition Π can be decomposed as $I = I_B(\Pi) + I_W(\Pi)$, where $I_B(\Pi)$ is the inequality from between group differences and $I_W(\Pi)$ is the inequality attributed to within group differences. The most common measures used for inequality decomposition come from the general entropy class (see Bourguignon 1979; Mookherjee and Shorrocks 1982). Given a particular partition Π of the sample and an inequality measure I , the conventional measure of between group inequality is given by $R_B(\Pi) = \frac{I_B(\Pi)}{I}$. For further details, refer to Cowell and Jenkins (1995).

¹⁸ This measure has two drawbacks- (i) comparability across states for groups because this measure is not unit free: it depends on the relative sizes and number of groups under examination; and (ii) it uses an extreme benchmark in the form of total inequality while assessing the importance of between group inequality for a certain partition (Elbers, et al., 2008).

¹⁹ The traditional ELMO measure is given by $\widehat{R}_B(\Pi) = \frac{I_B(\Pi)}{\text{Max}\{I_B|\Pi(j(n)),J\}}$; where denominator is the maximum between group inequality that can be obtained by reassigning individuals across J subgroups in partition Π of size $j(n)$. An illustration of this measure can be found in Lanjouw and Rao (2011).

In order to minimize the computational burden in estimating the maximum subgroup inequality, we use the alternative measure proposed in Elbers et al (2008), which we refer to as the ‘alternative’ ELMO measure. In addition to fixing the number and sizes of subgroups, it requires that subgroups be arrayed according to their observed mean incomes- preserving their rank order.

²⁰ Due to issues in measuring income directly, we use monthly per capita consumption expenditure as a proxy for income. Land holding is used as a proxy for wealth of the households.

capita expenditure is highest in Odisha (0.69) and least in Bihar (0.07) whereas the opposite holds for inequality in landholdings.²¹ Differences in per consumptions are at their highest in Odisha (10 per cent), followed by Bihar (3.8 percent) and Tamil Nadu (2.8 percent).²² This is consistent with the previous observation that the profile of poverty, and social context of poverty varies significantly across different states (Dreze and Sen, 2002; Deshpande 2002).

The most striking finding to emerge from Table 2 is that *within* group inequality contributes far more to total inequality than *between* group inequality in all the three states regardless of whether we partition the data by caste (panel a) or jati (panel b). Inequality decomposition at the caste-level also reveals between-group contribution to overall inequality of 1—5 percent, but inequality decomposition at the jati-level reveals between-group contributions of 4—10 percent.²³ In at least two of the three states – Bihar and Odisha – the ELMO estimates of jati-level inequality are higher than caste-level inequality. Given that our samples are representative of the poorest populations in these states, the estimates suggest that variations in consumption for these groups are much greater at the jati-level than the broad caste-level. This is a striking finding considering that the literature on this issue in India has largely emphasized the importance of between group inequalities and advocated for strong affirmative action policies for the poorest households to correct such disparities (Desai and Kulkarni 2010; Deshpande 2000, 2001, 2002; Thorat and Newman, 2010).

Several other insights also emerge from this analysis. The decompositions are suggestive of lower inequality among SCs in Bihar and STs in Odisha. Subgroup decompositions in Tamil Nadu also point a lower than overall inequality for some groups and a higher for the others. In particular, the low-ranked jatis in Pallar, Adi Dravidar, Pallars and other jati groups belonging to the broader SC category, exhibit a lower than overall inequality. These patterns are also evident if we use data on landholdings, a measure of long-term wealth. Our sample is characteristic of landless and marginal²⁴ landholding households. In Bihar, 70 per cent of the sample is landless²⁵, of which majority are the SCs whereas in Odisha, the majority are very small and marginal

²¹ We do find considerable overlap in the distributions of per capita incomes between castes in every state (figure not presented here). This only makes case to think that there are some lower caste households who's income must be as much as the income of some upper caste.

²² NOTE: ELMO modification to the inequality decomposition for between and within subgroup inequalities, unlike the traditional measure, does not necessarily increase with a finer partition is obtained from the original one (Elbers et al 2008).

²³ General Entropy measures (GE(a)) used for inequality decomposition- Lower values of 'a' represent greater sensitivity inequality amongst the poor; and the sensitivity rising towards the rich as 'a' increases. 'a' = 1 yields the well known Theil entropy measure, 'a' = 0 is the Theil L or mean log deviation. We present GE(1) measures here.

²⁴ Less than an acre of land

²⁵ The corresponding numbers for Odisha and Tamil Nadu are 50 per cent and 34 per cent respectively.

farmers, who tend to switch out of cultivation in the secondary season into more insecure wage labour. We observe that SCs constitute a greater proportion of marginal landholders in Bihar and Tamil Nadu. The distribution of landholding is negatively skewed confirming the state of landlessness in all three states. Overall inequality in landholding is high for all three states. The ELMO measure of contribution of between caste inequality to the total is around 5 per cent in Odisha and Tamil Nadu but 31 per cent in Bihar when we decompose by caste. The same rises to 9.3 per cent for Odisha, 15 per cent for Tamil Nadu and 33 per cent for Bihar.

In sum, the measures of inequality, are lower for per capita consumption expenditure than land holding. Subgroup inequality decompositions, on the one hand, reflect that some jatis (the lower ranked jatis) are more unequal than others and on the other suggest that contribution of between group inequality to the total are low in general, but higher when decompositions are done at the jati level than at the caste level. These inequality results highlight that there exist significant amount of within group inequality, even at the jati level and hence, advocate a need to understand the salience of the jati identity.

4.2 Caste and Female Empowerment

Next, we examine the relationship between caste and female empowerment. We measure empowerment as consistently as possible with the literature described earlier:

- Measures of intra-household decision-making: Women were asked about primary decision maker in the household on (i) purchase of household durables, (ii) children's education/ tuition, (iii) own livelihood activity, and (iv) their political vote. For each of these indicators, we consider two measures: whether a woman respondent provides any input into the decision, and whether she takes the decision herself, on each of the four decisions mentioned above.
- Measures of female mobility: Women were asked if they go to the general store, health centre, bank, and to visit their friends, neighbours and relatives²⁶.
- Labour force participation: We use the information collected from the detailed livelihoods module in the household general questionnaire, which contains employment activities of all working adults in the household for both rainy and non-rainy season.²⁷

Our main hypothesis, based on the literature described earlier, is that there is a negative relationship between these two types of variables: SC and ST women should

²⁶ For Tamil Nadu, mobility to bank is the only available measure.

²⁷ An adult is considered employed if (s)he is employed in any income generation activity in either season.

have the highest levels of labor-force participation rates, greater mobility and autonomy. This suggests that improved caste-status should be associated with declines in all these indicators of empowerment. We test the hypothesis using a linear probability model, with the poorest group in the population (SCs in Bihar and Tamil Nadu and STs in Orissa) treated as the omitted category.

We regress empowerment indicators on caste and then subsequently on jati identifiers. We expect negative coefficients on the caste- and jati-variables in these regressions. To address the role of confounding factors, we include a set of control variables and conduct the analysis separately for each state in our sample. Our controls include household level variables: per capita monthly consumption expenditure, wealth (first component of asset index and land holding), number of members in the household, education and gender of the household head; female headship, and a set of individual controls that includes education level, age, age squared and age at marriage of the woman respondent. For regression on employment status of women, we also add controls in marital status and distance of the village to the nearest town.

The results of our main specification for caste-level differences are reported in Table 3.1 (panels (a)—(c) correspond to each of the three states) and jati-level differences are presented in Table 3.2 (panels (a)—(c) correspond to each of the three states). We also report results on an alternate specification with panchayat fixed effects in Table 4.1 and 4.2 respectively.

A simple comparison of Tables 3.1 and 3.2 highlights the contrast between using caste and jati-level identifiers in such an analysis: broad caste-level categorizations fail to capture the salient differences that emerge in the *jati* level regression. Similar results are evident in Table 4.1 and 4.2, suggesting that the results are not due to location-specific factors. We discuss the specific results below.

Female Labour Force Participation

Several observations are noteworthy from Tables 3.1. In panel (a), which reports results for Bihar, we note significantly lower female employment among the forward castes relative to the SCs (12 and 16 percentage points respectively). A similar pattern emerges in Tamil Nadu (panel (b)): we see lower employment for MBCs on both metrics relative to the SCs (Table 3.1, panel (c)). However, the coefficients for SC, BC and FC are not statistically significant in Odisha (Table 3.1, panel (b)), suggesting that the relationship between caste and female employment is very different in this state than the two other states in our sample. A likely explanation of this is the significant tribal population in the poorest districts of the state, which is where our data is collected.

Table 3.2 presents the jati-level regressions for all three states. What is most striking about these results is the significant differences between jatis *within* broad caste

groups. In Table 4.2 (panel (a)) for example, we see that lower ranked Musahars in Bihar have significantly higher employment than any other jati.²⁸ This difference is pronounced at 25-38 percentage point more employment for Musahars, on average than the higher ranked rajputs and Brahamans in the state while between 7—15 percentage higher than Yadavs, Kurmis and Dhanuks that are classified as backward castes. Similarly, in Table 4.2 (panel (b)), we see that in Odisha, ST women are roughly 20—25 percentage points more likely to be employed than the higher ranked Brahamans, Karan, Khandayats and Goala. And in Tamil Nadu (Table 4.2, panel (c)), we find Adi Dravidars to exhibit higher employment than higher caste Vellalars, Yadavs and Reddiyars. There are also significant differences between the lower castes: Musahar women, in Bihar, 7-15 percentage points more likely to be employed than the Chamar, Dushad, and Sardar women, and Dobh and Kondara women in Odisha less likely to be employed than STs.

All these results hold when we control for panchayat-level-effects (see Tables 4.1 and 4.2), again suggesting that the overlap between caste and gender, though quite different across states, is not likely being driven by location-specific omitted variations in our analysis. Overall, we find evidence in support of an inverse relationship between caste-status and FLFP rates, but we emphasize that there is considerable variation at the jati-level. The relationship between caste and female employment is more pronounced in Bihar than the southern states, and the effect is concentrated among particular caste groups such as the Musahars.

Autonomy in Decision-Making

Next, we examine intra-household decision-making indicators (columns 2—6 of Tables 3.1 and 3.2). In Bihar (Table 3.1, panel (a)) higher caste-status does not bring significantly less autonomy in decision-making regarding durable goods, children's education or political decision. There is however, a 10—20 percent decline in women's participation in decisions about her own livelihood, which is consistent with the results reported earlier on the decline in female labor force participation in these groups in Bihar.

When we break down the Bihari caste groups into jatis (Table 3.2, panel (a)), we find an even more pronounced effect in the livelihoods variable. Brahman women, at the top of the caste order, are 37 percent less likely to work than their SC counterparts, and also 20 percent less likely to participate in that employment decision. Dushad, Chamar, Dobh women on average provide less input on their own livelihood activity than the Musahars, a caste group that is at the bottom of the state's social order (4-10 percentage points lower). Dushad and Dobh women, on the other hand seem to be providing more

²⁸ Except STs in our sample

inputs than Musahar on purchase of household durables and on children's education.²⁹ Not all the intra-household bargaining measures produce the same patterns. Although, Musahar women are providing more inputs in their households than many higher ranked jatis, we do not observe any significant differences on other three metrics of intra-household decision-making.

Similar mixed patterns are evident for Odisha (Table 3.1, panel (b)). Here we find that women from SC, OBC and FC provide at least 15 percentage point less inputs on intra-household decision making relative to more vulnerable STs, particularly on indicators of the purchase of household durables and own livelihood activity.³⁰ The results are statistically significant at the 1 percent level. These results persist when we examine the groups at the jati-level (Table 3.2, panel (b)). High caste Khandayat, Goala, Chasa and Guria women provide less input on purchase of household durables than more vulnerable ST group (Panel (b) Table 3.2).³¹ It is interesting however, that their intra-household bargaining power is not similarly strong in other areas such as children's education or politics. There is some evidence that women in the Karan and Goala groups do have less of a say in issues of their livelihood decisions. *None* of these variables are however, significant in the jati-level regression with panchayat fixed-effects (Table 4.2, panel (b)). This suggests that for the case of Odisha, location specific factors and issues specific to the tribal culture in the poorest regions of the state could be playing a key role.

The relationship between caste and intra-household decision-making authority is weakest for the case of Tamil Nadu when we group households by caste (Table 3.1, panel (c)). There is no evidence of a negative relationship between caste and female empowerment in this state, with or without panchayat fixed-effects. There is however, some more evidence when we break down groups at the jati-level (Table 3.2, panel (c)). We see that Adi Dravidar having women have a higher bargaining power in intra-household decision making than other SC counterparts and some of the major communities: Vellalar Gounders, Kallar and Reddiyar, Ambalakarar and other MBC women provide significantly 'less input' on decisions related to children's education and durables than Adi Dravidar (Panel (c) Table 3.2).

Overall, we note that evidence of a negative relationship between caste and female intra-household bargaining authority emerges only when we group households at the jati level. The evidence is considerably weaker when households are grouped at the caste-level. This is possibly because the negative relationship is concentrated within

²⁹ Such differences can also be seen among the lower ranked jatis in Tamil Nadu (Pallar, Adi Dravidar, and other scheduled caste jatis in Tamil Nadu and STs, Barui, Panas and Dobhs in Odisha), however, these differences are not significant.

³⁰ If we include panchayat fixed effects, then significance on SCs disappears.

³¹ However, this difference disappears when we include panchayat fixed effects (Table 4.1).

specific jatis. The caste variable computes averages over highly heterogeneous group, making it difficult to find consistent effects.

Mobility

Our final set of indicators for measuring female empowerment focus on female mobility. We once again find considerable variation in the relationship between caste-status and mobility across states, and stronger effects of empowerment at the jati-level than the caste level.

In Bihar (Table 3.1, panel (a)) we find that women from higher castes are 10--23 percent less likely to visit the general *kirana* store without family permission than the lower ranked Musahars. Women from EBC groups are also 6 percent less likely to visit the health center on their own. These results, particularly those on the opportunities to visit the health center, are more pronounced at the jati-level than at the caste-level (Table 3.2, panel (a)). Compared to women in the poorest SC groups (the omitted group), women from Brahman, Karan, Khadayat, Chasa and Kondara castes all report that they are more likely to need permission to visit health center. In almost all these instances however, women report that they are *more* likely to visit the bank. These effects persist with the inclusion of panchayat-level fixed effects (Tables 4.1 and 4.2, panel (a)): we continue to see stronger results in the jati-level regressions rather than the caste-level regressions.

Similar effects are evident in the case of Odisha (Table 3.1 panel (b)). We see differences in mobility between caste groups: STs in this state are more likely to visit the health centre than other caste and the differences are statistically significant at the 5 percent level.³² Women from BC groups are also 4 percent less likely to visit friends or family without permission, when compared to their ST counterparts. Classification by jati suggests that the overall relationship between caste and empowerment may be stemming from specific sub-caste groups (Table 3.2 (panel (b))). The negative relationship between caste-status and visitation of health centers for example, may be confined to higher-ranked Khandayat, Brahman and Karan sub-castes. Women from these groups are 7- 15 percentage points significantly less likely to visit a health centre relative to ST women, and the effects are statistically insignificant for other jatis.³³

The inclusion of panchayat-level fixed effects (Table 4.1, panel (b)) however, changes the results for Odisha significantly. We now see no statistically significant effects in the caste-level or jati-level regressions. This suggests that in this particular

³² to general store, bank, health centre and friend/relative/neighbour in Bihar and Odisha and to the bank in Tamil Nadu

³³ However, in Tamil Nadu, Adi Dravidar women visit the bank significantly less than Naidu and Parkavakulam.

state, the mobility of women from different caste-groups may be constrained by location-specific factors such as the location of the shops or clinic, the composition of the staff at these locations, or other village-specific attributes that may make it easier for some castes to access shops and health-care centers. Our results may also be affected by the high concentration of tribal groups in our sample and the special attributes of these poor districts.

The relationship between caste and mobility in Tamil Nadu is difficult to compare to the case of Bihar than Odisha because we lack comparable indicators on mobility. We only measure whether women have the freedom to visit a bank without permission. In Table 3.1 (panel (c)), we see that SCs in Tamil Nadu visit the bank less than BC and MBC groups. This however, is difficult to interpret because the result could be driven by the lower income of these poorer households, rather than limitations on women's mobility. In Table 3.2 (panel (c)) however, we continue to observe stronger differences between groups when we use the jati-level classification (rather than the caste-level classification). These effects persist when we include panchayat-level fixed-effects in our regressions (Table 4.1 and 4.2, panel (c)).

4.3 Empowerment, Caste and Income: Regression Results

The final step of our analysis is to examine the relationship between empowerment, caste and income. As discussed earlier, much literature on India argues that there is a negative relationship between caste-status and female empowerment (Boserup 1970; Eswaran et al. 2009; Kapadia 1997; Mencher 1988; Srinivas 1996). Economic considerations lie at the core of this hypothesized relationship: economic necessity drives women at the bottom of the caste-structure to participate in the labour force, and this presumably increases their autonomy, bargaining power and mobility. Increases in income for the poorest group would likely decrease their labour-force participation rates, as a result of status-seeking as well as an income effect associated with female labour more generally (Goldin, 1994). As discussed earlier, some have argued that increases in income for the lowest castes are most often associated with decreased female autonomy through the process of "sanskritization", i.e. a process through which lower castes emulate higher castes.

To test for this, we run separate linear regressions for each caste group in which empowerment measures are regressed on income. To address the role of confounding factors, we also employ a set of control variables: (i) respondent woman's characteristics: age, age squared, age at marriage, education category; employment status; (ii) household characteristics: gender of the household head, education category of the household head, number of members in the household; income measured by per capita monthly

consumption expenditure³⁴ in the household; wealth measured by the first component of the principal component analysis and land holding; and employment status of the women respondents; and (iii) village level characteristics: distance to the nearest town.

To examine the effect of income/wealth, we note the coefficient on the monthly per capita expenditure in the regressions discussed above, where each regression is carried out on the relevant caste sub-sample. To ensure consistency and comparability with the rest of the literature on caste, we stick to the broad caste groupings of SC, OBC, EBC, ST, and Other. Results on broad caste and jati groups are presented in panels (a) – (c) Table 5. This table presents the estimates of *only* income in each regression. A negative and statistically significant coefficient would suggest that for a particular caste, increased per capita household consumption expenditure is associated with declines in empowerment, as the literature predicts. We also test for the equality of the coefficient on income across castes: (a) test of joint equality of coefficients between all castes, and (ii) pairwise tests of equality of coefficients. A rejection of the test of equality³⁵ would suggest that the relationship between income and empowerment differs for the set of caste groups. We reject pairwise equality for effect of rise in income on BCs and EBCs in Bihar on all parameters of intra-household bargaining but politics, that is as income rises empowerment levels of EBCs fall more than BCs (panel (a), Table 5.1). Likewise, in Odisha ST women are likely to take less decisions on political front as their income rises and the effect of income is different from that on SCs, OBCs or Others (panel (a), Table 5.2).

Interestingly, in Odisha, STs' employment rises in response to an increase in income, with the effect significantly different from other caste groups. In Bihar (Odisha), we see strong evidence that for all castes other than the EBCs (OBCs), increased consumption is associated with lower probabilities of female employment (panel (a), Table 5.1 – 5.3, Column 9). Other indicators of empowerment however, contain a mixed set of patterns. In the state of Tamil Nadu the relationship between caste (both the broad caste and jati) and income is quite weak on all indicators of empowerment (Table 5.3). This could be driven by the overall higher levels of human development and the higher status of women in this state (Dreze and Sen, 2002). The dissimilarities between Odisha and Tamil Nadu, both southern states, are quite striking and at odds with the literature that emphasizes the North-South divisions rather than more granular regional variations within the country (Rao, 2014)

³⁴ normalized by 1000

³⁵ Test of equality of coefficients of coefficients is rejected if the *reported* p-value is less than the 'considered' level of significance i.e. at .01, .05 and .1 respectively.

5. Conclusion

This paper has examined the relationship between caste, economic status and gender inequality in three states of India: Bihar, Odisha and Tamil Nadu. We have used datasets that are representative of rural populations in these states who are eligible for livelihoods-programs. The datasets contain rich information on jati categories, income and consumption indicators, the status of women and indicators of subjective welfare.

We decompose total inequality in these samples by grouping households in two ways: by broad caste groups, and then narrower jati sub-groups. While categorization by caste is more consistent with the previous literature on this issue, we believe that the jati-level classification is more reflective of real social divisions in rural India. This gives us three major findings. First, regardless of whether we organize households by caste or jati, total inequality is largely driven by inequality *within* groups rather than *between* them. Second, we find that estimates of *jati* level inequality are consistently higher than at the caste-level. Third, inequality within *jatis* explains more of total inequality than inequality within castes. Jati-level inequality decompositions estimate that more than 80 percent of total inequality is driven by inequality within jatis rather than between jatis or between castes.

Next, we examine the extent to which both caste affects the status of women, and test the hypothesis about the negative relationship between economic status and gender inequality in Indian society. Our data finds evidence in support of the long-standing hypothesis of the negative relationship between caste and women's labor market participation: in all three states, lower-caste women are more likely to participate in the labor force. Evidence on the negative relationship between caste and other measures of autonomy are more mixed. We find some evidence that lower-caste women are more mobile and more empowered to make their own decisions, but these patterns show significant variation by state. We also find evidence of variation between lower ranked castes.

Finally, we examine the extent to which economic advancement within caste groups can be linked to female empowerment. We regress indicators of empowerment on income, measured by consumption expenditure, within each state separately for each caste group. We find that income plays little role in determining empowerment in Bihar and Tamil Nadu; however, economic indicators and female empowerment have a significant relationship for communities in Odisha. Overall, economic advancement predicts mixed results on empowerment with regard to making decision in their household while increases mobility for some low ranked communities in Odisha.

In summary, we find that caste continues to play a salient role in driving economic inequality as well as gender inequality, but there are significant variations by state and caste groups.

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