The Economics of Caste Norms: Purity, Status, and Women's Work in India*

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Abstract

Caste norms, the religious and social rules that underpin the Hindu caste system, impose strong constraints on behavior: women should stay secluded within the home, caste groups should stay segregated, and certain foods should not be eaten. This paper shows that caste norms are weakened when Hindus live alongside Adivasis, an indigenous minority outside of the caste system. Using a number of estimation strategies, including a historical natural experiment that led to local variation in Adivasi population share, we show that having more Adivasi neighbors decreases Hindus' adherence to a wide range of caste rules. Hindu women in Adivasi-majority villages are 50% more likely to work and have substantially higher earnings. Individuals higher on the caste hierarchy are less likely to practice "untouchability" towards those lower than them and villages are more likely to be integrated. We argue that Hindus adhere to caste norms as an investment in status within the caste system, and that this investment is less valuable when Adivasis—a lower-status out-group—form a larger share of the village population. Consistent with this explanation, caste norms are weaker in areas where British colonial policy led Adivasis to hold more land and political power, increasing the returns to social and economic interactions with Adivasis independent of their population share.

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1 Introduction

An estimated 100 million Indian Hindu women are disallowed from working.[1] Constraints on Hindu women's labor force participation are tied to the practice of female seclusion dictated by caste purity norms, the set of religious and social laws that govern behavior within the Hindu caste system (Chen, 1995; Field et al., 2010; Luke and Munshi, 2011; Jayachandran, 2015). Caste norms are closely tied to social status among Hindus: they are guided by the idea that certain people, activities, and foods are "impure" and that higher-caste rank individuals should seek to preserve own purity by avoiding contact with these polluting aspects of society.[2] Historically, many purity practices were observed primarily among higher-rank castes, but over time these norms have spread across the caste hierarchy (Srinivas, 1956). A large empirical literature documents the substantial equity and efficiency costs of purity norms for social and economic behavior in Indian villages.[3]

This paper asks whether Hindus' adoption of purity norms is lower when they live alongside an ethnic group that is *outside* of the caste system. Specifically, we study the integration of Hindus with Adivasis, an indigenous minority that makes up over a tenth of the rural population in India. Because Adivasis have historically been outside the Hindu caste hierarchy, they are not traditionally bound by caste purity rules.[4,5] On average, Adivasi women are 1.5 times as likely to work as Hindu women and they score higher along a range of empowerment indicators.[6] Adivasi men and women also do not follow core purity restrictions governing "untouchability" and caste food taboos.

The impact of Adivasi presence on Hindus' adherence to purity norms is ambiguous ex ante. The caste literature emphasizes that adherence to purity norms is a costly way to signal and maintain higher-caste status—and, for many groups, a strategy of upward mobility ("Sanskritization") (Srinivas, 1952, 1966). Canonical models of identity emphasize that such investments respond to local conditions: individuals adhere more when the social and economic returns to a given identity are higher (Akerlof and Kranton, 2000; Shayo, 2020). Since higher Adivasi population share often coincides with greater Adivasi control of local resources and influence, the returns to investing in high-caste identity may be lower in Adivasi-dominant villages, weakening incentives to maintain

[1] Estimate is based on responses to the 2011 India Human Development Survey, a nationally representative survey. Adult women are asked, "If you found a suitable job, would you be allowed to work?"

[2] All Hindus are divided into castes, which are hereditary, exogamous ethnic groups. There are approximately 3,000 distinct castes across India and, together, these ethnic groups account for 80% of India's population (Munshi, 2019).

[3] Previous empirical studies have documented wide-ranging impacts of caste purity norms, including on the efficiency of local governance (Munshi and Rosenzweig, 2015); inter-caste trade (Anderson, 2011); occupational decisions and discrimination in the labor market (Attewell and Madheswaran, 2007; Oh, 2023; Cassan et al., 2022); health and education outcomes (Munshi and Rosenzweig, 2006; Jayachandran and Pande, 2017; Spears and Thorat, 2019; Asher et al., 2024); and consumption behavior (Atkin et al., 2021).

[4] Today, a majority of Adivasis report that they practice Hinduism in addition to or instead of their traditional religious practices (IHDS 2011). However, for clarity of exposition, we will use the term "Hindu" throughout the paper to refer to ethnic groups who have traditionally been part of the Hindu caste system.

[5] Adivasis' self-identification highlights that a key feature of their society is the "absence of division of labour and caste system" and also the "relative freedom of women" (UN Subcommission on Prevention of Discrimination and Protection of Minorities. Working Group on Indigenous Populations, 1994).

[6] For instance, Adivasi women have more intra-household bargaining power and are more likely to participate in local governance (IHDS 2011).

costly purity practices. Classic accounts of caste similarly stress that adherence rises when caste status is locally valuable and falls when it is not (Srinivas et al., 1959). At the same time, exposure to an out-group may increase the salience of caste boundaries, raising the intrinsic (self-image) value of emphasizing caste distinctions and strengthening adherence to purity norms (Atkin et al., 2021). More broadly, much of the empirical literature in economics treats identity as fixed.[7] As a result, we have limited evidence on how identity—and the social distance between groups—evolves at the local level as groups coexist and local hierarchies shift over long horizons.

We use multiple empirical strategies, including cross-sectional evidence for the entire country and a historical natural experiment in the state of Odisha, to show that Hindu purity norms are weaker where Adivasis are present. In the countrywide data, Hindu women are substantially more likely to work, and less likely to report that social or religious constraints prevent them from working, in villages with higher Adivasi population share. As Adivasi share approaches one, Hindu women's work rates converge toward those of Adivasi women. Consistent with these patterns, Hindu women's earnings rise sharply with Adivasi presence, increasing by 87% relative to non-Adivasi villages. These labor-market patterns coincide with weaker adherence to female-seclusion norms. Hindu women in higher–Adivasi-share villages are significantly less likely to report veiling in front of men outside the household. They also report greater mobility and decision-making power within the household and the community. Beyond seclusion norms, Hindus in these villages are less likely to report that their caste community adheres to traditional restrictions such as prohibitions on widow remarriage and inter-caste marriage.

The key econometric challenge to our analysis is that Hindus and Adivasis settled non-randomly, leaving open the possibility that selection or unobservable features of Adivasi villages influence our results. In particular, Adivasi-dominant villages tend to be poorer and more remote, which raises the concern that differences in wealth, rather than in purity norm adherence, drive the results on women's work. We therefore examine a wider set of purity practices, including food and alcohol restrictions. Vegetarianism and teetotalism are key markers of purity, and therefore of social status, among Hindus. Yet when Hindus have more Adivasi neighbors, they are less likely to adhere to these taboos. Because meat and alcohol consumption increases household expenditures, these patterns are difficult to reconcile with a simple poverty-based account. Our estimates are also robust to the inclusion of caste fixed effects, alleviating concerns that historically less norm-adherent caste groups differentially settled in Adivasi areas. Finally, our findings are unlikely to be driven by contemporary sorting: over 90% of rural households report that their family has lived in the same village for at least 90 years.

To further isolate the role of norms, we extend our analysis by exploiting heterogeneity in gender practices *among* Adivasis. Adivasi tribes are unified by the fact that they exist outside of the caste system; at the same time, the over 700 tribes in India have distinct histories and traditional gender norms. We investigate whether the impact on Hindu gender purity practices is strongest when

[7]See, for instance, Alesina and La Ferrara (2005) which reviews the literature on ethnic diversity.

the Adivasi group present in the village is one with traditionally higher rates of women's work or more equal gender norms in other ways. Our primary measure of Adivasi gender equality is based on traditional agricultural practices: in line with prior work (Boserup, 1970; Alesina et al., 2013), we show that Adivasi tribes with hoe-based traditions exhibit higher female work today than historically plough-using tribes.[8] Importantly, hoe- and plough-Adivasi villages are similar on observables related to remoteness and infrastructure. Consistent with exposure to Adivasi norms shaping Hindu behavior, the effects on Hindu women's work and mobility are strongest in villages where the local Adivasi group comes from hoe-based (more gender-egalitarian) traditions.

In the next part of our analysis, we exploit a historical natural experiment that generated quasi-random variation in Adivasi population share across villages in western Odisha. Railroad expansion to Sambalpur in 1894 increased returns to cultivation and induced an influx of Hindu cultivators from neighboring districts into a previously Adivasi-majority area. The new station sat on the eastern bank of the Mahanadi River, and the only practical crossing in the region was at the station itself. Extensive historical evidence documents that, due to geographic constraints, Hindu migrants came primarily from districts to the west and south-west of the new railway station and were constrained by the river to settle on its western banks. Using the Mahanadi River boundary within a regression discontinuity design, we find that villages directly to the east of the river (where fewer Hindus settled) have an Adivasi population share that is 26 percentage points higher today. Given an average Adivasi share of 24% in villages west of the river, this implies that the Adivasi population share is now approximately twice as large on the eastern side.

The validity of our identification strategy relies on the assumption that the villages on either side of the river crossing were comparable prior to the introduction of the railroad and subsequent migration shock. We collect and digitize rich archival data to validate this assumption. Using individual land ownership records from 1887, we show that Adivasi presence was not statistically different in villages east versus west of river prior to the in-migration shock. We further show balance along a broad set of geographic characteristics, including those related to agricultural suitability. Archival records further suggest no meaningful discontinuities in rice prices of land value in the decades following railroad construction.

We conduct a survey with Hindu men across 150 villages in our regression discontinuity sample area to measure beliefs and practices related to purity norms. Consistent with the countrywide evidence, residing in a village east of the river (twice as high Adivasi share) is associated with 29% higher approval of women's work and lower perceived social costs of women's work among other same-caste households in the village. We also observe lower adherence to other purity practices, including food taboos and an index of inter-caste interaction.

Although Adivasis lie outside the caste system, they are widely viewed as low status: west of

[8]Boserup (1970) hypothesizes that, since hoe (i.e. shifting) agriculture utilizes more female labor, societies which previously employed this method of cultivation would have higher rates of female labor force participation in the present day. All Hindu caste groups traditionally and currently practice plough agriculture and almost all tribes practice plough agriculture today.

the river (low Adivasi share), 67% of Hindu households report practicing untouchability toward Adivasis. East of the river, this relationship looks very different: in these villages, Hindus are 82% less likely to practice Adivasi untouchability. Social network data point to closer day-to-day integration: Hindu households east of the river are more than three times as likely to have at least one Adivasi friend from whom they could borrow in an emergency, and more than twice as likely to have an Adivasi contact they would consult about agricultural inputs.

Having established that Adivasis' presence shapes caste-norm adherence among their Hindu neighbors, we turn to mechanisms. We interpret purity practices through the lens of the caste literature on Sanskritization: for many groups, adopting costly purity norms is a way to claim and maintain higher caste status, especially for those in the middle of the hierarchy (versus those at the bottom, who have a harder time escaping their low inherited social status).[9] Building on this view, we model adherence as a costly investment in higher-caste Hindu identity.[10] Our conceptual framework formalizes a simple trade-off: Stricter adherence increases proximity to high-status groups and can raise the benefits of caste status, but it also restricts behavior (including women's work) and makes ties with groups outside the caste sytem more difficult. The model therefore predicts that purity norms should weaken when Adivasis are more locally prominent or powerful, because (i) the returns to caste status are lower and (ii) the returns to maintaining social and economic ties with Adivasis are higher. A key additional implication is heterogeneity by caste rank: the response to Adivasi presence should be largest for middle-rank castes—who have strong incentives to invest in status when status returns are high, but are also close enough in the local hierarchy that changes in Adivasi prominence reshape the incentives they face.

We test this implication directly. In the national cross-sectional data, the effects of Adivasi presence on women's work, female seclusion, and other purity-related practices are concentrated among middle-rank castes. When Adivasis are locally dominant, middle-rank Hindus' behavior converges sharply toward that of Adivasis along multiple dimensions, while high-rank groups (including Brahmins) exhibit much smaller changes. To address concerns that this heterogeneity reflects unobserved village characteristics correlated with both Adivasi share and norm adherence, we also estimate within-village specifications that compare caste groups living in the same village. Consistent with the model, the relative decline in purity-norm adherence for middle-rank castes remains large even with village fixed effects, pointing to changes in local incentives rather than village-level confounders.

In a final exercise, we provide additional evidence for the model by exploiting variation in Adivasi political and economic power that is plausibly independent of Adivasi population share. In certain areas of present-day Chhattisgarh and Odisha, British colonial policy assigned the position of village watchman to the village's Adivasi priest (*jhankhar*), a role that came with tax-free land, recurring

[9] For discussion of Sanskritization (also termed Brahmanization), see Srinivas (1952); Ghurye (1969); Bayly (2001); Chakravarti (2018).

[10] Because identity is hard to measure outside the lab, we follow the identity literature in using costly adherence to group-prescribed behaviors as a revealed-preference proxy for identity investment (Atkin et al., 2021).

tribute payments, and local authority. We compare blocks inside and outside of these areas and show that watchman and non-watchman blocks are similar on observables and have statistically similar Adivasi population shares. Using the watchman position as an instrument for the presence of an Adivasi jhankhar today, we show that Adivasi power leads Hindus to exhibit weaker purity norms today: they are less likely to practice untouchability toward Adivasis, less likely to adhere to female seclusion norms, and less likely to follow caste food taboos. These findings align with the model's implication that norms weaken not only when Adivasis are more numerous, but also when the returns to interacting with Adivasis rise holding group size fixed.

An alternative explanation for our findings is that when Hindus are exposed to a larger population of Adivasis they are more likely to learn about the costs and benefits of adhering to purity norms (Miho et al., 2023; Jessen et al., 2024; Boelmann et al., 2025). Or, another possibility is that Hindus emulate Adivasi cultural practices because they wish to assimilate to the most commonly observed behavior among their peers (Bisin and Verdier, 2010; Bisin et al., 2016). Both of these mechanisms may contribute to the patterns we observe though we argue that they are unlikely to be a primary driver of our results. Without additional assumptions, these mechanisms would generally imply convergence in behavior *among* Hindus. Yet we find considerable heterogeneity in Adivasi-share impacts on Hindus by their caste rank. Nor do they naturally explain our watchman results, where purity norms weaken when Adivasi political and economic power rises even though Adivasi population share is unchanged. Finally, a salience channel—under which out-group exposure heightens caste boundaries and thus strengthens purity norms—predicts the opposite sign from what we find.

This paper contributes to three bodies of work in economics. First, our findings shed light on the local determinants of cultural norms and beliefs. There is a small but growing number of empirical studies that evaluate the impact of individual immigrants on shaping a specific cultural trait of the native majority (Miho et al., 2023; Jessen et al., 2024; Boelmann et al., 2025; Giuliano and Tabellini, 2020). Importantly, we document a case where cultural practices of a higher status group converge to those of a lower status group. While the emulation of practices associated with high-status groups has been documented across several studies (La Ferrara et al., 2012; Bisin et al., 2016; Fouka, 2020), the question of whether cultural practices are shaped from below has received far less attention. We also contribute to our understanding of how culture evolves at the local level (Bisin and Verdier, 2023). This paper is, to the best of our knowledge, the first to document empirically and in a causal setting the remarkable heterogeneity in cultural practices that can emerge across localities within a narrow geographic area, among individuals with the same ethnic background.

Separately, our results contribute to the growing empirical literature on the role of gender attitudes in constraining women's work (see Jayachandran (2015), Giuliano (2021), and Jayachandran (2021) for reviews). A number of studies document the deep roots of gender attitudes and the strong persistence of these attitudes over time (Fernández and Fogli, 2009; Alesina et al., 2013;

Carranza, 2014; Teso, 2019; Becker, 2021). We add to these findings by documenting how attitudes evolve in the medium-run, as the result of the integration of two groups with different religious and ethnic backgrounds. As such, our findings also relate to a set of papers that document the process of cultural change and the malleability of norms and beliefs (Fernández et al., 2004; Fernández, 2013; Bursztyn et al., 2020; Field et al., 2021; Dhar et al., 2022).

Finally, we add to our understanding of the economic and social implications of caste. Previous work has documented the influence of caste norms on occupational preferences (Oh, 2023; Cassan et al., 2022); discrimination (Hanna and Linden, 2012; Lowe, 2021); health and education outcomes (Munshi and Rosenzweig, 2006; Jayachandran and Pande, 2017; Spears and Thorat, 2019; Asher et al., 2024); and on the efficiency of inter-caste trade (Anderson, 2011) and local governance (Banerjee and Pande, 2007). In demonstrating that Hindus' adherence to purity norms responds to Adivasi presence, our findings connect to recent studies that document the endogeneity of caste identity to social and economic incentives (Cassan and Vandewalle, 2021; Atkin et al., 2021; Munshi and Singh, 2024). Differently from prior work, our focus is on how the presence of an out-group impacts purity norm adherence and social stratification within the Hindu caste community.[11] Our novel survey data allows us to document how beliefs, norms, and caste hierarchy vary at the local level depending on village composition.[12]

The rest of this paper proceeds as follows: Section 2 discusses the historical background and conceptual framework; Section 3 gives an overview of our data; Section 4 presents descriptive statistics on the take-up of purity norms across caste and Adivasi groups and our estimates of the impact of Adivasi presence for our countrywide sample; Section 5 extends our analysis of this same question to our spatial regression discontinuity setting; Section 6 presents evidence of impact of Adivasi land and political power from the watchman analysis; and Section 7 concludes.

2 Historical Background

In this section, we offer historical context on the integration of Adivasi and Hindu societies and on the Hindu caste system. We then bring these historical insights together to motivate a conceptual framework for understanding how the presence of Adivasis would impact Hindus' adoption of caste purity norms.

2.1 Social Hierarchy and Cultural Practices in Adivasi-Hindu Villages

India is home to at least 3,000 Hindu castes and more than 700 Adivasi tribes; on average, there are 12 distinct ethnicities (tribes and castes) represented in a village.[13] Historians and anthropologists emphasize two key determinants of social capital and social relations within Indian villages: (1)

[11] Several papers have studied the economic implications of caste networks (see Munshi (2019) for a review), though much of this work has focused on within-caste ties; we add to these findings by demonstrating the importance of inter-caste networks and relationships.

[12] Whereas prior work typically take the local distribution of social groups as given, we address selection concerns by exploiting a historical natural experiment which generated quasi-random variation in village ethnic composition.

[13] Estimate of number of distinct communities in each village is from the 2011 IHDS survey.

caste hierarchy and (2) groups' relative size, political power, and economic resources. Below we discuss each of these as well as their relation to caste purity norms.

Social Hierarchy within the Caste System The caste system is a system of social stratification. Each Hindu person is associated with a caste (also termed *jati*), which is a hereditary, endogamous ethnic group. Traditionally, each caste was also associated with a specific occupation. Going back at least as far as 1500–500 BCE, there is evidence of a broad ranking of these castes based on concepts of purity and pollution. The justification of this ranking, as well the implications of it for activities of daily life, are summarized in several texts but most notably in the Manusmriti, which was written in 200 BCE. The Manusmriti is a set of social laws written by Brahmin scholars—Brahmins are the priest caste and the highest ranking group—that was later codified as religious law for all Hindus by the British colonial government (Agnes, 1999).

Manu describes a society divided into four classes, or *varnas*. Brahmins sit at the top while Dalits (a term that refers to a group of castes) are considered to be so impure that they are excluded from this structure entirely. Across rural India, around half of the Hindu population belongs to castes that sit between the Brahmins and the Dalits in the social hierarchy.[14] The British colonial government, in their 1901 Census of India, later expanded upon the four-fold *varna* classification and introduced a written ranking of every caste by region. Historians (and later census officers) argue that the 1901 ranking did not accurately reflect the multitude of localized rankings across villages and regions at the time (Ghurye, 1969; Bayly, 2001; Dirks, 2011).[15] Regardless, and potentially due to the very fact that the census ranking was created,[16] we find that the 1901 census rankings closely match the current caste hierarchy: in our RDD sample of 150 villages, we ask elders from different castes to rank all groups in their village and find that the rankings are almost identical to those from the 1901 census.

Sanskritization and the Adoption of Purity Norms The above discussion of caste rank highlights the fact that, to a large extent, an individual's perceived purity is fixed at birth. That being said, there is also some scope for upwards or downwards social mobility within the caste system; this mobility is a function of an individual's (and their fellow caste members') adherence to caste purity norms. Manu, over more than 2,000 verses, gives clear prescriptions for behavior required to maintain purity. These prescriptions can be categorized into the following areas: (a) women's role in society and the home, (b) marriage rites, (c) food taboos, (d) inter-caste interactions, and (e) occupational guidelines (Chakravarti, 2018). A majority of the prescriptions are

[14] The *Kshatriyas*, or so-called "warrior" castes, are ranked second in the Manusmriti and similarly tend to be ranked immediately after the Brahmins in local caste hierarchies.

[15] For instance, J. H. Hutton, the 1931 census commissioner of India, wrote that "All subsequent census officers in India must have cursed the day when it occurred to Sir Herbert Risley [the 1901 census commissioner], no doubt in order to test his admirable theory of the relative nasal index, to attempt to draw up a list of castes according to their rank in society. He failed, but the results of his attempt are almost as troublesome as if he had succeeded" (Hutton, 1933).

[16] See Dirks (2011) for a detailed discussion of the social, political, and economic impacts of the creation the caste ranking in the 1901 census.

directed specifically towards Brahmins; Manu makes a distinction between how Brahmins should behave and how lower-caste individuals should behave. For instance, while widow remarriage is forbidden for Brahmins in the Manusmriti (a woman is seen as impure upon the death of her husband), it is encouraged for lower castes. Similarly, castes aside from the Brahmins historically did not practice taboos against meat or alcohol.

The fact that Brahmins, the highest-ranking caste, have traditionally held different cultural practices and norms than other castes gives individuals lower on the hierarchy a clear path for seeking higher caste status: emulating Brahmin purity norms. This practice, which is termed *Sanskritization* or *Brahmanization*, is described by the anthropologist M.N. Srinivas (1952) in the following way: "A lower caste [is] able to rise to a higher position in the hierarchy by adopting vegetarianism and teetotalism [etc.]... in short, it [takes] over as far as possible, the customs, rites and beliefs of the Brahmins."

High caste status has historically offered clear economic advantages. The British colonial government assigned government jobs, decided court cases, and allocated resources in ways that preferenced higher ranked castes (Bayly, 2001; Dirks, 2011; Piketty, 2020). Notwithstanding the current affirmative action policies for lower ranked castes, caste-based discrimination continues to offer material benefits to higher ranked castes today (Munshi, 2019). Ethnographic evidence also points to the fact that individuals enjoy the feeling of respect or superiority that comes from being high status (Srinivas, 1966).

Bringing these features of the caste hierarchy together, Pocock (1957) summarizes the caste system as a system of "inclusion and exclusion... [in which] each caste tries to include itself with the higher castes and, at the same time, dissociate itself from the lower castes. This process being widespread, the castes above refuse to accept the inclusion just as the castes below try to elbow their way in."

Adivasis and the Locally Dominant Caste Adivasis are heterogeneous in terms of their lineage systems, kinship structures, marriage customs, and other social institutions; in many ways, the key characteristic that unites Adivasi tribes is the *absence* of caste. Consistent with a broad ethnographic literature, our own qualitative data collection shows that Adivasis generally consider themselves to be outside the caste system and therefore not subject to purity norms.[17,18]

Qualitative scholars also emphasize that for Adivasis and for low-rank caste groups, status within a village greatly depends on their dominance — where dominance is measured in terms of land ownership or population share (Srinivas, 1966; Dumont, 1970). For example, Skoda et al. (2013) in an ethnography of the relationship between Adivasis and Hindus in villages in northern Sambalpur, writes that higher status Hindus "concede" to accept water from groups ranked below

[17] See Xaxa (2008) for a review of ethnographic studies on Adivasi identity and, in particular, on Adivasi attitudes towards gender.

[18] This point is also highlighted in Adivasis' self-identification submitted to a UN Commission on Indigenous Peoples (1994), which includes the following descriptors: "Relative freedom of women within the society; Absence of division of labour and caste system, [and] Lack of food taboos."

them when that group holds a majority of the land. Similarly, the 1911 census commissioner for Central India observed that "Many Brahmans are willing to serve an aboriginal *of good standing and wealth*... The fact that the tribes are not looked upon by Hindus as impure aids the process" (emphasis our own) (Marten, 1912).

2.2 Conceptual Framework

Taken together, the historical and ethnographic evidence point to a tension in the caste system between, on the one hand, establishing high purity status and, on the other, aiming to maintain ties with those who have political or economic power (who may or may not be high in purity rank). We formalize these insights in a simple conceptual framework of cultural identity and use the framework to consider why and how the presence of Adivasis would impact Hindus' adoption of caste purity norms. Our approach builds on Akerlof (1997)'s model of social status and social interactions, which highlights that social and economic exchange decrease with social distance. We present the formal framework in Appendix B and provide a summary here.

Our starting assumption is that jatis and tribes can be ordered in terms of their inherited social distance to Brahmins, the priest caste and highest status Hindu caste. Following Akerlof (1997), we assume that social interaction, which is represented as mutually beneficial trade between individuals, decreases with current and inherited social distance. Social position is sticky (since inherited distance matters), but there is scope for mobility: individuals can reduce current distance with members of a given jati or tribe by investing in (potentially costly) adherence to the cultural norms and behavior of that group. Social interactions are also more beneficial when they are with individuals from a jati or tribe that is more economically, politically, or numerically dominant in the village.

Individuals value high purity status because it is associated with social closeness to high-caste groups which typically control considerable economic and political power. However, in the presence of a distinct social group, such as Adivasi tribes, which may be lower in ritual status but which can also control resources, the value of maintaining social closeness with high-caste Hindus is lower.

Mapping the model to our empirical context, we derive the following testable predictions:

1. *Adherence to purity norms decreases with inherited social distance to Brahmins.* Higher-rank groups are more likely to adhere to purity norms than lower-rank groups, since the benefits of adherence are greater for them. Consistent with this prediction, Figure 1 shows a monotonic relationship between adherence to caste purity norms and inherited caste rank.

2. *Average adherence to purity norms decreases as the material payoffs from interacting with an outgroup increase.* In our setting, as the material payoffs from interacting with Adivasis increase, the returns to adhering to purity norms fall: the benefits of engaging with Adivasis increase, while the relative benefits of maintaining proximity to higher-rank groups diminish. Channels that could increase the returns to payoffs from interacting with Adivasis include

the share of Adivasis in the village as well as the political power or economic resources of Adivasis.

3. *The effect of an increase in outgroup share on adherence to purity norms follows an inverted U-shape with respect to rank.* Hindus of low rank already exhibit low adherence, so further decreases in response to higher outgroup share will be limited. At the other extreme, higher-rank caste groups are socially distant from Adivasis and thus have little incentive to adjust their behavior. The largest decreases in adherence, therefore, occur among middle-rank groups.

Moreover, the effect of outgroup share on the *outgroup's* own behavior is theoretically ambiguous. If the outgroup begins with high social distance from all other groups, then adherence will remain low regardless of its share. By contrast, if potential gains from interaction with others are substantial, an increase in outgroup share may induce changes in norms adherence.

Alternative Mechanisms Our framework assumes that Hindus adopt purity norms as a means of upward social mobility. It is useful to understand how predictions regarding the presence of Adivasis would differ under alternate assumptions of what drives Hindus' choice of cultural practices. One view proposed by both anthropologists and within the economics literature is that adoption of purity norms reflects deeply held religious or moral beliefs (Dumont, 1970; Jayachandran, 2021). Under this assumption, we would not necessarily expect the presence of Adivasis to shape purity norm practice. A second view, and one that would be consistent with canonical models of norms transmission (Bisin and Verdier, 2010, 2023), is that Hindus and Adivasis select their cultural practices by imitating the most commonly observed behavior amongst their peers. This could explain average convergence to Adivasi cultural practices in Adivasi-majority villages, though it would not explain the heterogeneity in Adivasi share impact by rank.[19]

Finally, we note a distinction between our approach and others in the literature where individuals choose their cultural identity out of a desire to establish difference but where, unlike in our setting, an increase in the population share of a lower-status group is assumed to lead to backlash; or, in other words, to the increased take-up of own-group cultural practices (Bisin et al., 2016). These approaches do not generally take into account the economic costs of maintaining social distance from other groups (Advani and Reich, 2015). In the final section of this paper, we further test this important assumption of our model by turning to a setting where Adivasi share stays constant but where the economic returns to interacting with Adivasis increases.

3 Data and Measurement

Our analysis brings together data from several sources. We describe the main datasets here and provide information on secondary sources later on as they become relevant in the text. Addi-

[19] Bisin and Verdier (2010)'s canonical model of horizontal norms transmission assumes that we select behavior based on imitating peers or role models, rather than persons against whom we express animosity. Given the baseline level of discrimination against Adivasis, a prediction of convergence towards Adivasi norms would first require that Adivasis' presence leads to reduced prejudice against their group (Bisin et al., 2016). "Contact hypothesis" models could deliver this prediction (Allport, 1954).

tional detailed information on sample construction and variable definitions is included in the Data Appendix.

Indian Household Development Survey (IHDS) We use the 2011 round of the IHDS to generate countrywide evidence on Hindu caste households' take-up of a broad set of purity norms. We restrict our sample to rural areas, which includes 21,185 households across all Indian states. The IHDS survey includes rich data on households' cultural practices, occupational outcomes, and other demographic information. We classify cultural practices as purity norms by directly matching the IHDS survey questions to the code of behavior contained in the Manusmriti. As discussed in Section 2.1, caste purity norms are summarized in the Manusmriti, a 200 BCE text of religious codes. The Manusmriti contains over 2,000 rules on personal behavior, which are classified according to the following categories: (a) women's seclusion; (b) marriage rites; (c) food taboos; (d) inter-caste interactions; and, (e) permitted occupations. We review all survey questions in the IHDS and match these to codes from each of categories (a)-(d). For instance, the Manusmriti directly prohibits widow remarriage among Brahmins: *By twice-born men [Brahmins] a widow must not be appointed to (cohabit with) any other (than her husband); for they who appoint (her) to another (man), will violate the eternal law* (Chapter IX, Verse 64). We match this rule to the IHDS household survey question, "In your community (jati), for a family like yours, is it permissible for a widow to remarry?" We exclude norms pertaining to traditional occupations (category e) from our analysis since these rules are less applicable in the present day, especially in rural areas where the majority of households practice agriculture. We also aggregate variables into purity norms categories (female decision-making, female mobility, food taboos, marriage rules, and inter-caste interactions) constructed using standardized indexes per Anderson (2008).

While our primary analysis focuses on the sample of Hindu caste households in the IHDS, we additionally examine the relationship between Adivasi population share and Adivasi households in Table A10.

Classifying Hindus by Caste Rank Our conceptual framework predicts that the impact of Adivasi share will differ based on jatis' initial status in the Hindu caste hierarchy. To classify castes (jatis) by status rank, we follow the ordering given in the 1901 Census of India. That census ranked all castes separately by region and by social distance to Brahmins, the highest-ranked caste.[20] We digitize the 1901 rankings and match to households in the IHDS survey.[21] For our main analysis, we group castes into three categories: high-, middle-, and low-ranked.[22] Across India, 23% of Hindu

[20] The Indian government categorizes Hindu castes into the following categories: General, Other Backward Castes, and Scheduled Castes. These rankings are used for affirmative action programs and other administrative purposes, but do not necessarily correspond to purity rankings or social relations between castes (Munshi, 2019).

[21] The caste question in the IHDS survey is free-text. Our match to the 1901 census lists is made possible by the authors of Cassan et al. (2022), who cleaned and harmonized the text entries for all IHDS sampled households and generously shared this data with us.

[22] High-rank castes correspond to those within the Brahmin and Kshatriyas varnas; middle-rank castes correspond to those within the Vaishya and Shudra varnas; and, low-rank castes correspond to those formerly referred to as "untouchables."

households fall into the high-rank category; 51% are middle-rank; and, 25% are low-rank.

Classifying Adivasis by Traditional Agricultural Practice For our heterogeneity analysis by historical Adivasi plough use, we focus on central Indian states: Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, and Rajasthan. Adivasis in central India are a mix of plough- and hoe- practicing groups (today all practice plough agriculture) and, together, Adivasis in this region make up 64% of the total Adivasi population in the country.

We construct a dataset that contains information on historical cultivation practices for the 73 main Adivasi tribes in the region. The dataset is handcoded based on a large number of ethnographic sources and administrative documents from the British colonial government; see Data Appendix C.4 for a list of sources. The IHDS asks households to report the name of their caste or tribe, which we use to hand match to our ethnographic dataset. Using the plough- versus hoe-categorization of Adivasi households in the IHDS, we then calculate total Adivasi population share of each type in a given village.

Spatial Regression Discontinuity Household Survey We conduct a survey of 926 married Hindu men across 150 villages located within 25 kilometers distance to either side of the Mahanadi River (our RDD sample). Data Appendix C.2 provides detailed information on sample construction. We interview men about their wife's labor force participation; their personal beliefs about women's work and their perception of community beliefs about women's work; as well as their practice of additional caste purity norms, including food taboos and the untouchability of Adivasis. To shed light on mechanisms, we include a social network module. Motivated by our conceptual framework, we restrict our survey sample to men from "middle-rank" Hindu castes. We supplement this information with a survey of village elders to elicit information on local hierarchies and community norms.

Historical Land and Village Records In order to validate key identifying assumptions for our spatial regression discontinuity design, we collect and digitize historical individual land records and village records for our study area. These land and village records contain information on the caste and tribe of each landowning household in 1887 as well as the caste and tribe of the village headman at that time. The records were collected as part of the British colonial administration's land settlement operations and are maintained and stored in the District Settlement Records office in Sambalpur.

Sarpanch and Ward Member Phone Survey We conduct a phone survey with 3,042 sarpanches and ward members across 1,358 villages in Sambalpur district and neighboring blocks in Bargarh and Subarnapur districts to span areas inside and outside of watchman areas. As part of the survey, we collect information about village community behavior, including Hindu-Adivasi integration, respect for working women, and food restrictions. The phone survey data is used in our analysis of the effect of Adivasi land and political power on Hindu behavior (Section 6).

4 Country-Level Analysis

4.1 Social Hierarchy and the Take-up of Caste Purity Norms

Before turning to our main empirical analysis, it is instructive to look at the raw data on average adherence to purity norms among Hindus and Adivasis. Following historical Hindu texts, we categorize purity practices into four broad categories: (1) women's role in society; (2) marriage; (3) food taboos; and (4) inter-caste interactions (Agnes, 1999; Dirks, 2011). Restrictions on women's movement and agency are central to concepts of purity within the caste system (Chen, 1995; Chakravarti, 2018). Our outcomes in this category include measures of women's decision-making power within the household; their mobility within with community; and, whether they work outside the home for pay or are allowed to do so if they choose.

In Table 1, we show average adherence to purity norms among Adivasis and, separately, among high-, middle-, and low-rank castes. As shown in column 1 of Table 1, 70% of rural Adivasi women have ever worked for pay and 84% of them report that they would be allowed to work if they found a suitable position. Low-caste-rank Hindu women have almost the same labor force participation rate and agency over the decision to work as Adivasi women (column 2); both high- and middle-rank Hindu women are, however, both substantially less likely to participate in the labor force and to be allowed to work (columns 3 and 4). Consistent with this, these Hindu women also report lower earnings than either Adivasi or low-caste women.

Hindu women across all caste rank groups report more restrictions on their movement outside the home and less ability to contribute to household decisions than Adivasi women, though the difference is largest for women in the high-rank caste group (see Table A1 for index components; norms indexes are standardized to the Adivasi mean). Survey results on marriage practices highlight that *Sanskritization* has occurred among all ethnic groups: even among Adivasis, who are outside of the caste system, a third report that their community now disallows widow remarriage and two-thirds report practicing dowry (Table A2). Hindus, and especially middle- and high-rank caste households, are even more likely to adhere to these marriage restrictions.

On other purity norms, important differences remain between Hindu and Adivasi households. For instance, four times as many high-rank Hindu households as Adivasi households report that they practice vegetarianism. Similarly, both middle- and high-rank Hindu households are substantially more likely to practice untouchability towards low-caste rank Hindu households.

4.2 Empirical Specification

We now turn to our main analysis, which examines the relationship between Adivasi population share and rural Hindu households' practice of caste purity norms. For this, we first use the following pooled estimating equation:

$$y_i = \alpha + \phi_1 AdivasiShare_{v(i)} + \theta_{s(i)} + \epsilon_i \tag{1}$$

where y_i is an individual or household-level outcome for Hindu households; $AdivasiShare_{v(i)}$ is the Adivasi population share in household i's PSU (village) and $\theta_{s(i)}$ are state fixed effects. Standard errors are clustered at the PSU level. In addition to the main linear specification, we also report results for an alternative specification in which we regress outcomes on an indicator variable for whether Adivasis constitute a majority of the village population (Table A9).

Across India, Adivasis make up on average 9% of a village's population (Figure A1). But over half of villages have no Adivasi presence at all; conditional on there being at least one Adivasi individual in the village, the average Adivasi population share is 27%.

We report results of Specification 1 in Panel A of Tables 2–3 and A3–A5. In Panel B of these tables, we separately estimate the relationship between *AdivasiShare* and the outcome variable for high-rank castes (γ_2), middle-rank castes (γ_1), and low-rank castes (γ_3) using the following specification:

$$y_i = \alpha + \gamma_1 Middle_i \times AdivasiShare_{v(i)} + \gamma_2 High_i \times AdivasiShare_{v(i)} + \gamma_3 Low_i \times AdivasiShare_{v(i)} + \gamma_4 High_i + \gamma_5 Low_i + \theta_s + \epsilon_i \quad (2)$$

where $High_i$, $Middle_i$, and Low_i are binary indicators for the caste rank group to which the respondent belongs.

4.3 Results

In Table 2, we present results on work outcomes and norms. On average, 44% of Hindu women who live in a village with no Adivasis report ever having worked. However, for every 10 percentage point increase in Adivasi population share, Hindu women are 2.2 percentage points more likely to work (column 2, panel A) and are 1.3 percentage points more likely to report that they are allowed to work (column 3). Consistent with this, Hindu women in villages with an Adivasi presence have increased earnings (column 4), with Hindu women earning 87% more as Adivasi share increases from zero to one.

Panel B of Table 2 demonstrates that the pooled effects are driven by changes in behavior of middle-caste rank Hindu women. As Adivasi population share increases from zero to one, middle-caste rank Hindu women are 34 percentage points more likely to report that they have ever worked (column 2); in fact, their rate of work converges to that of Adivasi and low-caste Hindu women. They are similarly more likely to be allowed to work and have higher earnings when they have more Adivasi neighbors. In contrast, there is no meaningful impact of Adivasi presence on the work behavior of either low- or high-caste rank Hindu women.

Table 3 results show that the impact of Adivasi presence on Hindu behavior extends beyond women's work. Columns 3-7 of Table 3 present outcomes on aggregated indexes of purity practices, normalized to the outcomes of Hindu households in villages with zero Adivasi share (see Tables A3–A5 for impacts on individual index components). Column 1 presents results on a pooled index of each of the sub-indexes in the latter columns. We find that Hindu women with more Adivasi

neighbors report increased decision-making power within the household and mobility outside the home (columns 3 and 4 of Panel A; *p-values* are 0.002 and < 0.001, respectively). The mobility restrictions index includes, for instance, the outcome that Hindu women in fully Adivasi villages are 26 percentage points less likely to practice *purdah* (female veiling) than women in villages with no Adivasi presence, which is a 40% decrease (Table A4; $p < 0.001$). Hindu households in high-Adivasi-share villages are also substantially less likely to adhere to purity restrictions on marriage (column 5): widow remarriage is less likely to be prohibited among members of their caste in their village, and women are more likely to report that they have a say in who they marry.

As described in Section 2, vegetarianism and teetotalism are core Hindu purity practices, historically only prescribed for the highest-ranking castes. Today, though, 38% of all Hindus in non-Adivasi villages report that their household abstains from meat and 57% report that their household abstains from alcohol; these numbers are even higher when we restrict the sample to only middle- and high-rank castes (Table A6). Yet when Adivasis dominate the village population, Hindus are 12 percentage points less likely to report that they are vegetarian and 10 percentage points less likely to report that no one in the household drinks alcohol (Table A5; *p-values* are 0.007 and 0.045, respectively). Consumption of meat and of alcohol both increase household expenditures; that they are positively associated with Adivasi population share is strong evidence of weakened purity norms among Hindus.[23] This finding is further strengthened by the result shown in column 7 of Table 3: Hindu households in high-Adivasi-share villages score lower on an index of purity restrictions on intercaste behavior ($p = 0.030$), which includes indicator variables for whether the household practices untouchability towards low-caste Hindus, whether there is at least one intercaste marriage among households within the respondent's caste in their village, and whether there is a lot of inter-community conflict in the village.

In Panel B, we disaggregate the effect of Adivasi share by caste rank. Consistent with Table 2, impacts on purity practices are concentrated among Hindu households of middle caste rank status. For the pooled index (column 1), we can reject at the 1% significance level that the effects for either high- or low-rank households are the same as those for middle-rank households. This inverted-U pattern is consistent with the logic of our conceptual framework. Middle-rank castes are precisely those for whom costly adherence to purity practices is most elastic: they have strong incentives to invest in status when its local returns are high, but those incentives fall sharply when Adivasis become locally prominent. By contrast, low-rank groups begin from relatively low adherence and face tighter constraints on status mobility, limiting scope for further declines, while high-rank groups are already close to the top of the hierarchy and exhibit comparatively little behavioral response to local ethnic composition.

While our main analysis focuses on how Adivasi presence reshapes Hindu norms, Table A10 reports analogous cross-sectional estimates for Adivasi households. Because Adivasis lie outside the

[23] The average market price for meat, chicken, and fish does not vary with Adivasi population share (result obtained from the IHDS and available upon request).

caste hierarchy, and are therefore further in social distance from high-caste Hindus, our framework yields less sharp predictions about how their own norm-relevant behaviors should respond to local composition. Empirically, we find some evidence of change in the pooled norms index as Adivasi share rises, but the magnitudes are smaller than for even low-rank Hindus. We find no detectable relationship between Adivasi share and Adivasi women's work outcomes: the work index is statistically indistinguishable from zero. This muted responsiveness is also consistent with the broader historical pattern of Sanskritization among Adivasis: while some purity practices have diffused to Adivasi communities over time, take-up appears more limited than among Hindu castes, even those at the bottom of the caste hierarchy.

4.4 Robustness and Validity Checks

Hindus and Adivasis did not settle randomly, raising the concern that Adivasi-share effects may be endogenous to other features of the local social or economic environment. First, differential selection into or out of Adivasi villages could potentially drive our results. We believe this is unlikely: In the IHDS rural sample, 91% of households report that their family has lived in their current village for at least 90 years (the maximum possible response). For most castes, the adoption of purity norms—covering marriage rules, women's roles in society, and food taboos—has occurred only within the past 100 years (Figure 1). Given this timing, there is little reason to expect that these caste groups would have selectively migrated into Adivasi villages on the basis of their own purity-norm preferences. Moreover, the estimated impacts persist even with the inclusion of caste fixed effects (Table A7, column 1), suggesting that the relationship is not simply capturing compositional differences across villages.[24]

A second concern is that unobservable factors correlated with Adivasi villages, such as differential access to markets, may directly affect Hindus' practice of purity norms. Table A8 indicates that Adivasi villages are, on average, more remote and smaller in population. Munshi and Singh (2024) find that district-level population density in India is negatively associated with women's labor force participation and positively associated with vegetarianism and teetotalism. Because high-Adivasi-share districts tend to be less densely populated, this raises the possibility that our estimates reflect a density effect rather than Adivasi exposure; yet our results persist even when controlling for population density. In addition, the results are robust to controls for distance to urban centers, and population size, and when we include district fixed effects (Table A7, columns 2-4). Finally, we continue to find large and statistically significant effects on the pooled purity index for middle-rank Hindus relative to other Hindus even with village fixed effects (column 5), indicating that neither density nor other time-invariant, unobserved features of Adivasi villages are likely to explain our findings.

As an additional check, we measure local Adivasi power using an alternative metric of dominance—control of land—rather than population size. A long tradition in the caste literature em-

[24] Jati categories in the IHDS are cleaned and coded using information from Cassan et al. (2022).

phasizes land-based dominance as a key source of local political and social power (Srinivas et al., 1959), and recent economics work similarly uses land dominance to study how local hierarchy shapes economic interactions and opportunity (Anderson, 2011; Asher et al., 2024). In our setting, Adivasi landownership share is strongly correlated with Adivasi population share, and Table A11 shows that substituting landownership share for population share yields highly consistent results: Hindu purity norms are weaker in villages where Adivasis control a larger share of land.

4.5 Heterogeneity by Adivasi Gender Norms

To further address the selection and omitted-variable concerns discussed above, we take a different approach. Rather than relying solely on variation in Adivasi population share, we ask whether differences in Adivasi norms themselves predict differential effects on caste outcomes. Specifically, holding Adivasi share constant, we examine whether exposure to Adivasi groups with more gender-egalitarian norms generates stronger spillovers to Hindu households' gender practices. This strategy leverages within-Adivasi heterogeneity in historically rooted gender attitudes and provides more direct evidence consistent with a norms-transmission mechanism.

A key distinction across Adivasi groups is historical agricultural practice: while some groups traditionally practiced plough agriculture, others historically practiced shifting agriculture.[25] Ethnographic and empirical evidence suggests that societies with a legacy of shifting cultivation—a production system that relies more intensively on female labor—exhibit higher rates of women's work and more egalitarian gender norms today (Boserup, 1970; Alesina et al., 2013). We therefore hypothesize that Adivasi groups with a history of shifting agriculture should display higher female labor force participation in the present, and that, conditional on Adivasi share, gender norms transmission to caste groups should be stronger in villages where such groups constitute a larger fraction of the population.

Today, plough cultivation is dominant among all tribes in central India. However, consistent with Boserup (1970)'s hypothesis, we find that women from tribes which traditionally practiced shifting agriculture remain more likely to participate in the labor force and have higher earnings than those from tribes which have always practiced plough cultivation (Panel A of Table 4). We then regress Hindu women's work participation on the village shares belonging to historically shifting versus plough agriculture Adivasi groups (Panel B). We find that the increase in Hindu caste women's likelihood of working is driven by exposure to historically shifting-agriculture Adivasi groups. In other words, for a given Adivasi population share, villages with more gender-egalitarian Adivasi groups generate substantially larger spillovers on Hindu women's work. As the share of traditionally non-plough Adivasi groups increases in a village from zero to one, Hindu women's likelihood of ever having worked for pay increases by 33 percentage points (column 2; $p < 0.001$). By contrast, an increase in the share of traditionally plough Adivasi groups has no significant effect on the likelihood that a Hindu woman has ever worked for pay. We can reject equality of these

[25] All agricultural Hindu caste groups have historically practiced plough cultivation.

effects at the 1% level.

In Table A12, we compare village-level characteristics across our sample by regressing each characteristic on the share of plough Adivasis and the share of non-plough (historically shifting) Adivasis in the village. While villages with any Adivasi presence differ from non-Adivasi villages along several dimensions (Table A8), we cannot reject equality of coefficients on non-plough and plough Adivasi share. This suggests that, among Adivasi villages, the composition of Adivasi groups by historical agricultural practice is not systematically correlated with observable village characteristics in ways that would generate differences in Hindu women's labor force participation and market behavior.

Despite the robustness of our OLS estimates and the fact that we observe Adivasi-share impacts across a range of purity norm outcomes, there remains the concern that there are unobservables that may be biasing our estimates. For example, remoteness to urban centers may differentially affect middle caste rank Hindus. Given this possibility, we also undertake an alternative estimation strategy: we exploit a historical natural experiment that led to variation in village-level Adivasi share among villages within a narrow geographic area. We turn to that analysis in the next section.

5 Historical Natural Experiment

In this section, we first discuss the relevant historical context; then our estimation strategy and identification assumptions; finally, we present results of our regression discontinuity analysis.

5.1 The Railroad and In-Migration to Sambalpur, Odisha

Our analysis exploits variation in Adivasi share due to the in-migration of Hindu households following the 1894 construction of a railroad stop in Sambalpur, Odisha.[26] The district of Sambalpur was taken over by the British colonial government in 1849 upon the death of the former Raj.[27] Sambalpur sits on the eastern edge of the former Gondwana Kingdom, an area settled and formerly ruled by the Gonds, an Adivasi tribe. It is situated over 300 kilometres from Cuttack, the coastal city and capital of British Orissa at that time.[28] Prior to the opening of the railroad, the district was isolated with minimal trade or in- or out-migration to neighboring areas (Nethersole, 1885). The existing trade route was the Mahanadi River, which bisects Sambalpur from north to south and flows to Cuttack and other coastal cities. Rice was and continues to be the dominant crop in Sambalpur.

The population of Sambalpur even prior to the railroad construction was multi-ethnic: among

[26] We use the term Sambalpur district to refer to the region of that name as it was defined in the British Colonial period. This region was later subdivided and now includes Bargarh, Jharsuguda, Nuapada and Sambalpur districts in the state of Odisha and parts of Mahasamund and Raigarh districts in the neighboring state of Chhattisgarh. On average, the region is poorer than rural India as a whole, but is otherwise similar in terms of village hierarchies. According to the IHDS, 31% of Hindus and 50% of Adivasis in this region are poor, compared to 17% of Hindus and 38% of Adivasis in rural India overall.

[27] The British colonial government at the time had a policy of annexing native (non-British controlled) states if the ruler died without an heir. See Iyer (2010) for further discussion.

[28] The former state of Orissa was renamed as Odisha in 2011.

the 19 largest landowners in 1889, 12 were Gond, 2 belonged to a different Adivasi tribe, and the remaining 5 belonged to various Hindu cultivator castes (Fuller, 1893). The railroad construction in 1894 led to an additional surge of Hindu migrants from neighboring districts. In the words of the British Settlement Officer at the time, the construction of the railroad stop in Sambalpur "doubled the price of rice and changed the run of trade [from downstream the Mahanadi to northwards along the railroad]" which brought "an invasion of Hindu cultivators" to what had previously been a predominantly tribal area (Dewar, 1908). The Sambalpur stop was the terminus of a branch line from the main Bengal-Nagpur line (Figure 2). While the districts directly to the north, northwest, and northeast of Sambalpur were served by the main line, the station in Sambalpur City became the nearest railroad access point for not only Sambalpur district, but also the states directly to the southwest (Baud, Patna, and Sonpur), and southeast of Sambalpur (Athmallik and Rairakhol). These states (shaded in gray in Figure 2 below) became the main sending areas for Hindu migrants to the areas around the Sambalpur railroad station.

The Mahanadi River Boundary Our treatment area of interest is the set of villages close to the Sambalpur railroad station, located on either side of the Mahanadi River. This key feature of Sambalpur geography restricted the settlement locations of new Hindu migrants: the river, which is almost a mile wide in parts, constrained population movement between the east and west sides.[29] This is because, at the time of the railroad station construction, the river only had one crossing in Sambalpur district: a pontoon bridge located at Sambalpur City, directly at the site of the new railroad station (Dewar, 1908; Deloche, 1993). Migrants, who arrived in the area after walking with their families and belongings from areas up to 200 kilometres away, settled in the plains surrounding the railroad station where they found land available (Dewar, 1908; O'Malley, 1909). Cultivable land was abundant; in 1889, only 56% of total land in the district was cultivated or under other use (Fuller, 1893). In general, cultivators did not bring their rice paddy directly to the railroad station; rather, they brought their paddy on head-loads down village paths to traders stationed along the primary district road, which ran from west to east through the district (Figure 2). Thus the difference in market accessibility for a cultivator located, for instance, along the district road 10 kilometres from the river on the east versus the west side was marginal: the only difference was the need for a trader who purchased on the west side to additionally transport the paddy across the pontoon bridge.

Our empirical analysis exploits the discontinuous change in Adivasi population share at the Mahanadi River boundary due to higher levels of in-migration of Hindus on the west versus east sides of the river. The historical record documents several causes of this difference in the magnitude of migration. The first and primary reason is differences in geography: to the east and southeast of Sambalpur, at the border with Rairakhol state, there is a hill range covered in dense forests.

[29] The description of population settlement after the introduction of the railroad draws heavily from the 1906 Sambalpur British Land Settlement Report, which includes a detailed accounting of population movement and market access during the prior decade.

The hill range is described at the time as being "almost impassable," and, beyond it, the states of Rairakhol and Athmallik were both very isolated and sparsely populated.[30] At the time of the railroad construction, Athmallik was home to only 56 persons per square mile and Rairakhol to 32 persons per square mile. They were two of the three least densely populated states in Orissa (Cobden-Ramsay, 1910). In contrast, the fertile and open plains that characterize the villages on either side of the Mahanadi River near to the railroad station continued westwards and southwards into Baud, Patna, and Sonpur states. These three states had population densities of 70, 116, and 188 persons per square mile, respectively. In other words, there was both a larger population of would-be migrants in areas to the west and southwest and the travel required for these migrants was less costly.[31] The second reason for the larger number of migrants from the west and southwest is that there was poor weather and a resulting famine in the area in 1899-1900. Patna and Sonpur states were especially badly affected, leading to an additional surge of migrants towards Sambalpur (which was less badly hit) in that year. The British Settlement Officer described the situation thusly: "crowds of aimless wanderers [from Patna and Sonpur]...flocked to the relative Eden that was Sambalpur" (Dewar, 1908). Though village-level census population data is not available for this period, the 1906 British Land Settlement Report for Sambalpur notes that only four villages in the district grew sufficiently over the decade from 1891-1901 to surpass a population of 2,000 individuals: these four villages are all located to the west of the Mahanadi River (Dewar, 1908).

Prior to the 1894 influx of Hindu migrants, the British colonial government had mapped the full Sambalpur region and divided it into village administrative units, each with their own hereditary headman. Thus new migrants to the Sambalpur area settled into existing villages, expanding the area under cultivation. In addition to the village headman, who collected taxes from individual households and acted as a liaison with the British government, each village had a watchman who was in charge of resolving disputes and reporting crime to the British. This structure of local governance was common to villages on the east and west side of the river (Dewar, 1908; Hamid, 1927).

5.2 Regression Discontinuity Empirical Specification

We exploit the discontinuous change in Adivasi share of the population on either side of the Mahanadi River boundary to estimate a causal effect of Adivasi share on our outcomes of interest. Our empirical specification is the following:

$$y_i = \alpha + \gamma_1 East_{v(i)} + \gamma_2 Dist_{v(i)} + \gamma_3 East_{v(i)} \times Dist_{v(i)} + X_{v(i)}\beta + \epsilon_i \tag{3}$$

where y_i is the outcome of interest for individual i in village v and $East_{v(i)}$ is an indicator

[30] Orissa Historical Research Journal, vol I., 1952.

[31] The historical record and our own qualitative interviews with village elders in our regression discontinuity sample areas confirm that some migrants from Rairakhol and Athmallik did, in fact, traverse the forested areas to settle in Sambalpur post-construction of the railroad. Our aim here is only to highlight the difference in relative magnitude of migrants.

variable equal to 1 if the village is on the eastern side of the Mahanadi River boundary and zero otherwise. $Dist_{v(i)}$ is the distance of village v to the Mahanadi River. $X_{v(i)}$ is a vector of village-level covariates. Because the course of the Mahanadi River has changed over time, we exclude villages whose boundaries directly intersect with or are adjacent to the river from our analysis sample.

Following Calonico et al. (2014) and Gelman and Imbens (2019), our baseline specification is a local linear regression in distance to the river estimated separately on the west and east sides. Our preferred specification will use a fixed bandwidth of 25km to the left and right of the river and a triangular kernel. Our results are highly robust to using a variety of alternate bandwidths (Figure A3) and kernels (Figure A4). We further report Conley standard errors to account for spatial auto-correlation (Conley, 1999) as well as p-values computed using a randomization exercise in which we randomly re-assign distance to the river (Tables A20 and A21).

Our coefficient of interest is γ, which can be interpreted as the impact on a Hindu household of residing in a village just to the east side of the Mahanadi River. The key identifying assumption for the regression discontinuity approach presented in Specification 3 is that all relevant factors besides treatment vary smoothly at the river boundary. This assumption is needed for Hindu individuals located just across the river on the (lower Adivasi share) western side to be appropriate counterfactuals for Hindu individuals on the (higher Adivasi share) eastern side. The intuition behind our specification is that, absent the influx of Hindu migrants in 1894-1900 to the western side of the river, villages directly to the east and west of the river would have similar levels of Adivasi share of the population. They should also be comparable in terms of geography, historical governance institutions, and traditional norms of caste households. This allows us to identify the impact of the average difference in Adivasi share between villages east and west of the river on Hindu women's labor force participation and purity norms among Hindu households.

To assess the plausibility of our identifying assumption, Panel A of Table A13 examines a variety of geographic characteristics. Agriculture is the primary source of employment for both men and women in villages in our sample area and rice is the primary crop. Villages on either side of the river boundary are balanced in terms of elevation, flow accumulation, rice suitability, and forest share. We do, however, find that villages to the east side of the river have steeper slopes, which may indirectly affect crop output. Since some villages west of the Mahanadi River fall in Bargarh district rather than Sambalpur district, distance to the district and subdistrict headquarters also differs across the two sides of the river. However, all villages remain at a similar distance from Sambalpur city, the nearest major urban center and hub of economic activity. Distance to administrative headquarters may nonetheless affect the provision of public amenities. In our main analysis, we therefore control for terrain slope as well as distance to the district and subdistrict headquarters to address concerns that these differences could drive our results. Panel C shows that villages on both sides of the river are similar in terms of village size and within-Hindu caste rank shares.

In Section 5.1, we describe historical evidence that villages to the east and west side of the river

were similar in terms of ethnic composition and other relevant factors prior to the introduction of the railroad. To further validate this assumption, we collect and digitize individual land records from 1887 for households in our regression discontinuity sample. These land records contain information on each landowner household's caste or tribe and political positions in the village. In Panel D of Table A13, we show that villages are balanced prior to the 1894 in-migration shock in terms of Adivasi population share among landowners and the likelihood of having an Adivasi village headman.[32]

A second possible threat to identification is that the construction of the railroad could have differentially impacted households on either side of the river. For instance, villages on the eastern side, where the railroad is located, may have better access to agricultural markets. However, as we discuss in Section 5.1, the railroad station is directly at the river boundary. Thus, except for the distance of the actual crossing of the river (there was a pontoon bridge at the railroad station crossing), households on either side of the river were equidistant to the railway station. To further validate the assumption of equal access to markets, we digitize 1961 village notes completed by government officials that contain information on price of rice paid to cultivators in each village at that time, along with other measures of local agricultural markets. Records for 125 villages shows that the historical price of rice was similar on both sides of the river in 1961 (Table A16, column 6). For 82 villages within our sample area, the government notes provide information on the average price of land sold in the period 1941-1961; a comparison of means shows that prices are not statistically different on either side of the river. As a last point of evidence for this assumption, we examine whether prices vary across the river in the present day. Column 7 of Table A16 shows that the revenue received by rice farmers in villages east of the river is not significantly different from the price of rice received by farmers west of the river.

Our third identification assumption is no selective sorting of incoming caste migrants across the river boundary. In Section 5.1, we provide historical evidence that migrants arrived primarily from regions to the south-west of our study area and that the presence of the river made it costly for them to settle in the east: there was only one river crossing in the district (at Sambalpur City) and crossing was via a pontoon bridge or ferry, which had a fee. However, it is possible that certain caste migrants, such as those with a greater affinity for Adivasi people or those who held more egalitarian gender norms, were more willing to pay the additional effort and monetary cost required to settle on the eastern side of the river. We note that this type of sorting is unlikely since, at the time of migration, purity norms and female seclusion were not yet widely adopted, so it is unlikely that migrants differed systematically in "traditional" norm adherence in ways that would map onto our main outcomes. Additionally, our regression discontinuity results are robust to the inclusion of caste (jati) fixed effects (Figure A4), which compares households from the same caste living on opposite sides of the river boundary.

[32] We are able to find complete land records for 112 of our sample of 150 villages. The share of missing records is not differential on the east versus west side of the river.

We provide further evidence against selective sorting at the time of settlement in Figure A2. That figure shows the relationship between population growth during the period 1889–1951 and initial Adivasi population share, for villages west of the river. If selection based on presence of Adivasis influenced settlers' decision to locate themselves west versus east of the river, we should similarly expect to see selection *among* villages west of the river. Note that, prior to the period of inmigration, Adivasi population share varied between $8.3 - 86.2\%$ among villages west of the river. If, for instance, households that chose to settle west of the river were more opposed to living in communities with Adivasis, we should expect that villages with ex-ante lower Adivasi shares would have grown at higher rates. Figure A2 shows, however, that there is no relationship between initial Adivasi population share and subsequent population growth.

5.3 Regression Discontinuity Results

We now turn to the results of our regression discontinuity analysis. Consistent with the historical evidence discussed in Section 5.1, 2011 census data show that villages just east of the river have roughly 26 percentage points higher Adivasi share (Table 5, column 1; $p = 0.002$). On average, villages west of the river have 24% Adivasi share, so being east of the river is associated with a more than doubling in the fraction of Adivasis in the average village. We similarly find that there is a more-than doubling of Adivasi land ownership share among villages east versus west of the river (column 2; $p = 0.027$).[33] These findings are replicated in Figure 3, which presents standard regression discontinuity plots with distance to the river as the running variable and a local linear trend to each side of the discontinuity. There is a large and discontinuous jump in Adivasi population share at the river boundary; the slopes are relatively flat which indicates that among villages west and east of the river population composition does not vary with distance.[34]

Table A15 reports descriptive statistics for Hindu households in the RDD sample on either side of the Mahanadi boundary. The sample is overwhelmingly composed of agricultural (rice-growing) households: on the west side, about 81% of household heads report farming as their primary occupation, and this share is statistically indistinguishable on the east side. Landownership is similarly balanced across the boundary: roughly three-quarters of households own any land, with an average holding of about three acres, and neither the extensive nor intensive margin differs significantly across sides.

We find large differences in Hindu women's economic activity east versus west of the river: In column 3 of Table 5, Hindu caste women in villages east of the river score 0.59 standard deviations higher on an index of labor force participation outcomes ($p = 0.003$). The index includes an indicator for whether a woman's primary occupation is not reported as housewife and an indicator

[33] Table 5 shows results for our sample of 150 in-person survey villages. For census outcomes on Adivasi population and landownership share and Hindu female labor force participation, we can also examine results for the full sample of 233 villages within the 25km bandwidth of our regression discontinuity area. Table A14 shows that results are highly consistent for the full census sample.

[34] The plots also show that there are a small number of outlier villages with very low Adivasi population shares just east of the river. Some of these villages were granted to Brahmin households in the 19th century for the construction and maintenance of temples. Our results remain robust when these villages are excluded.

for whether she has performed paid work in the past year. Table A16 corroborates this result: Hindu women east of the river are almost twice as likely to report earnings from agricultural labor in the prior season.[35]

We also asked Hindu caste men to report their own and community beliefs about the appropriateness and desirability of women's work. Hindu men are both more likely to report that they believe it is appropriate for women to work for pay, and that they believe that members of their own caste in their village would report the same (Table A17). Overall, Hindu men score 0.61 standard deviations higher on an index of gender equality in beliefs about work (column 4 of Table 5; $p = 0.020$). Figure 3 presents standard RDD plots for our main outcomes, with distance to the river as the running variable and a local linear trend to each side of the discontinuity. We observe there is a clear discontinuity at the river point for each outcome.

Columns 5 and 6 of Table 5 show that these shifts in women's work norms coincide with a broader weakening of purity rules—most notably, practices related to Dalit exclusion. In column 5, Hindu respondents in villages east of the river score 1.91 standard deviations higher on an intercaste integration index ($p < 0.001$), indicating substantially lower social distance to low-rank caste groups. West of the river, 96% of Hindus report that they consider Dalit neighbors in their own village to be untouchable. This practice was officially abolished in the Indian Constitution and the Indian Parliament has passed a variety of laws since independence (the latest in 2018) to define forbidden practices as well as punishments for violations. Nonetheless, it remains widely practiced and, between 1991 and 2020, there were over 700,000 reported instances of violence due to untouchability (Bharti, 2022). Strikingly, however, middle-rank Hindus who live east of the river, where Adivasis are a majority, are 20.6 percentage points less likely to consider low-caste households in their village to be untouchable (Table A18; $p = 0.009$). Column 6 points to parallel changes in purity-related food behavior: Hindus east of the river are 21.7 percentage points more likely to report that all members of the household can consume meat ($p = 0.061$).

We next examine Hindus' social and economic integration with Adivasis. Table 6 shows that Hindu respondents east of the river score 2.2 standard deviations higher on an Adivasi integration index ($p < 0.001$), reflecting more frequent and more socially proximate ties with Adivasis. First, we note that Adivasis in villages east of the river enjoy more respect from Hindu households: while two-thirds of respondents in villages west of the river report that they practice untouchability towards Adivasis in their village, only 6% do so in villages just across the river boundary (column 5; $p < 0.001$).[36] Hindus in these villages also place substantially more weight on earning and

[35] Table A16 also shows that we do not observe significant increases in overall female earnings (column 2), likely reflecting substantial noise in this outcome. Male earnings are likewise unaffected (columns 3-4. In addition, consistent with higher female labor supply in villages east of the river, we find that female wages are 13% lower in these villages (column 5).

[36] Though Adivasis have not traditionally been considered "untouchable," this discriminatory practice towards them has become more widespread with Sanskritization. Note that the coefficients for Adivasi and Dalit untouchability are not directly comparable as the questions were asked somewhat differently: the outcome for Dalits is an indicator for whether the respondent does not practice untouchability towards any Dalit caste in the village, while for Adivasis it is an indicator for whether the respondent does not practice untouchability towards at least some Adivasis in the

maintaining respect of Adivasis relative to respect from a member of a high caste in their village (column 4; $p = 0.006$). We elicit respondents' social network within their village, and find that Hindus in villages east of the river have twice as many Adivasi friends and are substantially more likely to report having at least one Adivasi contact they socialize with, seek advice from, and can ask for an emergency loan (Table A19). Own-caste networks are broadly similar across the boundary while ties to other upper- and middle-caste groups decline, suggesting that greater interaction with Adivasis partly substitutes for these relationships. Together, these patterns support the interpretation that social and economic ties with Adivasis are stronger east of the river—precisely the channel through which our framework predicts weaker incentives to adhere to norms that restrict inter-group interaction.

Our results are robust to various changes to the specification, including alternative bandwidths (Figure A3), alternative kernels, the exclusion of geographic controls, and the inclusion of population size and density controls (Figure A4), and accounting for spatial correlation (Table A20). To address concerns that sorting on traditional norms might explain our results, we also show that our results are robust to the inclusion of jati fixed effects (Figure A4). We further calculate standard errors for each of our main outcomes based on randomization inference by randomly re-assigning the distance to the river for each sample village 1,000 times (Dell et al., 2018). For each iteration, we then repeat our analysis based on the re-assigned distance variable. The p-value is calculated as the share of the placebo coefficients that are larger in magnitude than the actual coefficient on the east side dummy (in absolute terms). Table A21 shows that our results also hold in this exercise.

Alternative Explanations for the Effect of Adivasi Share on Hindu Women's Work We argue that higher Adivasi share leads to an increase in caste women's supply of labor through decreasing the social stigma surrounding women's work for caste households. We now evaluate alternative labor demand- or supply-based explanations for the observed relationship:

The presence of Adivasis in a village community may increase landowners' demand for female agricultural labor through increasing either the real or perceived returns to hiring women. For instance, fixed costs of hiring women may lead landowners to only hire male laborers when the pool of female laborers is small. If this were the case, we should also see that the rate of Adivasi women's work also increases with Adivasi share. But as shown in Table A14, Adivasi female labor force participation does not change with their population share in the community.[37] Additionally, we find that nearly all landowners on both sides of the river express no preference in the caste of the workers that they hire.

Our norms-based explanation for the observed increase in Hindu women's work is one of several possible reasons why Hindu women's labor supply might increase as a result of living in a community with Adivasi women. First, Hindu women may be more willing to work outside the home because,

village.

[37] Table A10 similarly shows that Adivasi FLFP does not vary with Adivasi population share in our country-level analysis.

through exposure to Adivasi women, they learn and update their beliefs about the costs or benefits of working. A majority of women in our study sample area perform agricultural work on their own land; thus, learning would have to be associated with gains specific to agricultural work on someone else's land. However, we find that households east of the river are just as well informed as those west of the river about paid agricultural work opportunities for women as well as current female agricultural daily wages; nearly all respondents in the sample report being informed about both of these outcomes (Table A22; columns 1 and 2).

Hindu FLFP may also increase with Adivasi share because of complementarities in caste women's labor supply function: for instance, Hindu women may have a stronger preference for safety than Adivasi women. If Hindu women are only willing to work as laborers when there is a sufficient number of other women working, then we would expect their labor supply to increase with Adivasi share. To assess these possible complementarities, we ask respondents from our regression discontinuity sample survey about safety and preferences for number of women with whom they would work, as well as availability of childcare. We find, though, that Hindu women are equally likely to have access to childcare across both sides of the river (Table A22; column 3). Nearly all respondents on both the west and east side express no preference for the caste of the hiring landowner and believe that it is safe for women to engage in paid agricultural opportunities in their village (column 4).

6 The Role of Adivasi Power

Our conceptual framework emphasizes that purity norms are most valuable when status-linked relationships within the caste system are high-return, and least valuable when maintaining ties with Adivasis is high-return. A key empirical implication is therefore that the effects we document should be strongest not only when Adivasis are more numerous, but also when they are more economically and politically influential within the local village economy.

Adivasi population share and local economic dominance In our setting, Adivasi population share is closely linked to Adivasis' control of productive resources. In the national cross-section, villages with higher Adivasi population shares also tend to have higher Adivasi landownership shares, consistent with historical accounts that Adivasis were early settlers and remain important landholders in many mixed villages. In the RDD setting, this linkage is especially transparent: the discontinuous increase in Adivasi population share east of the Mahanadi River is accompanied by a similarly large discontinuity in Adivasi landownership share (Table 5, column 2), implying that the "high-Adivasi-share" side of the boundary is also the side where Adivasis have greater economic presence through land. Taken together, these patterns motivate interpreting village Adivasi share not only as exposure to Adivasi neighbors, but also as a proxy for the local returns to interacting with Adivasis and, conversely, the local returns to caste-status investment.

Instrumenting for Adivasi power We next turn to a complementary strategy that shifts Adivasi political and economic power, holding population share fixed. In several districts of present-

day Odisha, the British colonial administration assigned the position of village watchman to the village's Adivasi priest (the *jhankhar*). Contemporary accounts suggest this institutional choice was largely ad hoc and reflected the need to quickly establish an administrative structure after the death of the former ruler (Nethersole, 1885; Fuller, 1887; Maddox, 1901; O'Malley, 1909; Hamid, 1927). Importantly, the watchman position conferred material and political authority: watchmen received tax-free land and claims on village tax revenues, and served as intermediaries in dispute resolution and communication with the colonial state (Central Provinces Land Act, 1882; Board of Revenue 1962). Although the watchman position was later abolished, land allocations to *jhankhar* households persisted, and these historical allocations plausibly increased the long-run political and economic standing of Adivasi leadership in affected areas.

We operationalize this channel using a block-level policy: whether the block allocated the watchman position to the *jhankhar*. We then use this watchman indicator as an instrument for whether the village has an Adivasi *jhankhar* today. Specifically, we estimate village-level two-stage least squares using ward-member and sarpanch (elected representative) surveys:

$$\text{First stage:} \quad Jhankhar_v = \pi_0 + \pi_1 Watchman_{b(v)} + \lambda Sambalpur_v + \varepsilon_v, \tag{4}$$

$$\text{Second stage:} \quad y_v = \alpha + \beta \widehat{Jhankhar}_v + \lambda Sambalpur_v + u_v, \tag{5}$$

where $Watchman_{b(v)}$ is the block-level watchman position indicator, $Jhankhar_v$ is an indicator that the village has an Adivasi *jhankhar*, and y_v is an outcome capturing Hindu norms and inter-group integration. Standard errors are clustered at the block level. The sample spans three neighboring districts in western Odisha (Bargarh, Sambalpur, and Subarnapur) and we control for a dummy variable that indicates whether a village is located in Sambalpur district since it is the only district that has villages inside and outside of watchman areas.

In Table A23, we compare the characteristics of villages inside and outside watchman areas. Importantly, we find no differences in Adivasi population share, supporting the interpretation that the policy primarily shifted Adivasi status and leadership independently of Adivasi settlement patterns. Villages are also balanced in terms of flow accumulation, rice suitability, and forest share. However, villages within watchman areas tend to have lower elevation and less steep terrain on average. Our results are robust to including these variables as controls.

Table 7 presents the IV results. The first stage is strong: blocks that allocated the watchman position to the *jhankhar* increase the probability that a village has an Adivasi *jhankhar* today by 21.4 percentage points, with an F-statistic above 12 (column 1). The second-stage results align closely with the mechanism emphasized in our framework. Increasing Adivasi leadership raises Hindu–Adivasi integration and weakens purity-related practices among Hindus. In particular, villages with an Adivasi *jhankhar* exhibit substantially higher values of the Adivasi integration index (column 2), higher values of the women's work index (column 3), and a higher likelihood of reporting no food restrictions (column 4). Table A24 shows that these effects include a reduction in

untouchability toward Adivasis, greater social mixing (eating together at weddings), and positive but insignificant effects on female labor-force participation and respect for working women. Overall, the IV results provide suggestive evidence for a central implication of the conceptual framework: purity norms weaken not only when Adivasis are more numerous, but also when the local returns to interacting with Adivasis rise through greater Adivasi political and economic power.

7 Conclusion

In this paper, we examine how long-run exposure to an out-group shapes the strength of in-group social norms. Using multiple empirical strategies, including national cross-sectional evidence and a historical natural experiment that generated local variation in Adivasi population share, we show that Hindu caste purity norms weaken in villages where Hindus live alongside Adivasis, an indigenous group historically outside the caste system. Greater Adivasi presence is associated with weaker adherence to female seclusion norms, food taboos, and restrictions on inter-group interaction. Consistent with these changes, Hindu women in Adivasi-majority villages are substantially more likely to work and earn more, and villages exhibit greater social and economic integration. We conclude from these findings that the presence of Adivasis leads to reduced social stratification within mixed Adivasi-Hindu communities.

These patterns align with a view of purity norms as costly investments in caste status whose returns depend on local conditions. When Adivasis are locally prominent or powerful, the benefits of maintaining strict social separation fall while the gains from social and economic ties with Adivasis rise. Consistent with this interpretation, we also find that purity norms weaken when Adivasi political and economic power increases holding population share fixed. Together, the results suggest that policies that expand the economic or political power of marginalized groups may affect not only discrimination against those groups, but also the broader equilibrium of social norms within the Hindu caste community.

A final implication of our findings concerns how economists measure and model identity. Much of the empirical literature treats caste or ethnicity as fixed attributes, and therefore often abstracts from the possibility that identity-linked practices respond sharply to local incentives (Akerlof and Kranton, 2000; Shayo, 2020). Our evidence points to large variation in cultural practices at a very local level—even among households from the same caste group—across nearby villages that differ in Adivasi presence and power. This suggests that group labels alone may be an incomplete proxy for identity in settings where norm adherence is a choice, and motivates empirical approaches that combine group membership with behavioral measures of identity investment (Atkin et al., 2021).

References

Advani, A. and B. Reich (2015). Melting pot or salad bowl: The formation of heterogeneous communities. Working Paper W15/30, Institute for Fiscal Studies (IFS).

Agnes, F. (1999). *Law and Gender Inequality: The Politics of Women's Rights in India*. Oxford University Press.

Akerlof, G. A. (1997). Social distance and social decisions. *Econometrica 65*(5), 1005–1027.

Akerlof, G. A. and R. E. Kranton (2000). Economics and identity. *The Quarterly Journal of Economics 115*(3), 715–753.

Alesina, A., P. Giuliano, and N. Nunn (2013). On the origins of gender roles: Women and the plough. *The Quarterly Journal of Economics 128*(2), 469–530.

Alesina, A. and E. La Ferrara (2005). Ethnic diversity and economic performance. *Journal of Economic Literature 43*(3), 762–800.

Allport, G. W. (1954). *The Nature of Prejudice*. Reading, MA: Addison-Wesley.

Anderson, M. L. (2008). Multiple inference and gender differences in the effects of early intervention: A reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects. *Journal of the American Statistical Association 103*(484), 1481–1495.

Anderson, S. (2011). Caste as an impediment to trade. *American Economic Journal: Applied Economics 3*(1), 239–63.

Asher, S., A. Bhowmick, M. Bussolo, V. Mehta, and P. Novosad (2024). Cultural Capital and Economic Opportunity in Rural India. Working paper.

Atkin, D., E. Colson-Sihra, and M. Shayo (2021). How Do We Choose Our Identity? A Revealed Preference Approach Using Food Consumption. *Journal of Political Economy 129*(4), 1193–1251.

Attewell, P. and S. Madheswaran (2007). Caste discrimination in the indian urban labour market: Evidence from the national sample survey. *Economic and Political Weekly 42*(41), 4146–53.

Banerjee, A. V. and R. Pande (2007). Parochial politics: Ethnic preferences and politician corruption.

Bayly, S. (2001). *Caste, society and politics in India from the eighteenth century to the modern age*, Volume 3. Cambridge University Press.

Becker, A. (2021). On the economic origins of restricting women's promiscuity. *The Review of Economic Studies*.

Bharti, A. (2022). In the Death of a Dalit Student, Betrayal of the Vision of Freedom. *The Indian Express*. Published on Aug 16, 2022.

Bisin, A., E. Patacchini, T. Verdier, and Y. Zenou (2016). Bend it like beckham: Ethnic identity and integration. *European Economic Review 90*, 146–164.

Bisin, A. and T. Verdier (2010). The economics of cultural transmission and socialization. In J. Benhabib, A. Bisin, and M. Jackson (Eds.), *The Handbook of Social Economics*. Elsevier.

Bisin, A. and T. Verdier (2023). Advances in the economic theory of cultural transmission. *Annual Review of Economics 15*, 63–89.

Boelmann, B., A. Raute, and U. Schönberg (2025). Wind of change? Cultural determinants of maternal labor supply. *American Economic Journal: Applied Economics 17*(2), 41–74.

Boserup, E. (1970). *Woman's Role in Economic Development*. Allen & Unwin.

Bursztyn, L., A. L. González, and D. Yanagizawa-Drott (2020). Misperceived social norms: Women working outside the home in Saudi Arabia. *American Economic Review 110*(10), 2997–3029.

Calonico, S., M. D. Cattaneo, and R. Titiunik (2014). Robust nonparametric confidence intervals for regression-discontinuity designs. *Econometrica 82*(6), 2295–2326.

Carranza, E. (2014). Soil Endowments, Female Labor Force Participation, and the Demographic Deficit of Women in India. *American Economic Journal: Applied Economics 6*(4), 197–225.

Cassan, G., D. Keniston, and T. Kleineberg (2022). A Division of Laborers: Identity and Efficiency in India. Working Paper 28462, National Bureau of Economic Research.

Cassan, G. and L. Vandewalle (2021). Identities and public policies: Unexpected effects of political reservations for women in India. *World Development 143*, 105408.

Chakravarti, U. (2018). *Gendering caste: Through a feminist lens*. Sage Publications Pvt. Limited.

Chen, M. (1995). A matter of survival: Women's right to employment in india and bangladesh. In M. C. Nussbaum and J. Glover (Eds.), *Women, Culture, and Development: A Study of Human Capabilities*. Oxford Academic Press.

Cobden-Ramsay, L. E. B. (1910). *Feudatory States of Orissa. Report*. Number Bengal District Gazetteers XXI.

Conley, T. G. (1999). Gmm estimation with cross sectional dependence. *Journal of Econometrics 92*(1), 1–45.

Dell, M., N. Lane, and P. Querubin (2018). The historical state, local collective action, and economic development in Vietnam. *Econometrica 86*(6), 2083–2121.

Deloche, J. (1993). *Transport and Communications in India Prior to Steam Locomotion: Water transport*. French studies in South Asian culture and society. Oxford University Press.

Dewar, F. (1908). *Report of the Land Revenue Settlement of the Sambalpur District, 1906*. Bengal Secretariat Book Depot.

Dhar, D., T. Jain, and S. Jayachandran (2022). Reshaping adolescents' gender attitudes: Evidence from a school-based experiment in India. *American Economic Review 112*(3), 899–927.

Dirks, N. B. (2011). Castes of mind. In *Castes of Mind*. Princeton University Press.

Dumont, L. (1970). *Homo Hierarchicus: The Caste System and Its Implications*. Chicago: University of Chicago Press.

Fernández, R. (2013). Cultural change as learning: The evolution of female labor force participation over a century. *American Economic Review 103*(1), 472–500.

Fernández, R. and A. Fogli (2009). Culture: An empirical investigation of beliefs, work, and fertility. *American Economic Journal: Macroeconomics 1*(1), 146–77.

Fernández, R., A. Fogli, and C. Olivetti (2004). Mothers and sons: Preference formation and female labor force dynamics. *The Quarterly Journal of Economics 119*(4), 1249–1299.

Field, E., S. Jayachandran, and R. Pande (2010). Do Traditional Institutions Constrain Female Entrepreneurship? A Field Experiment on Business Training in India. *American Economic Review 100*(2), 125–29.

Field, E., R. Pande, N. Rigol, S. Schaner, and C. Troyer Moore (2021). On her own account: How strengthening women's financial control impacts labor supply and gender norms. *American Economic Review 111*(7), 2342–75.

Fouka, V. (2020). Backlash: The unintended effects of language prohibition in US schools after World War I. *The Review of Economic Studies 87*(1), 204–239.

Fuller, J. B. (1887, April). Sambalpur Settlement: Service Lands for Village Watchmen (No. 429 S.). Letter from Offg. Junior Secretary to the Chief Commissioner, Central Provinces, to the Commissioner, Chhattisgarh Division. Dated Nagpur, 30 April 1887. Reproduced in "Book 151" archival scans (Jhankar materials).

Fuller, J. B. (1893). *Report on the Land Revenue Settlement of the Sambalpur District of the Central Provinces, Effected During the Years 1885 to 1889*. Bombay: Education Society's Steam Press.

Gelman, A. and G. Imbens (2019). Why high-order polynomials should not be used in regression discontinuity designs. *Journal of Business & Economic Statistics 37*(3), 447–456.

Ghurye, G. S. (1969). *Caste and race in India*. Popular Prakashan.

Giuliano, P. (2021). Gender and culture. *Oxford Review of Economic Policy 36*(4), 944–961.

Giuliano, P. and M. Tabellini (2020). The Seeds of Ideology: Historical Immigration and Political Preferences in the United States. Working Paper 27238, National Bureau of Economic Research.

Hamid, M. (1927). *Final Report on the Land Revenue Settlement of the Sambalpur District 1926*. Patna: Superintendent, Government Printing, Bihar and Orissa. By Khan Bahadur Muhammad Hamid, Settlement Officer.

Hanna, R. N. and L. L. Linden (2012). Discrimination in grading. *American Economic Journal: Economic Policy 4*(4), 146–168.

Hutton, J. H. (1933). *Census of India, 1931: Volume I—India, Part I—Report*. Simla: Government of India.

Iyer, L. (2010, 11). Direct versus Indirect Colonial Rule in India: Long-Term Consequences. *The Review of Economics and Statistics 92*(4), 693–713.

Jayachandran, S. (2015). The roots of gender inequality in developing countries. *Annual Review of Economics 7*(1), 63–88.

Jayachandran, S. (2021, September). Social Norms as a Barrier to Women's Employment in Developing Countries. *IMF Economic Review 69*(3), 576–595.

Jayachandran, S. and R. Pande (2017, September). Why Are Indian Children So Short? The Role of Birth Order and Son Preference. *American Economic Review 107*(9), 2600–2629.

Jessen, J., S. Schmitz, and F. Weinhardt (2024). Immigration, female labour supply and local cultural norms. *The Economic Journal 134*(659), 1146–1172.

La Ferrara, E., A. Chong, and S. Duryea (2012). Soap operas and fertility: Evidence from brazil. *American Economic Journal: Applied Economics 4*(4), 1–31.

Lowe, M. (2021, June). Types of contact: A field experiment on collaborative and adversarial caste integration. *American Economic Review 111*(6), 1807–44.

Luke, N. and K. Munshi (2011). Women as agents of change: Female income and mobility in India. *Journal of Development Economics 94*(1), 1–17.

Maddox, S. L. (1901). Final Report of the Survey and Settlement of the Province of Orissa, 1890 to 1900 A.D. (Temporarily Settled Areas). Printed at Sarada Press; vols. 1–2.

Marten, J. (1912). *Census of India 1911: Central Provinces and Berar. Report.* Number v. 10, pt. 1.

Miho, A., A. Jarotschkin, and E. Zhuravskaya (2023, 06). Diffusion of Gender Norms: Evidence from Stalin's Ethnic Deportations. *Journal of the European Economic Association 22*(2), 475–527.

Munshi, K. (2019). Caste and the Indian Economy. *Journal of Economic Literature 57*(4), 781–834.

Munshi, K. and M. Rosenzweig (2006). Traditional institutions meet the modern world: Caste, gender, and schooling choice in a globalizing economy. *American Economic Review 96*(4), 1225–1252.

Munshi, K. and M. Rosenzweig (2015). Insiders and outsiders: Local ethnic politics and public goods provision. Working Paper 21720, National Bureau of Economic Research.

Munshi, K. and S. Singh (2024). Social status, economic development and female labor force (non) participation. Technical report, National Bureau of Economic Research.

Nethersole (1885). Report on the Relations of the Zamindar and the Gaontias in the Bijepur, Barpali and Patkulunda Zamindaris of the Sambalpur District. Printed in 1885; cited in Muhammad Hamid (1927), *Final Report on the Land Revenue Settlement of the Sambalpur District 1926.*

Oh, S. (2023). Does identity affect labor supply? *American Economic Review 113*(8), 2055–2083.

O'Malley, L. S. S. (1909). *Sambalpur.* Number Bengal District Gazetteers.

Piketty, T. (2020). *Capital and Ideology.* Cambridge, MA: Belknap Press of Harvard University Press. Translated by Arthur Goldhammer.

Pocock, D. F. (1957). Inclusion and Exclusion: A Process in the Caste System of Gujerat. *Southwestern Journal of Anthropology 13*(1), 19–31.

Shayo, M. (2020). Social identity and economic policy. *Annual Review of Economics 12*(1), 355–389.

Skoda, U., K. B. Nielsen, and M. Qvortrup Fibiger (2013). *Navigating social exclusion and inclusion in contemporary India and beyond : Structures, agents, practices*. New York, NY: Anthem Press: Anthem South Asian studies.

Spears, D. and A. Thorat (2019). The Puzzle of Open Defecation in Rural India: Evidence from a Novel Measure of Caste Attitudes in a Nationally Representative Survey. *Economic Development and Cultural Change 67*(4), 725–755.

Srinivas, M. (1952). *Religion and society among the Coorgs of south India*. Bombay: Asia Publishing House.

Srinivas, M. (1966). *Social Change in Modern India*. Rabindranath Tagore Memorial Lectureship Association for Asian Studies. University of California Press.

Srinivas, M., Y. Damle, S. Shahani, and A. Beteille (1959). Caste: A trend report and bibliography. *Current Sociology 8*(3), 135–151.

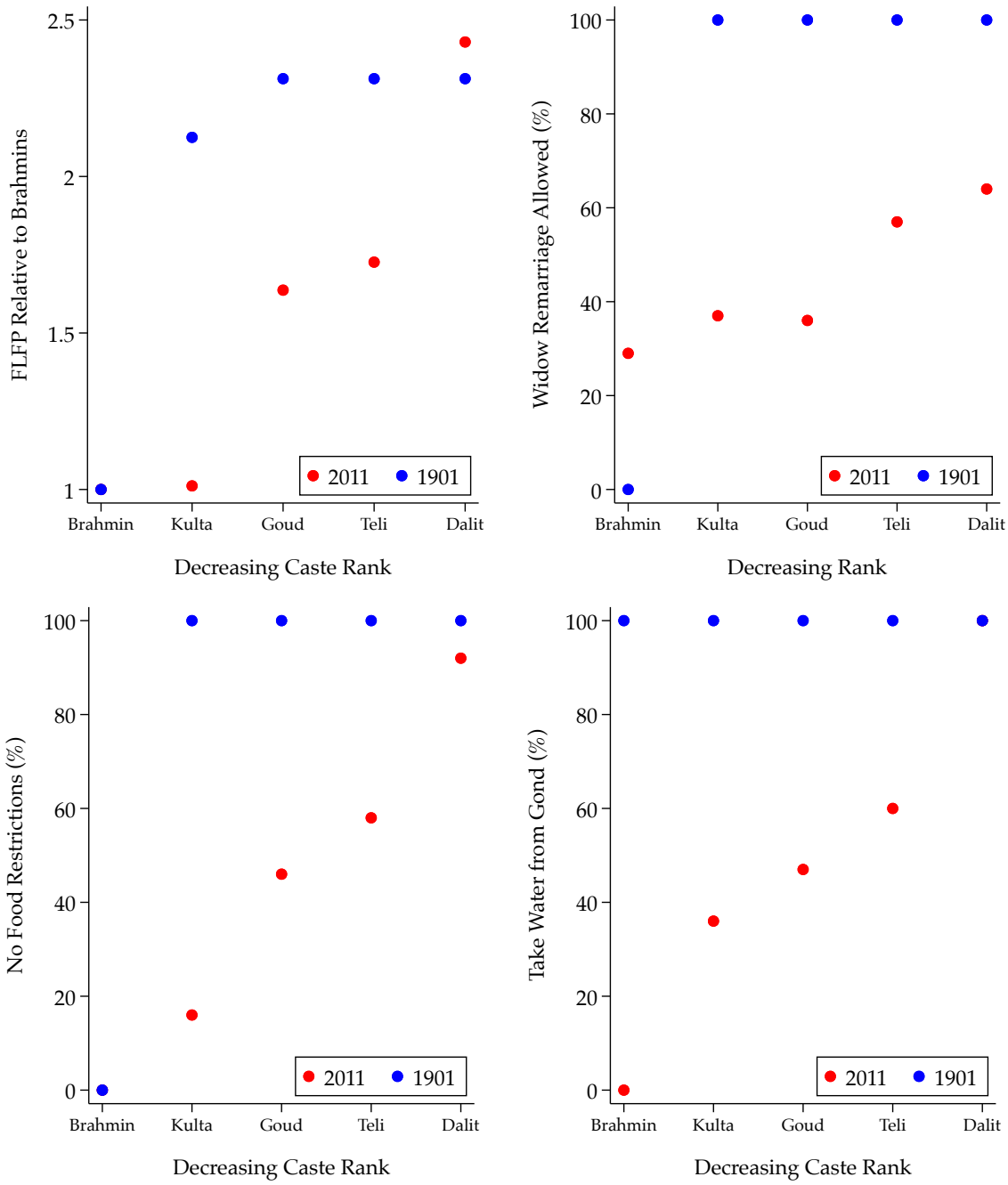
Srinivas, M. N. (1956). A note on sanskritization and westernization. *The Far Eastern Quarterly 15*(4), 481–496.

Teso, E. (2019). The long-term effect of demographic shocks on the evolution of gender roles: Evidence from the transatlantic slave trade. *Journal of the European Economic Association 17*(2), 497–534.

UN Subcommission on Prevention of Discrimination and Protection of Minorities. Working Group on Indigenous Populations (1994). Report of the working group on indigenous populations on its 12th session. Technical Report E/CN.4/Sub.2/1994/30, United Nations. Geneva, 17 August 1994.

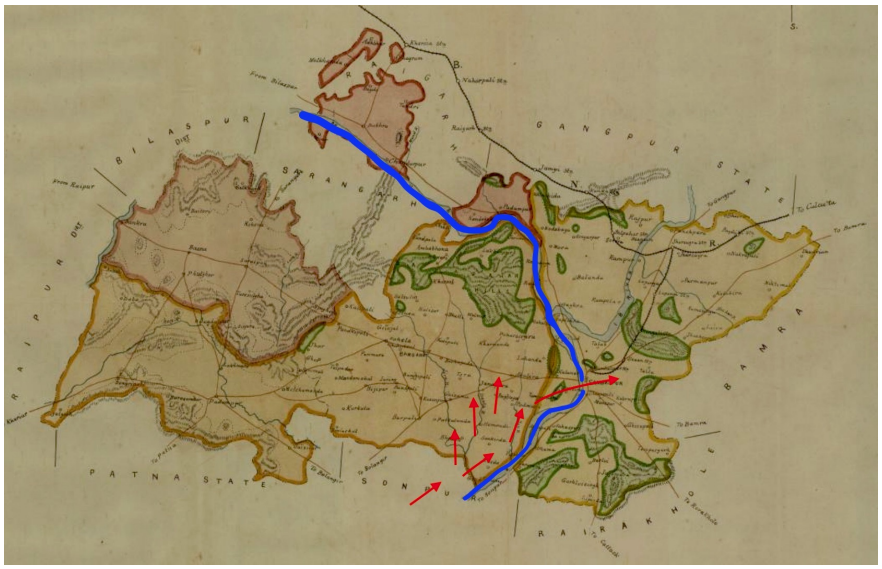
Xaxa, V. (2008). *State, Society, and Tribes: Issues in Post-colonial India*. Dorling Kindersley (India), licencees of Pearson Education in South Asia.

Figure 1: Purity Norms Adoption in the 20th and 21st Centuries by Caste



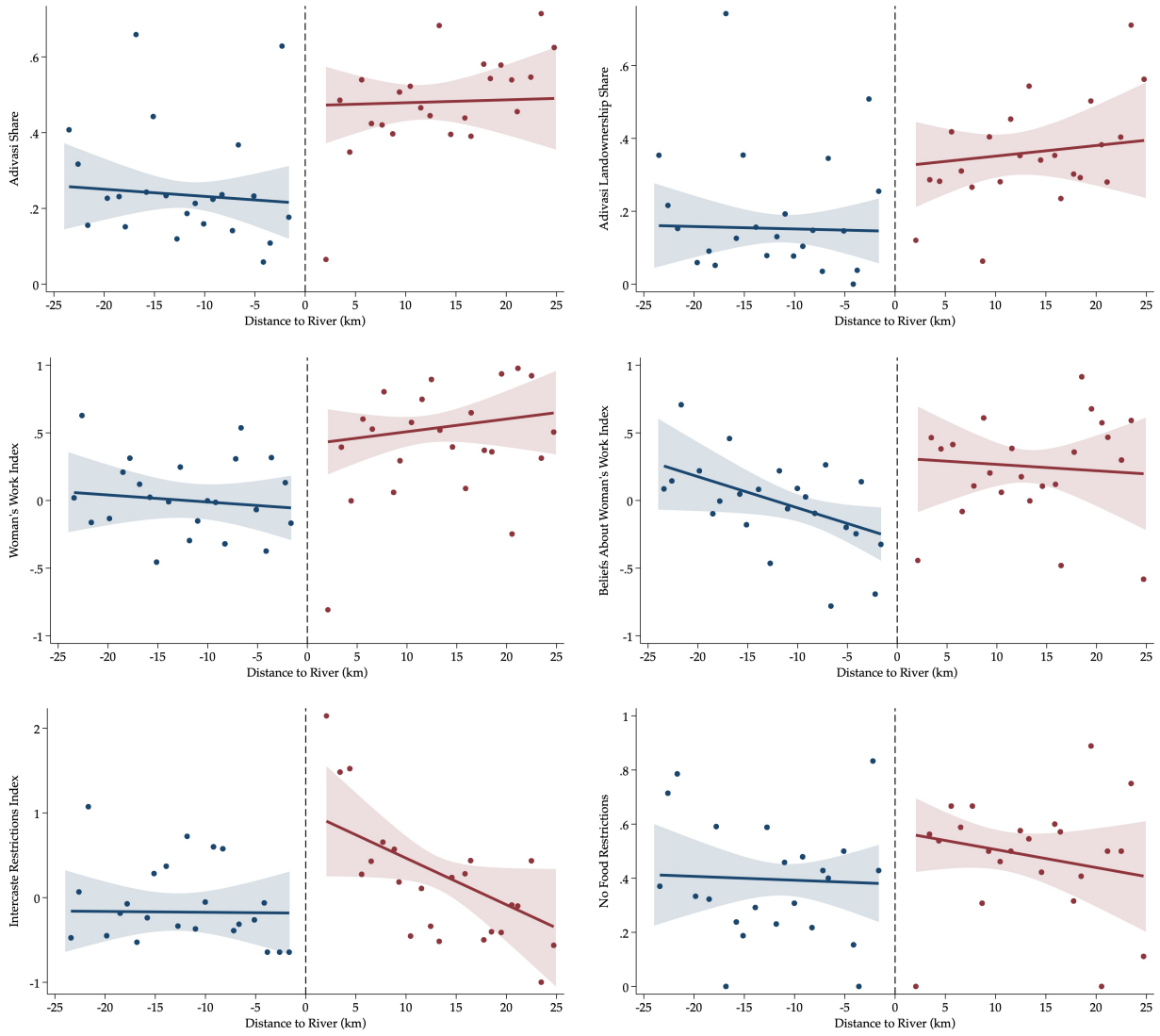
Notes: The figure plots the adoption of purity norms against caste rank over time. The caste ranking is from the 1901 British Census of India. The female labor force participation data for 1901 is obtained from the 1901 Census of India and for 2011 is obtained from the 2011 Socio-Economic Caste Census. The historical purity norms data is obtained from: 1885-1889, 1906, and 1921 Reports on the Land Settlement of the Sambalpur District; Correspondence on the Revised Land Settlement Report for the Years 1900-1910 for Sambalpur District; and the 1909 and 1915 Imperial Gazetteers for the Sambalpur District. Historical data is validated against contemporaneous ethnographic evidence, see Data Appendix for details. The present-day purity norms outcomes are obtained from primary survey data collection in Odisha.

Figure 2: Sambalpur District in 1906



Notes: This map shows Sambalpur District in 1906. The Mahanadi River is shaded in blue and the red arrows represent the direction of migration. The base map is reproduced from Dewar (1908).

Figure 3: RDD Plots



Notes: The figures show RDD plots for our main outcomes. Observations east of the Mahanadi River are shown in red and observations west of the Mahanadi River are shown in blue. Each dot represents a binned outcome mean. The local linear trends are estimated separately on each side of the river using a triangular kernel and 25km bandwidth. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level and the figures show 95% confidence intervals. The sample consists of 150 villages on either side of the Mahanadi River. The first two figures show village-level Adivasi population and landownership shares based on 2011 census data. The remaining outcomes are obtained from our own surveys with Hindu caste men and village elders. See Data Appendix for more details on variable definitions.

Table 1: Average Purity Norm Adherence Among Adivasis and Hindus

	Adivasi Mean	Low Rank Difference	Middle Rank Difference	High Rank Difference
	(1)	(2)	(3)	(4)
Work Index	0.000	-0.025	-0.157***	-0.212***
	[1.000]	(0.015)	(0.014)	(0.015)
Ever Worked	0.697	-0.038***	-0.236***	-0.359***
	[0.460]	(0.012)	(0.011)	(0.013)
Allowed to Work	0.836	-0.017*	-0.119***	-0.194***
	[0.371]	(0.010)	(0.009)	(0.012)
Earnings in Past Year	8026.850	-528.733	-3094.061***	-3924.690***
	[24916.923]	(382.712)	(351.469)	(372.481)
Decision Restrictions Index	-0.000	0.049*	0.049**	0.145***
	[1.000]	(0.029)	(0.025)	(0.029)
Mobility Restrictions Index	0.000	0.227***	0.195***	0.285***
	[1.000]	(0.025)	(0.022)	(0.026)
Food Restrictions Index	0.000	0.153***	0.467***	0.604***
	[1.000]	(0.027)	(0.024)	(0.029)
Marriage Restrictions Index	-0.000	0.178***	0.214***	0.322***
	[1.000]	(0.022)	(0.020)	(0.023)
Intercaste Restrictions Index	0.000	-0.143***	0.135***	0.319***
	[1.000]	(0.022)	(0.020)	(0.023)

Notes: The data is obtained from IHDS (2011). The sample includes all Adivasi and caste households in rural India. Columns 2-4 report coefficients from a joint regression in which we regress the relevant outcome against dummies for whether the woman or household is from a low-rank caste, middle-rank caste, or high-rank caste. Adivasis are the omitted group. Robust standard errors are shown in parentheses. Tables A1 and A2 show the results separately for each index component. See Data Appendix for details on variable definitions and construction.

Table 2: The Effect of Adivasi Share on Work Outcomes Among Hindu Women

		Work Index Components		
	Work Index	Ever Worked	Allowed to Work	Earnings in Past Year (Poisson)
	(1)	(2)	(3)	(4)
Panel A: Pooled				
Adivasi Share	0.472***	0.218***	0.127***	0.627***
	(0.094)	(0.048)	(0.038)	(0.144)
Mean if Adivasi Share=0	-0.000	0.438	0.764	4280.843
	[1.000]	[0.496]	[0.425]	[9599.747]
N	20094	20074	18978	20095
PSU	1322	1322	1322	1323
Panel B: By Caste Rank				
γ_1: Adivasi Share * Middle Rank	0.638***	0.342***	0.193***	0.659***
	(0.135)	(0.068)	(0.055)	(0.206)
γ_2: Adivasi Share * High Rank	0.097	0.053	0.007	0.249
	(0.247)	(0.111)	(0.126)	(0.463)
γ_3: Adivasi Share * Low Rank	0.123	0.013	0.046	0.101
	(0.133)	(0.074)	(0.058)	(0.250)
P-value from F-Test				
$\gamma_1 = \gamma_2$	0.046	0.018	0.163	0.410
$\gamma_1 = \gamma_3$	0.002	0.000	0.033	0.060
N	13917	13907	13113	13917
PSU	1231	1231	1226	1231

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi share and state fixed effects. In Panel B, we interact Adivasi share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. Outcome means by caste rank are shown in Table A6. See Data Appendix for details on variable definitions and construction.

Table 3: The Effect of Adivasi Share on Additional Norms Adherence Among Hindu Households

	Pooled Index	(Inverted) Work Index	Decision Restrictions Index	Mobility Restrictions Index	Marriage Restrictions Index	Food Restrictions Index	Intercaste Restrictions Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Pooled							
Adivasi Share	-0.635***	-0.472***	-0.337***	-0.463***	-0.382***	-0.353***	-0.208**
	(0.102)	(0.094)	(0.109)	(0.120)	(0.099)	(0.097)	(0.095)
Mean if Adivasi Share=0	0.000	0.000	-0.000	-0.000	-0.000	0.000	0.000
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
N	23602	20094	20074	20088	23540	23542	21182
PSU	1331	1322	1322	1322	1331	1331	1331
Panel B: By Caste Rank							
γ_1: Adivasi Share * Middle Rank	-0.888***	-0.638***	-0.478***	-0.574***	-0.454***	-0.611***	-0.224
	(0.126)	(0.135)	(0.137)	(0.160)	(0.146)	(0.141)	(0.137)
γ_2: Adivasi Share * High Rank	-0.038	-0.097	-0.069	-0.130	-0.126	-0.046	-0.031
	(0.252)	(0.247)	(0.270)	(0.384)	(0.294)	(0.288)	(0.207)
γ_3: Adivasi Share * Low Rank	-0.398**	-0.123	-0.393***	-0.700***	-0.309*	-0.056	-0.001
	(0.156)	(0.133)	(0.140)	(0.209)	(0.165)	(0.153)	(0.172)
P-value from F-Test							
$\gamma_1 = \gamma_2$	0.002	0.046	0.143	0.273	0.305	0.069	0.407
$\gamma_1 = \gamma_3$	0.008	0.002	0.590	0.583	0.460	0.004	0.266
N	16312	13917	13907	13915	16266	16269	14607
PSU	1242	1231	1231	1231	1242	1242	1242

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi share and state fixed effects. In Panel B, we interact Adivasi share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. Outcome means by caste rank are shown in Table A6. Tables A3–A5 provide the regression estimates for each index component. See Data Appendix for details on variable definitions and construction.

Table 4: Heterogeneity by Historical Adivasi Agricultural Practices

		Work Index Components		
	Work Index	Ever Worked	Allowed to Work	Earnings in Past Year
	(1)	(2)	(3)	(4)
Panel A: Adivasi Women				
Traditionally Non-Plough Adivasi	0.238***	0.098***	0.047**	0.433***
	(0.061)	(0.027)	(0.023)	(0.126)
Outcome Mean for Traditionally Plough Adivasi	0.000	0.684	0.836	4401.765
	[1.000]	[0.465]	[0.370]	[9670.388]
N	1272	1271	1218	1272
Panel B: Hindu Women				
Traditionally Non-Plough Adivasi Share	0.400***	0.329***	0.057	0.378**
	(0.131)	(0.079)	(0.059)	(0.182)
Traditionally Plough Adivasi Share	-0.084	-0.027	-0.045	-0.086
	(0.149)	(0.077)	(0.072)	(0.253)
p-value: Trad. Non-Plough Adivasi Share = Trad. Plough Adivasi Share	0.004	0.001	0.200	0.084
Outcome Mean if Adivasi Share=0	-0.000	0.552	0.762	4901.576
	[1.000]	[0.498]	[0.426]	[8213.897]
N	3974	3968	3818	3974
PSU	307	307	307	307

Notes: The data is obtained from IHDS (2011). The sample includes rural areas in central states: Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, and Rajasthan. In Panel A, the sample consists of Adivasi women and we regress the outcome against a dummy for the woman is from an Adivasi group that did not traditionally practice plough agriculture and state fixed effects. In Panel B, the sample consists of Hindu women and we regress the outcome against against tradtionally non-plough Adivasi share, tradtionally plough Adivasi share and state fixed effects. Adivasi shares are calculated at the PSU (village) level. The work index is standardized with respect to each sample. We report robust standard errors in Panel A and clustered standard errors at the PSU level in Panel B. See Data Appendix for details on variable definitions and construction.

Table 5: Effects on Village Composition and Hindu Norms Adherence in RDD Analysis

	Village Composition		Hindu Behavior and Beliefs			
	Adivasi Share	Adivasi Landowner-ship Share	Woman's Work Index	Beliefs About Women's Work Index	Intercaste Integration Index	No Food Restrictions
	(1)	(2)	(3)	(4)	(5)	(6)
East	0.262***	0.196**	0.590***	0.610**	1.916***	0.223*
	(0.085)	(0.089)	(0.200)	(0.263)	(0.478)	(0.118)
Mean for West of River	0.239	0.161	-0.000	0.000	-0.000	0.376
	[0.168]	[0.179]	[1.000]	[1.000]	[1.000]	[0.485]
N			921	926	906	912
Villages	150	147	150	150	144	150

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Column 1 uses village-level data from the 2011 population census. Column 2 uses village-level data from the Socio-Economic and Caste Census. Columns 3–6 use our own survey data with Hindu caste men and village elders. Standard errors clustered at the village level. Tables A17 and A18 provide the regression estimates for each index component. See Data Appendix for details on variable definitions and construction.

Table 6: Effects on Adivasi Integration in RDD Analysis

		Index Components				
	Adivasi Integration Index	Number of Adivasi Friends	Has Adivasi Ritual Friend	Coins Given to Adivasi Respect	Does Not Practice Adivasi Untouchability	Adivasi Ranks ≥ Middle Caste in Hierarchy
	(1)	(2)	(3)	(4)	(5)	(6)
East	2.195***	0.688*	0.403***	0.902***	0.591***	0.039
	(0.371)	(0.358)	(0.070)	(0.329)	(0.156)	(0.057)
Mean for West of River	0.000	0.607	0.101	3.089	0.348	0.052
	[1.000]	[0.862]	[0.301]	[0.932]	[0.409]	[0.223]
N	926	737	924	724	903	421
Villages	150	114	150	113	143	141

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Outcomes come from our own survey data with Hindu caste men and village elders. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

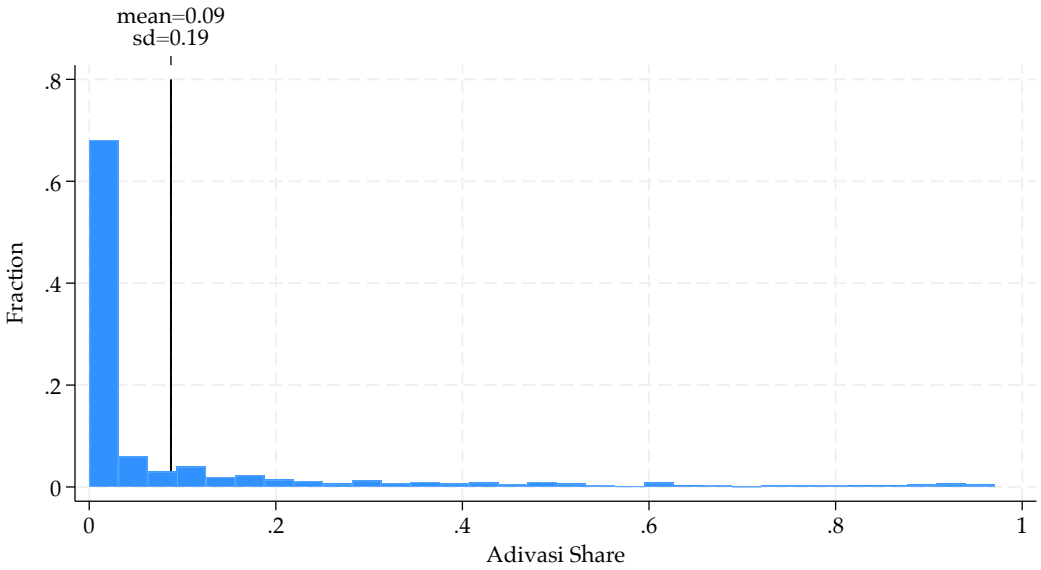
Table 7: The Effect of Adivasi Power on Hindu Norms Adherence

	First Stage	Second Stage		
	Village Has Adivasi Jhankhar	Adivasi Integration Index	Women's Work Index	No Food Restrictions
	(1)	(2)	(3)	(4)
Watchman Block	0.214***			
	(0.061)			
Village Has Jhankhar		1.357**	0.509*	0.311**
		(0.631)	(0.294)	(0.129)
F-Stat	12.282			
Mean for Non-Watchman Blocks	0.512	-0.000	0.000	0.066
	[0.500]	[1.000]	[1.000]	[0.210]
N	1354	1066	1321	1354

Notes: The table shows village-level regressions using sarpanch and ward member surveys (columns 1-4). Column 1 presents the first-stage estimates, where an indicator for whether the village has an Adivasi jhankhar is regressed on an indicator for whether the block allocated the position of village watchman to the Adivasi jhankhar. In Columns 2–4, each outcome is regressed on an indicator for the presence of an Adivasi jhankhar, instrumented by whether the block allocated the watchman position to the jhankhar. All specifications include a control for whether the village is located in Sambalpur district. Standard errors are clustered at the block level. Table A24 provides the regression estimates for each index component. See Data Appendix for details on variable definitions and construction.

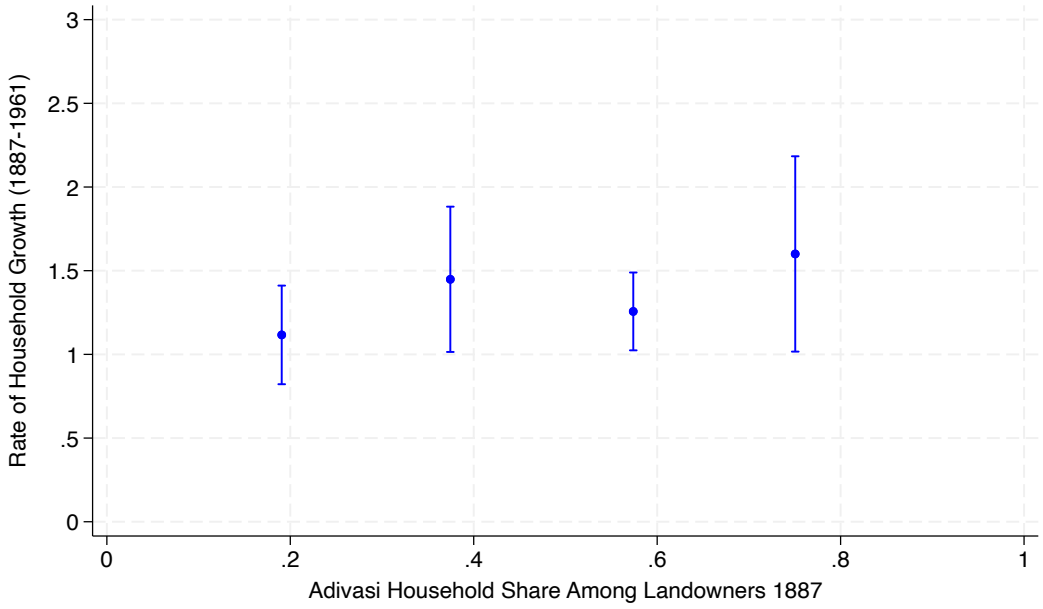
A. Tables and Figures

Figure A1: Distribution of Adivasi Share



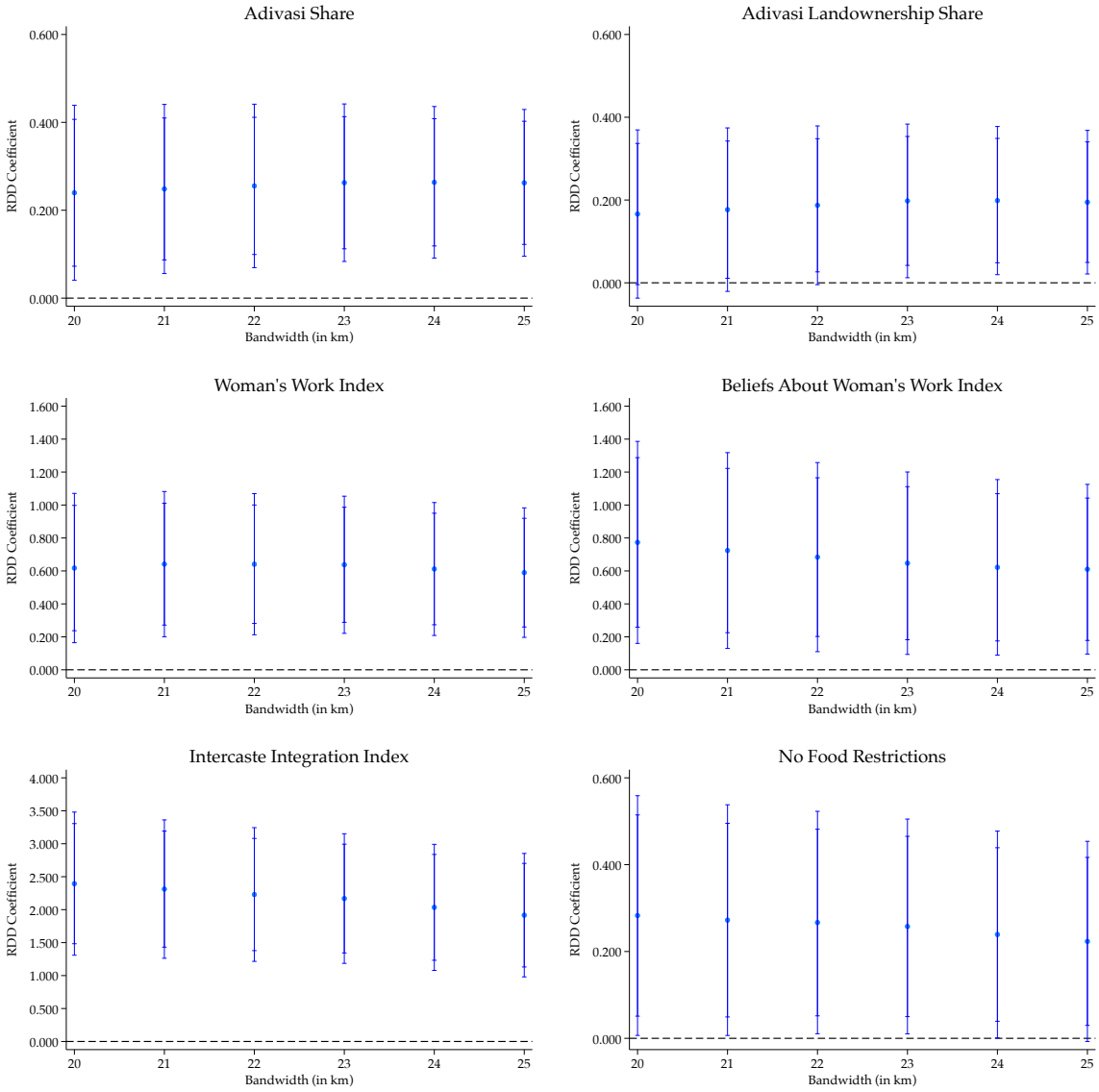
Notes: This figure plots village-level Adivasi shares across rural India using data from IHDS (2011).

Figure A2: Historical Adivasi Share and Population Growth



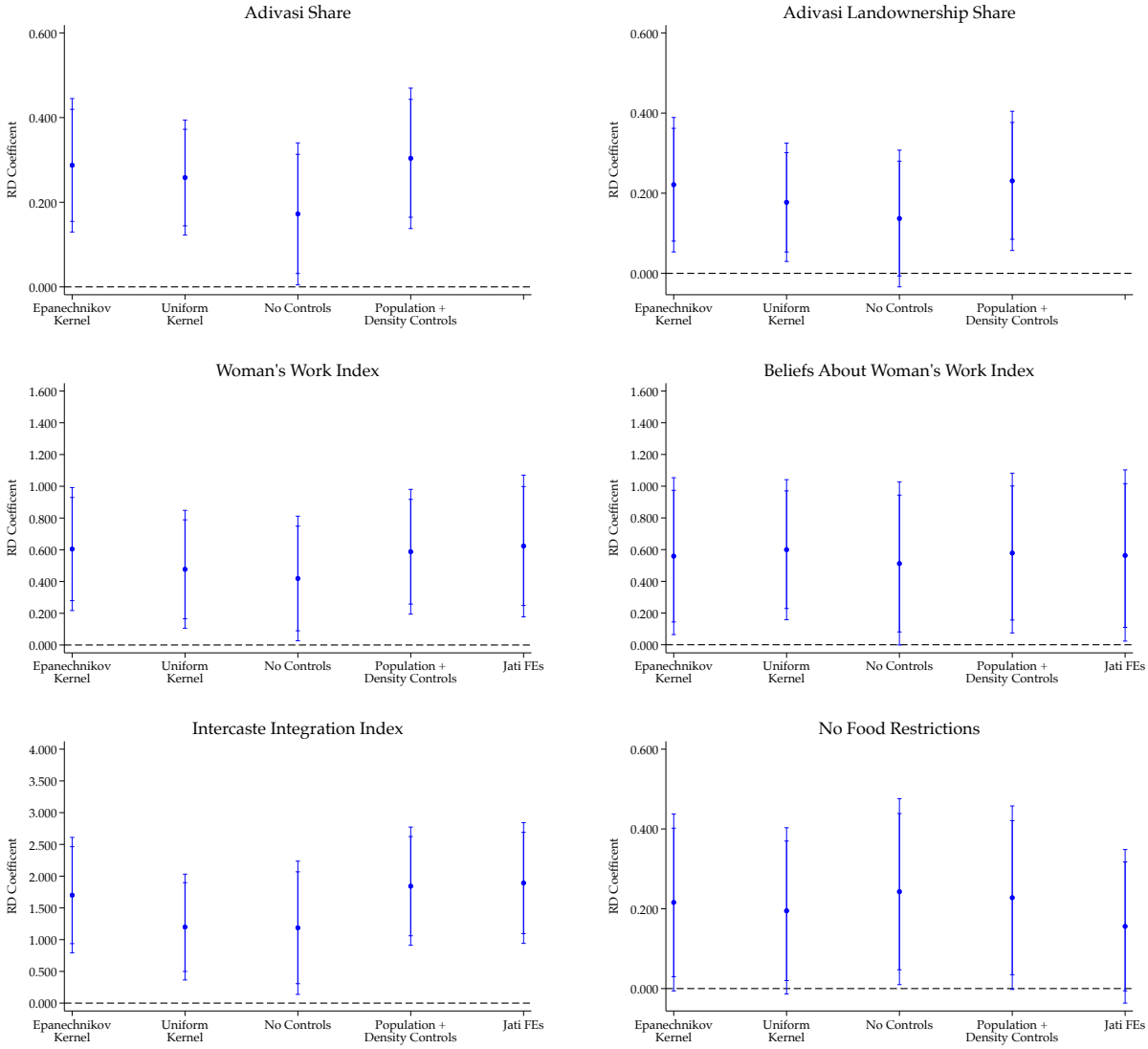
Notes: This figure plots village-level rate of household population growth between the years 1887 and 1961 against the share of Adivasi households among all landowning households in 1887. The share of landowning households in 1887 comes from village land settlement records and the household population in 1961 comes from the 1961 population census. See Data Appendix for details on variable definitions and construction.

Figure A3: Robustness to RDD Bandwidth



Notes: The figures show the RDD coefficients for our main outcomes across different bandwidth definitions. All regressions use a local linear specification with a triangular kernel, estimated separately on each side of the river boundary. The range plots correspond to 90 and 95 percent confidence intervals. Standard errors clustered at the village level. Adivasi share is based on village-level data from the 2011 population census and Adivasi landownership share is based on village-level data from the Socio-Economic and Caste Census. The other four outcomes use our own survey data with Hindu caste men and village elders. See Data Appendix for details on variable definitions and construction.

Figure A4: Additional RDD Robustness Checks



Notes: The figures report RDD coefficients for our main outcomes across alternative specifications. The first and second coefficients are estimated using Epanechnikov and uniform kernels, respectively. The third coefficient is estimated without controls. The fourth specification controls for total population and population density in addition to distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. The fifth specification restricts the survey sample to the five main jatis in our data (Dumal, Goud, Kulta, Kumhar, and Teli; N=873) and includes jati fixed effects, along with controls for distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. The range plots correspond to 90 and 95 percent confidence intervals. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A1: Average Purity Norm Adherence Among Adivasis and Hindus: Decision and Mobility Restrictions Index Components

	Adivasi Mean	Low Rank Difference	Middle Rank Difference	High Rank Difference
	(1)	(2)	(3)	(4)
Decision Restrictions Index	-0.00	0.05*	0.05**	0.14***
	[1.00]	(0.03)	(0.02)	(0.03)
Not Decide: What to Cook	0.05	0.01	0.01**	0.03***
	[0.21]	(0.01)	(0.01)	(0.01)
Not Decide: Purchasing Expensive Item	0.19	0.04***	0.04***	0.08***
	[0.39]	(0.01)	(0.01)	(0.01)
Not Decide: Number of Children to Have	0.07	-0.01	-0.00	0.00
	[0.26]	(0.01)	(0.01)	(0.01)
Not Decide: What to Do if She Falls Sick	0.13	0.03***	0.01	0.05***
	[0.33]	(0.01)	(0.01)	(0.01)
Not Decide: Buy Land/Property	0.19	0.04***	0.04***	0.09***
	[0.40]	(0.01)	(0.01)	(0.01)
Not Decide: Wedding Expense	0.14	0.04***	0.04***	0.08***
	[0.35]	(0.01)	(0.01)	(0.01)
Not Decide: What to Do if Child Is Sick	0.06	0.03***	0.02***	0.04***
	[0.24]	(0.01)	(0.01)	(0.01)
Not Decide: To Whom Child Should Marry	0.09	0.00	0.00	0.02**
	[0.29]	(0.01)	(0.01)	(0.01)
Mobility Restrictions Index	0.00	0.23***	0.19***	0.28***
	[1.00]	(0.03)	(0.02)	(0.03)
Cannot Visit Local Health Center Alone	0.33	0.01	0.01	0.03**
	[0.47]	(0.01)	(0.01)	(0.01)
Cannot Visit Kirana Shop Alone	0.22	0.01	0.03***	0.05***
	[0.42]	(0.01)	(0.01)	(0.01)
Cannot Travel Alone to Friend House	0.21	0.04***	0.02**	0.05***
	[0.41]	(0.01)	(0.01)	(0.01)
Cannot Take Public Transport Alone	0.49	0.02	0.00	0.01
	[0.50]	(0.01)	(0.01)	(0.01)
Practice Purdah	0.48	0.14***	0.13***	0.16***
	[0.50]	(0.01)	(0.01)	(0.01)

Notes: The data is obtained from IHDS (2011). The sample includes all Adivasi and caste households in rural India. Columns 2-4 report coefficients from a joint regression in which we regress the relevant outcome against dummies for whether the woman or household is from a low-rank caste, middle-rank caste, or high-rank caste. Adivasis are the omitted group. Robust standard errors are shown in parentheses. See Data Appendix for details on variable definitions and construction.

Table A2: Average Purity Norm Adherence Among Adivasis and Hindus: Marriage, Food, and Intercaste Restrictions Index Components

	Adivasi Mean	Low Rank Difference	Middle Rank Difference	High Rank Difference
	(1)	(2)	(3)	(4)
Marriage Restrictions Index	-0.00	0.18***	0.21***	0.32***
	[1.00]	(0.02)	(0.02)	(0.02)
Widow Remarriage Prohibited	0.37	0.05***	0.04***	0.16***
	[0.48]	(0.01)	(0.01)	(0.01)
Practice Dowry	0.67	0.08***	0.11***	0.12***
	[0.47]	(0.01)	(0.01)	(0.01)
No Choice in Spouse	0.45	0.04***	0.02*	-0.00
	[0.50]	(0.01)	(0.01)	(0.01)
Food Restrictions Index	0.00	0.15***	0.47***	0.60***
	[1.00]	(0.03)	(0.02)	(0.03)
Meat Taboo	0.09	0.04***	0.23***	0.28***
	[0.29]	(0.01)	(0.01)	(0.01)
Alcohol Taboo	0.42	0.08***	0.21***	0.23***
	[0.49]	(0.02)	(0.01)	(0.02)
Men Eat First	0.29	-0.00	0.02*	0.05***
	[0.45]	(0.01)	(0.01)	(0.01)
Intercaste Restrictions Index	0.00	-0.14***	0.13***	0.32***
	[1.00]	(0.02)	(0.02)	(0.02)
Practice Untouchability	0.27	-0.15***	0.09***	0.22***
	[0.45]	(0.01)	(0.01)	(0.01)
Intercaste Marriage Prohibited	0.72	0.02**	0.01	0.03**
	[0.45]	(0.01)	(0.01)	(0.01)
Inter-Community Conflict	0.08	0.01	0.00	0.02**
	[0.28]	(0.01)	(0.01)	(0.01)

Notes: The data is obtained from IHDS (2011). The sample includes all Adivasi and caste households in rural India. Columns 2-4 report coefficients from a joint regression in which we regress the relevant outcome against dummies for whether the woman or household is from a low-rank caste, middle-rank caste, or high-rank caste. Adivasis are the omitted group. Robust standard errors are shown in parentheses. See Data Appendix for details on variable definitions and construction.

Table A3: The Effect of Adivasi Share on Decision Restrictions Index Components

	Decision Restrictions Index Components (Respondent Does Not Decide...)							
	What to Cook	Purchasing Expensive Item	Number of Children to Have	What to Do if She Falls Sick	Buy Land/Property	Wedding Expense	What to Do if Child Is Sick	To Whom Child Should Marry
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Pooled								
Adivasi Share	-0.075***	-0.161***	-0.065**	-0.032	-0.148***	-0.154***	-0.096***	-0.067*
	(0.022)	(0.049)	(0.027)	(0.045)	(0.052)	(0.044)	(0.031)	(0.040)
Mean if Adivasi Share=0	0.086	0.261	0.080	0.157	0.284	0.228	0.108	0.137
	[0.280]	[0.439]	[0.272]	[0.364]	[0.451]	[0.420]	[0.311]	[0.344]
N	20060	19969	19300	20051	19787	19999	19075	18982
PSU	1322	1321	1317	1322	1319	1321	1321	1322
Panel B: By Caste Rank								
γ_1: Adivasi Share * Middle Rank	-0.087***	-0.220***	-0.107***	-0.108*	-0.215***	-0.217***	-0.095**	-0.094*
	(0.028)	(0.068)	(0.038)	(0.060)	(0.070)	(0.058)	(0.045)	(0.050)
γ_2: Adivasi Share * High Rank	-0.039	-0.061	-0.014	0.106	-0.003	0.008	-0.050	-0.040
	(0.060)	(0.124)	(0.072)	(0.116)	(0.138)	(0.118)	(0.085)	(0.096)
γ_3: Adivasi Share * Low Rank	-0.076***	-0.260***	-0.099***	-0.046	-0.130	-0.227***	-0.161***	-0.038
	(0.027)	(0.078)	(0.034)	(0.086)	(0.093)	(0.074)	(0.038)	(0.080)
P-value from F-Test								
$\gamma_1 = \gamma_2$	0.440	0.235	0.229	0.074	0.147	0.067	0.607	0.591
$\gamma_1 = \gamma_3$	0.752	0.644	0.837	0.525	0.396	0.905	0.179	0.488
N	13899	13834	13404	13894	13705	13872	13228	13168
PSU	1231	1231	1226	1231	1228	1229	1226	1224

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi share and state fixed effects. In Panel B, we interact Adivasi share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. Outcome means by caste rank are shown in Table A6. See Data Appendix for details on variable definitions and construction.

Table A4: The Effect of Adivasi Share on Mobility and Marriage Restrictions Index Components

	Mobility Restrictions Index Components					Marriage Restrictions Index Components		
	Cannot Visit Local Health Center Alone	Cannot Visit Kirana Shop Alone	Cannot Travel Alone to Friend House	Cannot Take Public Transport Alone	Practice Purdah	Widow Remarriage Prohibited	Practice Dowry	No Choice in Spouse
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Pooled								
Adivasi Share	-0.056	-0.061	-0.059	-0.084	-0.264***	-0.157***	-0.065	-0.089*
	(0.056)	(0.045)	(0.040)	(0.054)	(0.062)	(0.058)	(0.043)	(0.047)
Mean if Adivasi Share=0	0.308	0.210	0.233	0.493	0.654	0.359	0.794	0.509
	[0.461]	[0.407]	[0.423]	[0.500]	[0.476]	[0.480]	[0.405]	[0.500]
N	19881	18872	19814	19794	20079	23137	23484	20070
PSU	1322	1321	1321	1321	1322	1330	1331	1322
Panel B: By Caste Rank								
γ_1: Adivasi Share * Middle Rank	-0.191***	-0.173***	-0.086*	-0.093	-0.247***	-0.211**	-0.023	-0.117*
	(0.071)	(0.061)	(0.052)	(0.074)	(0.084)	(0.083)	(0.058)	(0.069)
γ_2: Adivasi Share * High Rank	0.123	0.100	-0.034	0.054	-0.191	0.065	-0.046	-0.101
	(0.166)	(0.129)	(0.109)	(0.148)	(0.170)	(0.185)	(0.114)	(0.107)
γ_3: Adivasi Share * Low Rank	-0.122	-0.129**	-0.017	-0.256***	-0.336***	-0.137*	-0.078	-0.098
	(0.090)	(0.065)	(0.060)	(0.089)	(0.116)	(0.080)	(0.075)	(0.079)
P-value from F-Test								
$\gamma_1 = \gamma_2$	0.072	0.043	0.648	0.354	0.761	0.160	0.849	0.900
$\gamma_1 = \gamma_3$	0.482	0.548	0.333	0.105	0.471	0.432	0.503	0.835
N	13787	13033	13745	13724	13909	16003	16228	13906
PSU	1231	1229	1230	1231	1231	1239	1242	1230

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi share and state fixed effects. In Panel B, we interact Adivasi share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. Outcome means by caste rank are shown in Table A6. See Data Appendix for details on variable definitions and construction.

Table A5: The Effect of Adivasi Share on Food and Intercaste Restrictions Index Components

	Food Restrictions Index Components			Intercaste Restrictions Index Components		
	Meat Taboo	Alcohol Taboo	Men Eat First	Practice Untouchability	Intercaste Marriage Prohibited	Inter-Community Conflict
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Pooled						
Adivasi Share	-0.120***	-0.098**	-0.160***	-0.030	-0.077*	-0.040
	(0.044)	(0.049)	(0.054)	(0.053)	(0.043)	(0.026)
Mean if Adivasi Share=0	0.379	0.574	0.308	0.348	0.767	0.102
	[0.485]	[0.494]	[0.462]	[0.476]	[0.423]	[0.303]
N	23526	15380	20030	20603	20242	21147
PSU	1331	1305	1321	1329	1323	1331
Panel B: By Caste Rank						
γ_1: Adivasi Share * Middle Rank	-0.268***	-0.106	-0.218***	0.015	-0.069	-0.079**
	(0.071)	(0.072)	(0.072)	(0.080)	(0.066)	(0.032)
γ_2: Adivasi Share * High Rank	-0.089	0.066	-0.026	-0.018	0.096	-0.060
	(0.134)	(0.134)	(0.102)	(0.123)	(0.091)	(0.054)
γ_3: Adivasi Share * Low Rank	0.060	-0.018	-0.123	0.213**	-0.103	-0.043
	(0.066)	(0.095)	(0.101)	(0.093)	(0.082)	(0.044)
P-value from F-Test						
$\gamma_1 = \gamma_2$	0.232	0.248	0.106	0.812	0.127	0.752
$\gamma_1 = \gamma_3$	0.000	0.420	0.405	0.072	0.722	0.454
N	16260	10821	13881	14156	13944	14586
PSU	1242	1188	1231	1239	1232	1242

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi share and state fixed effects. In Panel B, we interact Adivasi share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. Outcome means by caste rank are shown in Table A6. See Data Appendix for details on variable definitions and construction.

Table A6: Outcome Means in Non-Adivasi Villages

	Full Sample (1)	Low Rank (2)	Middle Rank (3)	High Rank (4)
Work Index	-0.000	0.377	-0.103	-0.312
Ever Worked	0.438	0.618	0.386	0.294
Allowed to Work	0.764	0.877	0.740	0.668
Earnings in Past Year	4280.843	6196.194	3472.751	2634.965
Decision Restrictions Index	-0.000	0.006	0.040	-0.018
Not Decide: What to Cook	0.086	0.084	0.096	0.080
Not Decide: Purchasing Expensive Item	0.261	0.267	0.274	0.267
Not Decide: Number of Children to Have	0.080	0.075	0.091	0.071
Not Decide: What to Do if She Falls Sick	0.157	0.171	0.165	0.144
Not Decide: Buy Land/Property	0.284	0.285	0.291	0.308
Not Decide: Wedding Expense	0.228	0.236	0.236	0.240
Not Decide: What to Do if Child Is Sick	0.108	0.116	0.113	0.101
Not Decide: To Whom Child Should Marry	0.137	0.142	0.147	0.128
Mobility Restrictions Index	-0.000	0.037	0.087	0.029
Cannot Visit Local Health Center Alone	0.308	0.302	0.331	0.277
Cannot Visit Kirana Shop Alone	0.210	0.188	0.233	0.209
Cannot Travel Alone to Friend House	0.233	0.227	0.239	0.213
Cannot Take Public Transport Alone	0.493	0.506	0.507	0.452
Practice Purdah	0.654	0.692	0.697	0.716
Marriage Restrictions Index	-0.000	-0.086	0.036	0.009
Widow Remarriage Prohibited	0.358	0.327	0.337	0.475
Practice Dowry	0.794	0.749	0.816	0.719
No Choice in Spouse	0.509	0.526	0.542	0.463
Food Restrictions Index	0.000	-0.254	0.141	0.092
Meat Taboo	0.379	0.265	0.433	0.459
Alcohol Taboo	0.575	0.463	0.637	0.627
Men Eat First	0.308	0.276	0.355	0.262
Intercaste Restrictions Index	0.000	-0.129	0.037	0.215
Practice Untouchability	0.348	0.157	0.389	0.505
Intercaste Marriage Prohibited	0.767	0.805	0.759	0.797
Inter-Community Conflict	0.102	0.108	0.105	0.111

Notes: The data is obtained from IHDS (2011). The sample includes all caste households that live in a village without Adivasis in rural India. Column 1 reports means for all caste households and Columns 2-4 report means for low-rank, middle-rank, and high-rank households, respectively. See Data Appendix for details on variable definitions and construction.

Table A7: Robustness Checks for Countrywide Analysis

	Outcome: Pooled Index				
	Jati FEs	Distance Controls	Village Size + Density Controls	District FEs	Village FEs
	(1)	(2)	(3)	(4)	(5)
Panel A: Pooled					
Adivasi Share	-0.431***	-0.616***	-0.620***	-0.202**	
	(0.097)	(0.105)	(0.105)	(0.092)	
N	22643	22769	22631	23601	
PSU	1321	1267	1258	1330	
Panel B: By Caste Rank					
γ_1: Adivasi Share * Middle Rank	-0.694***	-0.879***	-0.886***	-0.301***	-0.473***
	(0.135)	(0.129)	(0.129)	(0.104)	(0.171)
γ_2: Adivasi Share * High Rank	0.033	-0.023	-0.045	0.260	
	(0.262)	(0.253)	(0.253)	(0.195)	
γ_3: Adivasi Share * Low Rank	-0.418**	-0.381**	-0.369**	0.035	
	(0.164)	(0.162)	(0.162)	(0.154)	
P-value from F-Test					
$\gamma_1 = \gamma_2$	0.011	0.002	0.002	0.005	
$\gamma_1 = \gamma_3$	0.164	0.008	0.006	0.044	
N	15969	15836	15749	16312	16265
PSU	1332	1332	1332	1332	1332

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi share and state fixed effects. In Panel B, we interact Adivasi share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi share is calculated at the PSU (village) level. Column 1 includes Jati fixed effects using harmonized data from Cassan et al. (2022). Column 2 controls for distance to the nearest town and distance to the district headquarters. Columns 3 controls for the number of households in the village and population density. Column 4 includes district fixed effects. Panel B in Column 5 only includes an interaction between Adivasi share and a middle-rank caste dummy, a middle-rank caste dummy, and village fixed effects. Standard errors are clustered at the PSU level. See Data Appendix for details on variable definitions and construction.

Table A8: Village Differences by Adivasi Share Across India

	Advasi Share = 0 Mean (1)	Adivasi Share Coefficient (2)
Panel A: Population and Remoteness		
Distance to Nearest Town	12.938	5.407***
	[9.708]	(1.361)
Distance to District HQ	43.514	16.075***
	[31.559]	(3.806)
Number of Households	630.025	-205.430***
	[824.501]	(69.903)
Population Density	141.048	-64.137
	[415.917]	(40.290)
Panel B: Village Infrastructure		
Village Has Paved Road	0.880	-0.165***
	[0.325]	(0.041)
Number of Public Primary Schools	1.687	0.090
	[1.464]	(0.187)
Number of Private Primary Schools	0.854	-0.346*
	[1.621]	(0.186)
Number of Public Village Clinics (Subcenters)	0.534	-0.089
	[0.735]	(0.073)
Number of Private Clinics	0.659	-0.439**
	[1.592]	(0.182)
PSU		1323

Notes: The data is obtained from IHDS (2011). The sample includes all IHDS villages in rural India. Column 1 presents the outcome mean in villages without Adivasis. In Column 2, we regress the outcome against Adivasi share and state fixed effects. Adivasi share is calculated at the PSU (village) level. Robust standard errors are shown in parentheses. See Data Appendix for details on variable definitions and construction.

Table A9: Discrete Specification

	Pooled Index	(Inverted) Work Index	Decision Restrictions Index	Mobility Restrictions Index	Marriage Restrictions Index	Food Restrictions Index	Intercaste Restrictions Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Adivasi Share $\geq$ 50%	-0.246***	-0.162**	-0.113	-0.069	-0.102	-0.211***	-0.127*
	(0.080)	(0.068)	(0.085)	(0.095)	(0.070)	(0.064)	(0.073)
Mean if Adivasi Share=0	0.000	0.000	-0.000	-0.000	-0.000	0.000	0.000
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
N	23602	20094	20074	20088	23540	23542	21182
PSU	1331	1322	1322	1322	1331	1331	1331

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. We regress the outcome against a dummy for whether the Adivasi share is at least 50% and state fixed effects. Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. See Data Appendix for details on variable definitions and construction.

Table A10: The Effect of Adivasi Share on Norms Adherence Among Adivasi Households

	Pooled Index	(Inverted) Work Index	Decision Restrictions Index	Mobility Restrictions Index	Food Restrictions Index	Marriage Restrictions Index	Intercaste Restrictions Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Adivasi Share	-0.262**	0.046	-0.070	-0.228*	-0.141*	-0.336***	-0.028
	(0.102)	(0.096)	(0.105)	(0.125)	(0.076)	(0.130)	(0.090)
N	3438	2834	2829	2834	3431	3429	3127
PSU	485	462	462	462	484	484	485

Notes: The data is obtained from IHDS (2011). The sample includes all Adivasi households in rural India. We regress the outcome against Adivasi share and state fixed effects. Adivasi share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. See Data Appendix for details on variable definitions and construction.

Table A11: The Effect of Adivasi Landownership Share on Hindu Norms Adherence

	Pooled Index	(Inverted) Work Index	Decision Restrictions Index	Mobility Restrictions Index	Food Restrictions Index	Marriage Restrictions Index	Intercaste Restrictions Index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Pooled							
Adivasi Landownership Share	-0.848***	-0.549***	-0.360**	-0.703***	-0.495***	-0.453***	-0.315***
	(0.130)	(0.115)	(0.140)	(0.131)	(0.105)	(0.138)	(0.119)
N	20651	17641	17625	17637	20601	20599	18487
PSU	1133	1125	1125	1125	1133	1133	1133
Panel B: By Caste Rank							
γ_1: Adivasi Landownership Share * Middle Rank	-0.993***	-0.719***	-0.491**	-0.647***	-0.595***	-0.596***	-0.172
	(0.162)	(0.156)	(0.225)	(0.179)	(0.168)	(0.193)	(0.202)
γ_2: Adivasi Landownership Share * High Rank	-0.242	-0.095	0.204	-0.692**	-0.222	0.247	-0.637***
	(0.243)	(0.310)	(0.348)	(0.274)	(0.282)	(0.317)	(0.244)
γ_3: Adivasi Landownership Share * Low Rank	-0.498***	-0.157	-0.306*	-1.056***	-0.086	-0.279	-0.104
	(0.170)	(0.123)	(0.177)	(0.185)	(0.151)	(0.206)	(0.204)
P-value from F-Test							
$\gamma_1 = \gamma_2$	0.006	0.069	0.062	0.888	0.250	0.018	0.126
$\gamma_1 = \gamma_3$	0.025	0.002	0.447	0.064	0.019	0.207	0.789
N	16312	13917	13907	13915	16269	16266	14607
PSU	1332	1332	1332	1332	1332	1332	1332

Notes: The data is obtained from IHDS (2011). The sample includes all caste households in rural India. In Panel A, we regress the outcome against Adivasi landownership share and state fixed effects. In Panel B, we interact Adivasi landownership share with dummy variables for each caste rank (caste rank dummy variables are also included in the regression but not reported). Adivasi landownership share is calculated at the PSU (village) level. Standard errors are clustered at the PSU level. See Data Appendix for details on variable definitions and construction.

Table A12: Nonplough Balance

	Distance to Nearest Town (1)	District to District HQ (2)	Number of House-holds (3)	Population Density (4)	Paved Road (5)	N Public Primary Schools (6)	N Private Primary Schools (7)	N Public Village Clinics (8)	N Private Clinics (9)
Traditionally Non-Plough Adivasi Share	7.074*	16.191*	-265.671***	-90.563	-0.262**	0.044	-0.785***	0.079	-0.549**
	(4.282)	(8.555)	(81.005)	(59.568)	(0.107)	(0.472)	(0.202)	(0.216)	(0.269)
Traditionally Plough Adivasi Share	6.453*	8.639	-176.402*	-55.944	-0.194	0.373	-0.295	-0.064	-0.731***
	(3.862)	(12.644)	(91.576)	(83.747)	(0.122)	(0.317)	(0.192)	(0.156)	(0.253)
p-value: Trad. Non-Plough Adivasi Share = Trad. Plough Adivasi Share	0.906	0.568	0.389	0.452	0.649	0.513	0.023	0.512	0.588
N	307	308	308	308	308	308	308	308	308

Notes: The data is obtained from IHDS (2011). The sample includes rural areas in central states: Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, and Rajasthan. We regress the outcome against against tradtionally non-plough Adivasi share, tradtionally plough Adivasi share and state fixed effects. Adivasi shares are calculated at the PSU (village) level. We report robust standard errors in parentheses. See Data Appendix for details on variable definitions and construction.

Table A13: RDD Balance Checks

	West of River		East of River		
	Mean	St. D.	RDD Coeff.	RDD St. E.	Villages
	(1)	(2)	(3)	(4)	(5)
Panel A: Geographic Characteristics					
Elevation	175.757	[39.984]	1.901	(4.575)	150
Slope	0.539	[1.016]	0.386**	(0.197)	150
Log Flow	2.054	[1.648]	1.058	(1.002)	150
Rice Suitability	1.515	[0.550]	-0.192	(0.355)	150
Forest Share	0.041	[0.066]	-0.021	(0.028)	150
Panel B: Remoteness					
Distance to Sambalpur City	20.500	[8.783]	-1.118	(1.608)	150
Distance to District HQ	24.273	[9.934]	-18.525***	(2.976)	150
Distance to Subdistrict HQ	14.076	[6.687]	-20.162***	(2.198)	150
Panel C: Population Characteristics (in 2011)					
Total Population of Village	1408.030	[881.939]	373.014	(273.328)	150
High-Rank Caste Share (Within Hindus)	0.073	[0.076]	0.000	(0.035)	148
Middle-Rank Caste Share (Within Hindus)	0.516	[0.203]	-0.091	(0.078)	148
Low-Rank Caste Share (Within Hindus)	0.411	[0.194]	0.091	(0.081)	148
Panel D: Historical Village Characteristics					
Adivasi Household Share Among Landowners in 1887	0.352	[0.194]	0.010	(0.085)	112
Adivasi Gaontia in 1887	0.060	[0.240]	-0.088	(0.056)	112

Notes: All regressions are run at the village level and use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Column 1 reports the sample mean for villages west of the Mahanadi River and column 3 reports the RDD coefficient. Column 4 reports robust standard errors. See Data Appendix for details on variable definitions and construction.

Table A14: Effects on Village Composition and Work Outcomes in Full Census Sample

	Village Composition			
	Adivasi Share	Adivasi Landowner-ship Share	Hindu Women Labor Force Participation Rate	Adivasi Women Labor Force Participation Rate
	(1)	(2)	(3)	(4)
East	0.295***	0.241***	0.125**	0.064
	(0.069)	(0.074)	(0.056)	(0.075)
Mean for West of River	0.286	0.199	0.158	0.280
	[0.230]	[0.234]	[0.118]	[0.196]
Villages	247	247	239	238

Notes: The sample contains all villages within 25km of the Mahanadi River, independently of whether they were part of the survey sample. The data on outcomes is obtained from the 2011 Population Census and 2011 Socio-Economic and Caste Census. All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A15: Comparison of Household and Village Characteristics (RDD)

	Literate	Occupation: Farmer	Wife's Occupation: Farmer	Owns Any Land	Total Land
	(1)	(2)	(3)	(4)	(5)
East	0.058	0.032	0.148*	-0.050	0.614
	(0.065)	(0.106)	(0.077)	(0.125)	(0.815)
Mean for West of River	0.872	0.806	0.274	0.726	3.061
	[0.335]	[0.396]	[0.447]	[0.446]	[4.329]
N	926	926	921	926	926
Villages	150	150	150	150	150

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A16: Earnings, Wages, and Prices (RDD)

	Any Female Earnings from Agricultural Labor	Female Earnings from Agricultural Labor (Poisson)	Any Male Earnings from Agricultural Labor	Male Earnings from Agricultural Labor (Poisson)	Women's Daily Market Wage (Rs.)	1961 Price Received per Tambi Rice	2022 Price Received per Kg Rice
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
East	0.285**	0.847	0.013	-0.298	-36.369**	-0.012	-2.022
	(0.115)	(0.704)	(0.121)	(0.661)	(18.253)	(0.053)	(1.332)
Mean for West of River	0.294	3010.557	0.329	4221.351	279.500	0.224	17.108
	[0.456]	[7247.357]	[0.471]	[10007.225]	[44.800]	[0.054]	[2.793]
N	838	838	838	838	369	103	336
Villages	129	129	129	129	150	125	150

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. In column 5, we include all villages within 25km of the Mahanadi River for which information on 1961 prices is available to maximize sample size. In column 6, the regression specification includes a dummy variable that indicates a change in measurement units in the survey. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A17: Effects on Work Index Components (RDD)

	Woman's Work Index Components		Beliefs About Women's Work Index Components					
	Occupation: Worker	Wife Worked Outside	Own Beliefs: Appropriate for Women to Work	Own Beliefs: Does Not Prefer Housewife as Daughter-in-Law	Community Beliefs: Appropriate for Women to Work	Community Beliefs: Does Not Prefer Housewife as Daughter-in-Law	Community Beliefs: Does Not Respect Housewife More	Community Beliefs: Does Not Respect Husband of Housewife More
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
East	0.184*	0.337***	0.211*	0.236*	0.202*	0.276*	0.126	0.022
	(0.099)	(0.099)	(0.108)	(0.131)	(0.109)	(0.143)	(0.114)	(0.122)
Mean for West of River	0.338	0.381	0.739	0.432	0.632	0.373	0.418	0.419
	[0.474]	[0.486]	[0.440]	[0.496]	[0.483]	[0.484]	[0.494]	[0.494]
N	921	921	849	833	926	809	919	878
Villages	150	150	133	133	150	133	150	141

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A18: Effects on Intercaste Integration Index Components (RDD)

	Intercaste Integration Index Components			
	Number of Dalit Friends	Coins Given to Dalit Respect	Does Not Practice Dalit Untouchability	Dalit Ranks $\geq$ Middle Caste in Hierarchy
	(1)	(2)	(3)	(4)
East	-0.032	0.834***	0.206***	0.040
	(0.266)	(0.323)	(0.079)	(0.085)
Mean for West of River	0.380	2.276	0.044	0.087
	[0.687]	[1.007]	[0.206]	[0.282]
N	737	687	337	405
Villages	114	107	134	135

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A19: Effects on Social Networks (RDD)

	Total Friends	Any Socialize	Any Advice	Any Financial Assistance	Any Manpower
	(1)	(2)	(3)	(4)	(5)
Panel A: Own Caste					
East	-0.740	-0.137**	-0.177**	0.224	-0.084
	(0.680)	(0.055)	(0.071)	(0.196)	(0.071)
Mean for West of River	2.775	0.963	0.941	0.453	0.963
	[1.873]	[0.190]	[0.236]	[0.498]	[0.190]
Panel B: Adivasi					
East	0.688*	0.375**	0.309*	0.145*	0.365**
	(0.358)	(0.179)	(0.163)	(0.077)	(0.181)
Mean for West of River	0.607	0.369	0.257	0.064	0.345
	[0.862]	[0.483]	[0.437]	[0.245]	[0.476]
Panel C: Upper or Middle Castes					
East	-1.739***	-0.777***	-0.735***	-0.111	-0.713***
	(0.366)	(0.146)	(0.150)	(0.119)	(0.137)
Mean for West of River	1.444	0.561	0.497	0.147	0.580
	[1.190]	[0.497]	[0.501]	[0.355]	[0.494]
Panel D: Low Castes					
East	-0.032	0.022	-0.005	0.052	0.007
	(0.266)	(0.154)	(0.130)	(0.079)	(0.146)
Mean for West of River	0.380	0.257	0.198	0.051	0.246
	[0.687]	[0.437]	[0.399]	[0.220]	[0.431]
N	737	737	737	737	737
Villages	114	114	114	114	114

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A20: RDD Results with Conley Standard Errors

	Estimate	S.E.	p-value
	(1)	(2)	(3)
Adivasi Share	0.258	(0.065)	0.000
Adivasi Landownership Share	0.177	(0.109)	0.106
Woman's Work Index	0.477	(0.138)	0.001
Beliefs About Woman's Work Index	0.600	(0.205)	0.003
Intercaste Integration Index	1.198	(0.476)	0.012
No Food Restrictions	0.195	(0.107)	0.069

Notes: All regressions are based on a local linear specification estimated separately on each side of the river boundary with a uniform kernel and 25km bandwidth. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. The table reports Conley standard errors with a cut-off window of 25km to account for spatial auto-correlation (Conley, 1999).

Table A21: Randomization Inference (RDD)

	Permutation p-value
	(1)
Adivasi Share	0.002
Adivasi Landownership Share	0.039
Woman's Work Index	0.010
Beliefs About Woman's Work Index	0.008
Intercaste Integration Index	0.008
No Food Restrictions	0.076

Notes: All regressions are based on a local linear specification estimated separately on each side of the river boundary with a triangular kernel and 25km bandwidth. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. To conduct randomization inference, we randomly reassign distance to the river for each village 1,000 times and re-estimate the RDD specification for each permutation. The p-value is the fraction of placebo estimates that exceed the actual estimate in absolute value.

Table A22: Alternative Labor Demand Explanations (RDD)

	Knows Current Wage	Know of Agr Labor Opportunities	Childcare Available	Believes that Agricultural Work for Women Is Safe
	(1)	(2)	(3)	(4)
East	-0.048	-0.116*	-0.152	-0.073
	(0.042)	(0.067)	(0.121)	(0.064)
Mean for West of River	0.963	0.953	0.662	0.967
	[0.189]	[0.213]	[0.474]	[0.178]
N	386	346	593	370
Villages	109	107	143	105

Notes: All regressions use a local linear specification with a triangular kernel and 25km bandwidth, estimated separately on each side of the river boundary. Controls include distance to the district headquarters, distance to the subdistrict headquarters, and terrain slope. Standard errors clustered at the village level. See Data Appendix for details on variable definitions and construction.

Table A23: Balance Check for Watchman Analysis

	Outside of Watchman Area		Inside of Watchman Area		
	Mean	St. D.	Coeff.	St. E.	Villages
	(1)	(2)	(3)	(4)	(5)
Adivasi Share	0.398	[0.309]	-0.025	(0.042)	1,358
Elevation	224.789	[78.040]	-28.711*	(15.360)	1,358
Slope	0.925	[1.049]	-0.298***	(0.090)	1,358
Log Flow	2.973	[2.403]	-0.382	(0.303)	1,358
Rice Suitability	1.887	[0.634]	0.098	(0.137)	1,358
Forest Share	0.168	[0.188]	-0.013	(0.056)	1,357

Notes: The table shows village-level regressions using sarpanch and ward member surveys. Each outcome is regressed on an indicator for the presence of an Adivasi jhankhar, instrumented by whether the block allocated the watchman position to the jhankhar. All specifications include a control for whether the village is located in Sambalpur district. Standard errors are clustered at the block level. See Data Appendix for details on variable definitions and construction.

Table A24: The Effect of Adivasi Power on Hindu Norms Adherence: Index Components

	Integration Index		Women's Work Index	
	No Adivasi Untouchability	Eat Together at Weddings	Hindu Women Labor Force Participation	Does Not Respect Housewife More
	(1)	(2)	(3)	(4)
Village Has Jhankhar	0.300*	0.590**	0.069	0.071
	(0.168)	(0.232)	(0.053)	(0.194)
Mean for Non-Watchman Blocks	0.133	0.270	0.182	0.635
	[0.296]	[0.391]	[0.171]	[0.431]
N	826	1062	1275	894

Notes: The table shows village-level regressions using sarpanch and ward member surveys. Each outcome is regressed on an indicator for whether the block allocated the watchman position to the jhankhar and an indicator for whether the village is located in Sambalpur district. Standard errors are clustered at the block level. See Data Appendix for details on variable definitions and construction.

B. Conceptual Framework

This appendix provides formal detail for the conceptual framework described in Section 2.2. The framework extends the model of Akerlof (1997) and follows the idea that access to status-linked relationships depends on social distance, with distance shaped both by inherited rank and by current behavior.

B.1 Setup

Individuals in group i choose their adherence to purity norms $x_{i,t} \in [0,1]$ in period $t \in \{0,1\}$. Think of $x_{i,t}$ as a composite index of prescriptive behaviors including: (a) women's role in society (including work outside the home); (b) food taboos; and (c) interactions with individuals from other ethnic groups. Higher x corresponds to stricter adherence to purity norms.

For simplicity, assume a two-period world, $t = 0, 1$, with today being period 1. Ethnic groups arrive with pre-existing norm $x_{i,0}$ and inherited social distance to the high-status group (Brahmins, denoted B) given by $|x_{i,0} - x_{B,0}|$. In our empirical application, this inherited distance is proxied by the 1901 Census caste ranking. (As discussed in the main text, the 1901 ranking can be interpreted as a persistent, inherited component of status, even if it imperfectly measured behavior at the time.)

B.2 Preferences

Utility is a function of (a) consumption and (b) benefits associated with social status (both intrinsic and material). Adhering to purity norms is costly; normalize consumption utility to zero when $x_{i,1} = 0$ and assume the cost is quadratic:

$$C(x_{i,1}) = \frac{c}{2} x_{i,1}^2, \qquad c > 0.$$

Status-linked benefits are increasing in proximity to Brahmins and in the population share of Brahmins relative to Adivasis. We capture "sticky status" by letting status benefits depend on both inherited distance (period 0) and current distance (period 1), in the reduced form:

$$U_i(x_{i,1}) \;=\; \frac{f_v}{\big(a + |x_{i,0} - x_{B,0}|\big)\big(b + |x_{i,1} - x_{B,1}|\big)} \;-\; \frac{c}{2} x_{i,1}^2, \tag{6}$$

where $a, b, c > 0$, and where f_v summarizes village-level returns to Brahmin-linked status relative to Adivasi-linked ties. In the simplest specification,

$$f_v \;=\; \alpha + \beta_B \cdot (\text{Brahmin share}_v) \;-\; \beta_A \cdot (\text{Adivasi share}_v), \qquad \beta_A > 0.$$

Thus higher Adivasi share lowers the net return to investing in caste status.

B.3 Relevant Range and Simplification

Focus on equilibria in which Brahmins remain at the top of the status ladder, so that $x_{B,t} \geq x_{i,t}$ for all $i \neq B$ and $t \in \{0,1\}$. This implies the relevant range is $x_{i,1} \leq x_{B,1}$ and $|x_{i,1} - x_{B,1}| = x_{B,1} - x_{i,1}$, and similarly $|x_{i,0} - x_{B,0}| = x_{B,0} - x_{i,0}$. Define inherited distance $d_{i,0} \equiv x_{B,0} - x_{i,0} \geq 0$ and current distance $d_{i,1} \equiv x_{B,1} - x_{i,1} \geq 0$. Then (6) becomes

$$U_i(x_{i,1}) \;=\; \frac{f_v}{\big(a + d_{i,0}\big)\big(b + d_{i,1}\big)} \;-\; \frac{c}{2} x_{i,1}^2, \qquad d_{i,1} = x_{B,1} - x_{i,1}. \tag{7}$$

B.4 Optimal Norm Adherence

For an interior optimum $x_{i,1} \in (0, x_{B,1})$, the first-order condition is

$$\frac{\partial U_i}{\partial x_{i,1}} = \underbrace{\frac{f_v}{(a + d_{i,0})\big(b + x_{B,1} - x_{i,1}\big)^2}}_{\equiv S_i(x_{i,1})} - c\, x_{i,1} \;=\; 0. \tag{8}$$

Concavity (sufficient condition). Since $x_{i,1} \le x_{B,1}$ implies $b + x_{B,1} - x_{i,1} \ge b$, a sufficient condition for U_i to be strictly concave on $[0, x_{B,1}]$ is

$$c \;>\; \frac{f_v}{(a + d_{i,0})\, b^3}. \tag{9}$$

Under (9), the objective is strictly concave and the maximizer $x^*_{i,1}$ is unique.

B.5 Comparative Statics

Assume (9) holds, so $\partial^2 U_i / \partial x_{i,1}^2 < 0$ and the implicit function theorem applies.

Prediction 1: higher rank ⇒ higher adherence Holding village composition fixed, optimal adherence is decreasing in inherited distance from Brahmins:

$$\frac{\partial x^*_{i,1}}{\partial d_{i,0}} \;<\; 0.$$

Equivalently, higher-rank groups (smaller $d_{i,0}$) choose higher $x^*_{i,1}$.

Proof. Let $F(x; d_{i,0}, f_v) \equiv \frac{f_v}{(a+d_{i,0})(b+x_{B,1}-x)^2} - cx$. Then $F(x^*_{i,1}; \cdot) = 0$ by (8). We have

$$\frac{\partial F}{\partial d_{i,0}} = -\frac{f_v}{(a + d_{i,0})^2 (b + x_{B,1} - x)^2} < 0, \qquad \frac{\partial F}{\partial x} = \frac{2 f_v}{(a + d_{i,0})(b + x_{B,1} - x)^3} - c \;<\; 0$$

(the last inequality is ensured by (9)). Hence $\frac{\partial x^*_{i,1}}{\partial d_{i,0}} = -\frac{\partial F / \partial d_{i,0}}{\partial F / \partial x} < 0$. □

Prediction 2: higher Adivasi returns ⇒ lower adherence If higher Adivasi share lowers f_v (i.e., $df_v/ds_A < 0$), then optimal adherence decreases in Adivasi share:

$$\frac{\partial x^*_{i,1}}{\partial s_A} \;<\; 0.$$

Proof. By IFT, $\frac{\partial x^*_{i,1}}{\partial f_v} = -\frac{\partial F / \partial f_v}{\partial F / \partial x}$ where $\partial F / \partial f_v = \frac{1}{(a+d_{i,0})(b+x_{B,1}-x)^2} > 0$ and $\partial F / \partial x < 0$, so $\partial x^*_{i,1} / \partial f_v > 0$. If $df_v/ds_A < 0$, then $\partial x^*_{i,1}/\partial s_A = (\partial x^*_{i,1}/\partial f_v)(df_v/ds_A) < 0$. □

Prediction 3: inverted-U heterogeneity across rank The sensitivity of adherence to Adivasi share is largest for intermediate ranks. Formally, for sufficiently high-rank groups $x^*_{i,1}$ is locally pinned near the upper bound $x_{B,1}$, while for sufficiently low-rank groups $x^*_{i,1}$ is near zero. In both extremes, changes in s_A induce only small changes in $x^*_{i,1}$, whereas intermediate ranks have an interior solution and respond more.

Proof. From the IFT expression,

$$\left|\frac{\partial x^*_{i,1}}{\partial s_A}\right| = \left|\frac{\partial x^*_{i,1}}{\partial f_v}\right| \cdot \left|\frac{df_v}{ds_A}\right|, \qquad \frac{\partial x^*_{i,1}}{\partial f_v} = \frac{1}{(a + d_{i,0})(b + x_{B,1} - x^*_{i,1})^2} \cdot \frac{1}{c - \frac{2 f_v}{(a+d_{i,0})(b+x_{B,1}-x^*_{i,1})^3}}.$$

Two forces generate the inverted-U. First, for low-rank groups $d_{i,0}$ is large and $x^*_{i,1}$ is low, so the term $\frac{1}{(a+d_{i,0})(b+x_{B,1}-x^*_{i,1})^2}$ is small, implying limited responsiveness. Second, for sufficiently high-rank groups (small $d_{i,0}$), the interior solution implied by (8) may exceed the feasible upper bound $x_{B,1}$ when f_v is high (low s_A). In that region the constraint $x_{i,1} \leq x_{B,1}$ binds and $x^*_{i,1} = x_{B,1}$, so small changes in s_A have little effect. Intermediate ranks are interior (constraint does not bind) and thus respond most to shifts in f_v, delivering an inverted-U in the effect of s_A across rank. $\square$

C. Data Appendix

This data appendix describes the sample and variable definitions.

C.1 Country-level Analysis

Our country-level analysis uses data from the 2011 round of the Indian Human Development Survey. Our sample in the main analysis is restricted to caste households. We follow Anderson (2008) to create standardized weighted indices. We obtained clean and harmonized caste (jati) information from Cassan et al. (2022).

C.1.1 IHDS Variables

- *Work Index:* standardized index consisting of: every worked, allowed to work, and earnings in past year.
- *Ever Worked:* obtained from survey question: "Have you ever worked for pay/wages?"
- *Allowed to Worked:* obtained from survey question: "If you found a suitable job, would you be allowed to work?" This question was only asked to women who are not currently working. If women are currently working, the outcome is equal to one.
- *Earnings in Past Year:* is the sum of all annual wage/salary earnings of the individual. The outcome is top-coded at the 99th percentile.
- *Decision Restrictions Index:* standardized index consisting of: 8 indicator variables based on whether the respondent is not involved in the following decisions: what to cook, purchase of expensive items, number of children to have, what to do if she falls sick, buy land/property, wedding expense, what to do if the child is sick, and to whom the child should marry. The answer is obtained from survey question: "Please tell me who in your family decides the following things?"
- *Mobility Restrictions Index:* standardized index consisting of: 5 indicator variables based on whether the respondent cannot visit the local health center alone, cannot visit the kirana store alone, cannot travel to a friend's home, and cannot take public transport (train/bus) alone, and whether the respondent practices purdah.
- *Practice Purdah:* indicator variable obtained from survey question: "Do you practice ghungat / burkha/ purdah/ pallu?'
- *Widow Remarriage Prohibited:* indicator variable obtained from survey question: "Now, I would like to ask you some questions about marriage customs. In your community (jati) for a family like yours, is it permissible for a widow to remarry?"
- *Practice Dowry:* indicator variable that is equal to one if the response to the survey question "At the time of girl's marriage, how much money is usually spent by the girl's family?" is larger than the response to the survey question "At the time of a boy's marriage, how much money is usually spent by the boy's family?"
- *No Choice in Spouse:* indicator variable obtained from survey questions: "Who chose your husband?" If the answer does not list the respondent, the follow-up question "Did you have any say in choosing him?" was also asked. The outcome variable is equal to one if the respondent says 'no' to the follow-up question and zero if the respondent says 'yes' to the follow-up question or already lists the respondent in the initial question.

- *Intercaste Restrictions Index:* standardized index consisting of: practice untouchability and intercaste marriage prohibited.
- *Practice Untouchability:* indicator variable based on the following survey question: "In your household do some members practice untouchability". If the respondent answers 'no', the survey also asks "Would there be a problem if someone who is scheduled caste were to enter your kitchen or share utensils?" We define the outcome as one if the respondent says 'yes' to any of these questions.
- *Intercaste Marriage Prohibited:* indicator variable obtained from survey question: "Do you know anyone in your community/jati who has had an intercaste marriage?"
- *Inter-Community Conflict:* indicator variable that is equal to one if the respondent said 'lot of conflict' in response to the survey question: "In this village / urban neighbourhood, how much conflict would you say there is among communities / jatis that live here?"
- *Food Restrictions Index:* standardized index consisting of: meat taboo, alcohol taboo, and men eat first.
- *Meat Taboo:* indicator variable obtained from survey question: "Does anyone in your household eat non-vegetarian food?"
- *Alcohol Taboo:* indicator variable obtained from survey question: "Does anyone in this household drink alcohol". The outcome is equal to one if the answer is 'never' for all household members.
- *Men Eat First:* indicator variable obtained from survey question: "When your family takes the main meal, do women usually eat with the men? Do women eat first by themselves? Or do men eat first?"
- *Distance to Nearest Town:* village-level variable obtained from survey question "How far is the nearest town from here? (in km)" in the IHDS 2011 village module.
- *Distance to District HQ:* village-level variable obtained from survey question "How far is the district headquarters from here? (in km)" in the IHDS 2011 village module.
- *Number of Households:* village-level variable obtained from the 2001 census and reported in the IHDS 2005 village module.
- *Population Density:* calculated as the number of households in the village divided by total area of the village in hectares based on information in the IHDS 2005 village module.
- *Village Has Paved Road:* dummy variable obtained from survey question: "Is any part of this village accessible by road" in the IHDS 2011 village module. The outcome is equal to one if the answer is 'Yes, Pucca (paved) road'.
- *Number of Public Primary Schools:* obtained from the IHDS 2011 village module.
- *Number of Private Primary Schools:* obtained from the IHDS 2011 village module.
- *Number of Public Village Clinics (Subcenters):* obtained from the IHDS 2011 village module.
- *Number of Private Schools:* obtained from the IHDS 2011 village module.

C.1.2 1901 Census Status Ranks

For the 1901 Census of India, British administrators compiled a comprehensive purity (status) ranking of all main Hindu castes. The purity rank of each caste was based on that caste's ritual distance from Brahmins. It was based primarily on the *varna* classification, which assigns a purity rank to different occupations. The ranking was completed separately by region and grouped castes into between 3-6 purity categories. To harmonize across regions, we consolidate categories into "high," "middle," and "low" purity ranks. Adivasi, Muslims, and other religious and ethnic minorities are not included in the Hindu caste ranking.

Historians have argued that the 1901 rankings created rigid caste hierarchies, rather than simply representing hierarchies that previously existed (Dirks, 2011). At the same time, there is strong evidence that the *Brahmin* and *Kshatriya* varnas have long been considered more ritually pure than other castes and that *Dalits* ("untouchables"), who were excluded from the varna system altogether, have been considered less pure. Our high-rank caste category includes *Brahmin* and *Kshatriya* castes and our low-rank category includes mainly *Dalits*. Middle-rank are those between these two purity status extremes.

Excerpt from the 1901 Census Caste Rankings

1. Central Provinces and 2. Berār—*contd.*

HINDUS—*contd.*

CLASS II (*b*).—Higher artizans or trading castes from whom a Brāhman will take water.

Barāi	55,757
Barhāi	67,170
Sonār	124,808
Sutār	30,114
Wāni	41,110
Others	47,721
TOTAL	366,680

HINDUS—*contd.*

CLASS III (*b*).—Lower artizans from whom a Brāhman will not take water.

Bahna	21,309
Banjārā Vanjāri, and Labhāni	140,180
Bhulia	26,070
Darzi and Shimpi	46,069
Dhangar	94,467
Gadaria	33,062
Kalār	149,200
Koshti	149,072
Lohār	150,343
Teli	788,710

C.1.3 Historical Agricultural Practices among Adivasi Tribes

Adivasi tribes in central India traditionally practiced either plough- or hoe-based cultivation. We hand-code tribes according to their historical agricultural practice using a combination of ethnographic sources and regional summaries created by colonial administrators. The complete list of ethnographic and administrative sources we use to classify tribes is reproduced below, in Section C.4. Our focus for this analysis is on states in central India, which includes: Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, and Rajasthan. We classify 73 dominant tribes in these states.

C.2 RDD Analysis

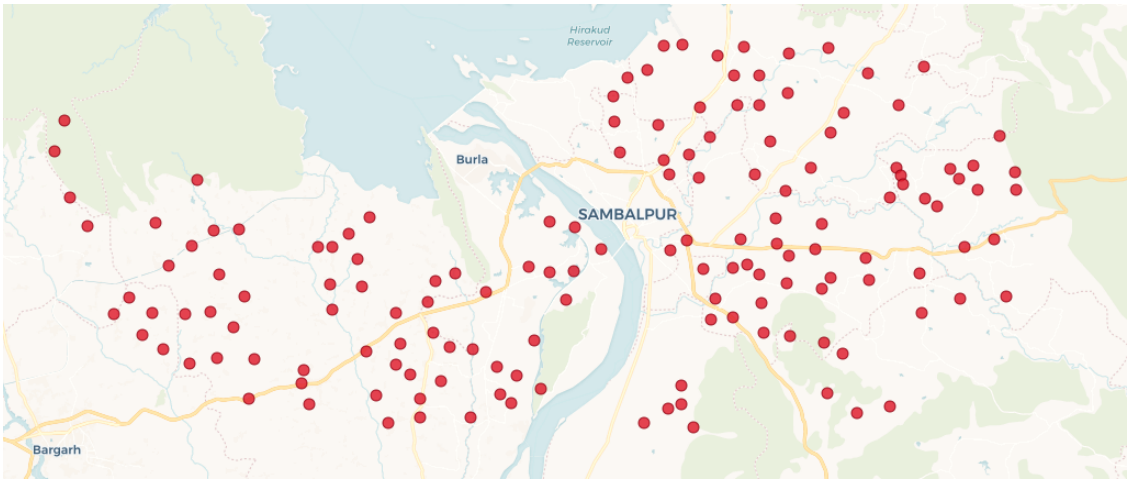
For our regression discontinuity analysis, we selected a sample of villages in the immediate vicinity of the Sambalpur railway station, to the east and west of the river. More specifically, we restrict

the study area using the latitudes of the northernmost and southernmost villages on the Sambalpur side and within 25km east or west of the river boundary.[38,39] Because the course of the Mahanadi River has changed over time, our sample additionally excludes villages whose boundaries directly intersect with or are adjacent to the river. There are 247 census villages in total within our study area, with a median (maximum) population of 978 (10,833) individuals in 2011. Table A14 shows the Adivasi share effect and impacts on both Hindu and Adivasi women's rates of work for all villages within the study sample area.

Our in-person survey was conducted in a sample of 150 villages within the study area, with population of up to 4,000 in 2011. We excluded villages for our in-person survey with an insufficient number of middle-rank Hindu caste households or with zero Adivasi households.[40] Prior to conducting the household survey, we conducted initial villages visits to map the village composition in terms of number and names of each caste and tribe present. We stratify our household sample by caste (within the set of five main middle-rank castes in our study area); enumerators conducted convenience sampling to identify survey households within caste strata. We survey only married male household heads between the ages of 30 and 65. We surveyed on average 6 Hindu men per village, for a total of 926 respondents.

In addition to our main household survey, for which we targeted only middle-rank caste households, we conducted a short elders survey with men aged 65+ from any Hindu caste. We surveyed on average 3 elders per village, using convenience sampling.[41] The purpose of the elders survey was to elicit the full status hierarchy of all castes and tribes in the village (more details below under "elder survey variables").

Map of Sample Villages



[38] We obtained shapefiles for the Mahanadi River from https://diva-gis.org/data.html and village shapefiles from the 2011 Population Census.

[39] Forest area and a reservoir create natural boundaries to the north and south on the east side of the river, which we replicate in our sampling restrictions on the west side.

[40] We targeted 6 interviews with Hindu middle-rank households per village and, since our survey included questions related to interactions between Adivasis and Hindus in the village, we excluded villages with no Adivasi households at all.

[41] We were unable to complete the elder survey in 8 of our sample villages.

C.2.1 Hindu Caste Men Survey Variables

- *Woman's Work Index:* standardized index consisting of: wife's occupation is worker and wife worked outside.
- *Occupation: Worker:* indicator variable that is equal to one if the primary occupation of the respondent's wife is not housewife.
- *Wife Worked Outside:* indicator variable that is equal to one if the respondent's wife did one of the following activities at least once in the past year: agricultural work for pay on someone else's land, self-employment, non-agricultural daily labor, or salaried work.
- *Beliefs About Woman's Work Index:* standardized index consisting of: appropriate for women to work (own belief), does not prefer housewife as daughter-in-law (own belief), appropriate for women to work (community belief), does not prefer housewife as daughter-in-law (community belief), does not respect housewife more (community belief), does not respect husband of housewife more (community belief).
- *Own Belief: Appropriate for Women to Work:* indicator variable that is equal to one if the respondent replies 'Yes it appropriate for a woman to go outside for work' to the following survey question "People have different opinions about women going out to work. Some people feel that, if she is not financially constrained, a married woman in your jati should not work outside for pay and should only look after her family, while others say that there is nothing wrong if women go out to work for pay. What is your opinion? Do you think it is appropriate for a woman to, if she wants to, go outside for work even if the household does not have a financial need?"
- *Own Belief: Does Not Prefer Housewife as Daughter-in-Law:* indicator variable that is equal to one if the respondent replied 'wife who wants to work for pay' or 'no preference' to the following vignette: "assume you had a son of marriageable age and you could choose between two wives for your son. Both wives are from your jati and have the same education and same financial status. However, only one of them wants to work outside for pay. Which wife would you prefer for your son?"
- *Community Belief: Appropriate for Women to Work:* indicator variable that is equal to one if the respondent replies 'Yes it appropriate for a woman to go outside for work' to the following survey question' to the survey question "Do other [RESPONDENT's JATI] households in your village think it is appropriate for a woman to, if she wants to, go outside for work even if the household does not have a financial need?"
- *Community Belief: Does Not Prefer Housewife as Daughter-in-Law:* indicator variable that is equal to one if the respondent replied 'wife who wants to work for pay' or 'no preference' to the following vignette: "Would other [RESPONDENT's JATI] households in your village prefer for their son a wife who prefers to go outside to work for a pay, or a wife who prefers to stay home and take care of household duties?"
- *Community Belief: Does Not Respect Housewife More:* indicator variable that is equal to one if the respondent replied 'working woman' or 'no preference' to the following vignette: "In your village, which married woman would households from your jati view with more respect: a) A woman who stays home to care for her husband/ children (housewife), b) A woman who works outside the home for pay? (working woman)".

- *Community Belief: Does Not Respect Husband of Housewife More:* indicator variable that is equal to one if the respondent replied 'man whose wife works outside the home for pay' or 'no preference' to the following vignette: "Now, I want to ask about the community's opinions about husbands whose wives work. In your village, which husband would households from your jati view with more respect: a) a husband whose wife stays home to care for her husband/ children (housewife), b) a husband whose wife works outside the home for pay? (working woman)".

- *Intercaste Integration Index:* standardized index consisting of: number of Dalit friends, coins given to Dalit respect, does not practice Dalit untouchability, and Dalit ranks $\geq$ middle caste in hierarchy. The last two variable are only available from the village elder surveys. To calculate the index, we use the village mean of the elder surveys and then calculate the index at the level of the Hindu caste men respondents.

- *Number of Dalit Friends:* number of Dalit friends listed in the friendship module (see details below).

- *Coins Given to Dalit Respect:* obtained from the survey question: "Now, I want to ask you about community respect. By respect I mean saman, or that a person has a high opinion of you. How important is it to you that members of your own jati have respect for you versus members of [DALIT JATI] ave respect for you? Please distribute the 9 beads between the two jati cards according to their importance to you. Remember that there are no right or wrong answers, we just want to know your opinions." The outcome is the number of beads given to the Dalit jati. If there were multiple Dalit jatis in the village, we randomly selected one of them.

- *No Food Restrictions:* indicator variable that is equal to one if the respondent said 'yes' to "Do you eat chicken when inside the village?" and "Does your wife eat chicken?"

- *Adivasi Integration Index:* standardized index consisting of: number of Adivasi friends, has Adivasi ritual friend, coins given to Adivasi respect, does not practice Adivasi untouchability, and Adivasi ranks $\geq$ middle caste in hierarchy. The last variable is only available from the village elder surveys. To calculate the index, we use the village mean of the elder surveys and then calculate the index at the level of the Hindu caste men respondents.

- *Number of Adivasi Friends:* number of Adivasi friends listed in the friendship module (see details below).

- *Has Adivasi Ritual Friend:* indicator variable obtained from survey question: "Do you or does any other member of your household have a ritual friendship, such as Makar, Mita or Mahaprasad, with any Adivasi person in your village?"

- *Coins Given to Adivasi Respect:* obtained from the survey question: "Now, I want to ask you about community respect. By respect I mean saman, or that a person has a high opinion of you. How important is it to you that members of your own jati have respect for you versus members of the [ADIVASI TRIBE] have respect for you? Please distribute the 9 beads between the two jati cards according to their importance to you. Remember that there are no right or wrong answers, we just want to know your opinions." We ask this question for two randomly selected Adivasi tribes in the village. The outcome is the average number of beads given to the Adivasi tribe across both questions.

- *Does Not Practice Adivasi Untouchability:* indicator variable that is equal to one if the respondent listed at least one Adivasi jati in response to the question "From which Adivasi groups (jati) would you accept water?" We only added this question later to the Hindu caste men survey. Whenever it is missing, we impute it by taking the average responses in the elderly surveys in the same village. In the elderly survey, the survey question was "Would you accept water from a person from this jati?" and was explicitly asked about each jati in the village. We create an indicator variable that is equal to one if the elderly respondent listed at least one Adivasi jati.

- *Knows Current Wage:* indicator variable that is equal to one if the respondent gave an answer to the survey question "In your village, for the current Kharif season, what is the daily wage for women for agricultural work?"

- *Know of Agr. Labor Opportunities:* indicator variable based on the survey question "In your village, for the current Kharif season, do you know of any landowners who have hired women or who will be hiring women for agricultural work?"

- *Childcare Available:* indicator variable based on the survey question "If your wife or any other woman in your household wanted to find agricultural work, would there be someone who could watch your children?"

- *Believes that Agricultural Work for Women Is Safe:* indicator variable based on the survey question "Do you believe that it is safe for women in your village to do agricultural work on someone else's field, inside your village?"

- *Any Female Earnings from Agricultural Labor:* indicator variable that is equal to one if the household had positive female earnings from agricultural labor in the last Kharif season.

- *Female Earnings from Agricultural Labor:* outcome is the sum of female earnings across the following activities in the last Kharif season: plowing, land preparation/ bondh maintenance, transplanting, weeding, harvesting, and threshing/ cleaning. If more than one female household member worked in agriculture, we ask about the primary female worker.

- *Any Male Earnings from Agricultural Labor:* indicator variable that is equal to one if the household had positive male earnings from agricultural labor in the last Kharif season.

- *Male Earnings from Agricultural Labor:* outcome is the sum of male earnings across the following activities in the last Kharif season: plowing, land preparation/ bondh maintenance, transplanting, weeding, harvesting, and threshing/ cleaning. If more than one male household member worked in agriculture, we ask about the primary male worker.

- *Women's Daily Market Wage:* obtained from survey question "In your village, for the current Kharif season, what is the daily wage for women for agricultural work?"

- *1961 Price Received per Tambi Rice:* obtained from "Village Notes," created as part of the 1961 census and settlement operations. These village-level administrative documents were accessed and ditized from the Sambalpur District Settlement Office in Odisha.

- *2022 Price Received per Kg Rice:* obtained from the survey question "How much did you earn per paddy sold?". Responses are converted into price per kilogram of rice. When the unit of measurement is not specified, we infer the most plausible unit based on the reported value. Observations below INR 10 and above INR 20 are considered implausible and are treated as

missing. The sample is restricted to respondents who cultivated and sold any rice in the last Kharif season.

- *Total Friends:* The sum of unique friends listed under the following questions: "How many families are there in this village whose house you visit frequently or with whom you socialize frequently?", "How many families are there in this village who give you important advice, such as advice on farming, health, or financial issues?", "In your village, how many families are there who you could borrow from without interest in case of a medical emergency?", and "If you needed manpower assistance such as, for instance, if there was a wedding in your household, from how many families in this village could you ask for unpaid assistance?". All questions are asked separately for households from their own jati and from a different jati.

- *Any Socialize:* indicator variable that is equal to one if the respondent listed at least one household in response to the question "How many families are there in this village whose house you visit frequently or with whom you socialize frequently?"

- *Any Advice:* indicator variable that is equal to one if the respondent listed at least one household in response to the question "How many families are there in this village who give you important advice, such as advice on farming, health, or financial issues?"

- *Any Financial Assistance:* indicator variable that is equal to one if the respondent listed at least one household in response to the question "In your village, how many families are there who you could borrow from without interest in case of a medical emergency?"

- *Any Manpower:* indicator variable that is equal to one if the respondent listed at least one household in response to the question "If you needed manpower assistance such as, for instance, if there was a wedding in your household, from how many families in this village could you ask for unpaid assistance?"

- *Literate:* indicator variable that is equal to one if the respondent if the respondent said 'Can both read and write' in response to the question "Can you read and write in Odia?"

- *Occupation: Farmer:* indicator variable that is equal to one if the respondent said 'cultivator' or 'daily wage laborer' to the survey question "What is your primary occupation?"

- *Wife's Occupation: Farmer:* indicator variable that is equal to one if the respondent said 'cultivator' or 'daily wage laborer' to the survey question "What is your wife's primary occupation?"

- *Owns Any Land:* obtained from survey question: "Does your household own any agricultural land?"

- *Total Land:* obtained from the sum of the following survey questions: "How much irrigated land does your household own (in acres)?" and "How much unirrigated land does your household own (in acres)?"

C.2.2 Elder Survey Variables

- *Does Not Practice Dalit Untouchability:* indicator variable that is equal to one if the respondent listed all Dalit jatis in the village in response to the question "Would you accept water from a person from this jati?" This question was explicitly asked about each jati in the village. The sample is restricted to non-Dalit elders in villages with at least one Dalit jati.

- *Dalit Ranks ≥ Middle Caste in Hierarchy:* dummy variable that is equal to one if there is at least one Dalit group in the village that ranks at least as high as the lowest middle (OBC) caste group in the village.

- *Adivasi Ranks ≥ Middle Caste in Hierarchy:* dummy variable that is equal to one if there is at least one Adivasi group in the village that ranks at least as high as the lowest middle (OBC) caste group in the village.

C.2.3 Additional Variables

- *Adivasi Share:* village-level Adivasi share from the 2011 population census.

- *Adivasi Landownership Share:* village-level share of total land owned by Adivasis using data from the 2011 Socio-Economic and Caste Census.

- *Hindu Women Labor Force Participation Rate:* village-level share of female labor force participation among married Hindu women aged 18-64 years using data from the 2011 Socio-Economic and Caste Census. Work is defined based on a free-text occupation question and does not include work on own farm.

- *Adivasi Women Labor Force Participation Rate:* village-level share of female labor force participation among married Adivasi women aged 18-64 years using data from the 2011 Socio-Economic and Caste Census. Work is defined based on a free-text occupation question and does not include work on own farm.

- *Elevation:* obtained from the Hydroshed database.

- *Slope:* obtained from the Hydroshed database.

- *Log Flow:* obtained from the Hydroshed database.

- *Rice Suitability:* obtained from the Global AgroEcological Zoning (GAEZ) models under the assumption of intermediate input usage.

- *Forest Share:* village-level forest share using information on forest and total village area in the village amenities module of the 2011 population census.

- *Distance to Sambalpur City:* calculated using GPS information from the 2011 population census.

- *Distance to District HQ:* obtained from the 2011 population census.

- *Distance to Subdistrict HQ:* obtained from the 2011 population census.

- *Total Population of Village:* village-level population from the 2011 population census.

- *High-, Middle-, and Low-Rank Caste Share (Within Hindus):* High-rank castes are Brahmin and Rajput; low-rank castes are Dalits; middle-rank castes include all other castes. Information on caste shares is obtained from the 2011 Socio-Economic and Caste Census. Caste is coded based on individuals' last name and validated based on in-person survey checks.

- *Adivasi Household Share Among Landowners in 1887:* village-level variable that indicates the share of Adivasi households among all landowning households in 1887. The variable is created based on household-level land ownership records created by British land settlement officers. The records list the name and jati or tribe of the owner for each plot of land in the village. The records are handwritten and stored at the Settlement Records office in Sambalpur, Odisha. We hand-enter the records for the sample of villages in our study area which still exist and are undamaged (112 villages).
- *Adivasi Gaontia in 1887:* village-level variable that indicates the jati or tribe of the village headman in 1887, at the time of the land settlement. This variable is sourced from the same land records as described above.

C.3 Watchman Analysis

For the watchman analysis, we conduct a phone survey with 3,042 sarpanches and ward members across 1,358 villages in Sambalpur district and neighboring blocks in Bargarh and Subarnapur districts. We obtained phone numbers by visiting panchayat offices. Whenever we surveyed more than one sarpanch and ward member in a village, we take the average response across all surveys in the village.

Variables

- *Watchman Block:* indicator variable that is equal to one if the block allocated the watchman position to the jhankhar. To construct our "watchman block" indicator, we digitize and hand-code archival colonial administrative records from the Sambalpur Regional Archives Office in Odisha.
- *Village Has Adivasi Jhankhar:* indicator variable that is equal to one if the respondent said that the village has an Adivasi jhankhar.
- *Adivasi Integration Index:* standardized index consisting of: no Adivasi untouchability and eat together at weddings.
- *No Adivasi Untouchability:* indicator variable that is equal to one if the respondent listed at least one Adivasi jati in response to the question "From which Adivasi groups would any OBC or GC households accept water individually?"
- *Eat Together at Weddings:* obtained from survey question " If OBC or General Caste households attend the wedding of an Adivasi household in your village, do they eat food separately or together?"
- *Women' Work Index:* standardized index consisting of: Hindu women labor force participation and does not respect housewife more.
- *Hindu Women Labor Force Participation Rate:* village-level share of female labor force participation among married Hindu women aged 18-64 years using data from the 2011 Socio-Economic and Caste Census. Work is defined based on a free-text occupation question and does not include work on own farm.
- *Does Not Respect Housewife More:* indicator variable that is equal to one if the respondent replied 'working woman' or 'no preference' to the following vignette: "In your village, which woman would the samaj view with more respect: a) A woman who stays home to care for her husband/ children (housewife), b) A woman who works outside the home for pay? (working woman)"

- *No Food Restrictions:* indicator variable that is equal to one if the respondent listed 'OBC' and 'General' in response to the survey question "From which groups in the village do married women eat chicken?"

C.4 Sources for Adivasi Plough-Use Classification

This appendix lists the ethnographic, historical, and administrative sources used to code tribe-level historical agricultural practices among Adivasis.

Berger, P. et al. (Eds.) (2013). *The Modern Anthropology of India: Ethnography, Themes and Theory*. Taylor & Francis Group.

Bose, P. (2011). Forest Tenure Reform: Exclusion of Tribal Women's Rights in Semi-arid Rajasthan, India. *International Forestry Review 13*(2), 220–232.

Burman, B. K. R. and P. S. Sharma (1970). Tribal Agriculture in India. *Indian Journal of Agricultural Economics 25*(3), 1–13.

Central Provinces Administration (1913). Final settlement report of the phuljhar zamindari of the raipur district.

Central Provinces (India) (1902). *Report on the Land Revenue Settlement of the Saugor District in the Central Provinces*. Nagpur: Secretariat Press. Settlement effected during the years 1887–1897.

Central Provinces (India) (1903). *Report on the Land Revenue Settlement of the Drug Tahsil in the Raipur District of the Central Provinces*. Nagpur: Secretariat Press. Settlement effected during the years 1896 to 1902.

Central Provinces (India) (1911). *Final Report on the Land Revenue Settlements of the Chanda District in the Central Provinces*. Settlement effected during the years 1897–1906.

Central Provinces (India) (1913). *Report on the Land Revenue Settlement of the Jubbulpore District*. Nagpur: Government Press.

Central Provinces (India) (1919). *Report on the Land Revenue Settlement of the Nagpur District in the Central Provinces*. Nagpur: Government Press. Settlement effected during the years 1912–1917.

Chaudhuri, B. B. (2008). *Peasant History of Late Pre-colonial and Colonial India*. New Delhi: Pearson Longman. Also issued as part of the History of Indian Science, Philosophy and Culture project.

Das, N. K. (Ed.) (2012). *Odisha, Part 1 and 2*, Volume 35 of *People of India (State Series)*. Calcutta: Seagull Books for Anthropological Survey of India. Gen. editor: K. S. Singh.

Ghurye, G. S. (1963). *The Mahadev Kolis*. Bombay: Popular Prakashan.

Gordon, E. (1922). *Final Report on the Land Revenue Settlement of the Bhandara District in the Central Provinces Effected During the Years 1916–1921*. Nagpur: Government Press.

Jaiswal, A. (2013). Health and nutritional status of a primitive tribe of madhya pradesh: Bhumia. *Global Journal of Human Social Science: History, Archaeology & Anthropology 13*(1), 14–19.

Kingwell-Banham, E. and D. Q. Fuller (2012). Shifting cultivators in south asia: Expansion, marginalisation and specialisation over the long term. *Quaternary International 249*, 84–95.

Mathur, N. (Ed.) (2001). *Santhal Worldview*. New Delhi: Indira Gandhi National Centre for the Arts and Concept Publishing Company.

McEldowney, P. (1980). *Colonial Administration and Social Developments in Middle India: The Central Provinces, 1861–1921*. Ph. D. thesis.

Munshi, I. (2001). Women and Forest: A Study of the Warlis of Western India. *Gender, Technology and Development 5*(2), 177–198.

Nathan, D. (Ed.) (1997a). *From Tribe to Caste*. Shimla: Indian Institute of Advanced Study.

Nathan, D. (1997b). Gender transformations in tribes. In D. Nathan (Ed.), *From Tribe to Caste*, pp. 247–286. Shimla: Indian Institute of Advanced Study.

National Commission for Scheduled Tribes (2013). Report on inclusion of 'kisan' community as synonym of nagesia/nagasia in the list of scheduled tribes of chhattisgarh. Circular to Ministry of Tribal Affairs.

Ota, A. B., S. C. Mohanty, and B. K. Paikaray (Eds.) (2015). *Malhar*. Bhubaneswar, Odisha: Scheduled Castes & Scheduled Tribes Research and Training Institute (SCSTRTI). Handbook. Record ID SCST/2015/0048. ISBN 978-93-80705-39-2.

Pati, B. (1999). Environment and social history: Kalahandi, 1800–1950. *Environment and History 5*(3), 345–359.

Pfeffer, G. (2014). Ethnographies of States and Tribes in Highland Odisha. *Asian Ethnology 73*(1–2), 259–279.

Ramsay, W. (1867). *Report on the Land Revenue Settlement of the Baitool District, Nerbudda Division, Central Provinces*. Bombay: Education Society's Press, Byculla.

Reichel, E. (2020). *The Ho: Living in a World of Plenty: Of Social Cohesion and Ritual Friendship on the Chota Nagpur Plateau, India*. Berlin: De Gruyter.

Roy, S. (2018). Livelihood resilience of the indigenous munda community in the bangladesh sundarbans forest. In W. Leal Filho (Ed.), *Handbook of Climate Change Resilience*. Springer Nature Switzerland AG.

Russell, A. M. (1867). *Report on the Land Revenue Settlement of the Dumoh District, Jubbulpore Division, Central Provinces*. Calcutta: Office of Superintendent of Government Printing. Selections from the Records of the Government of India, Foreign Department, No. LV; settlement effected in 1866.

Russell, R. V. and Hiralal (1916). *The Tribes and Castes of the Central Provinces of India: Volumes I-IV*. London: Macmillan and Co. 4 volumes.

Saldanha, I. M. (1986). Tribal Women in the Warli Revolt: 1945–47: 'Class' and 'Gender' in the Left Perspective. *Economic and Political Weekly 21*(17), WS41–WS52.

Save, K. J. (1945). *The Warlis*. Bombay: Padma Publications Ltd. With a foreword by B. G. Kher.

Scheduled Castes and Scheduled Tribes Research and Training Institute (SCSTRTI) (2015). *Binjhal*. Bhubaneswar, Odisha: Scheduled Castes and Scheduled Tribes Research and Training Institute (SCSTRTI).

Singh, K. S. (1978). Colonial Transformation of Tribal Society in Middle India. *Economic and Political Weekly 13*(30), 1221–1232.

Singh, K. S. (1992). *People of India: Andhra Pradesh*, Volume 13 of *People of India (State Series)*. Calcutta: Anthropological Survey of India.

Singh, K. S. and B. V. Bhanu (Eds.) (2004). *People of India: Maharashtra*, Volume 30 of *People of India (State Series)*. Mumbai: Popular Prakashan. Prepared for the Anthropological Survey of India.

Singh, N. (2016). *An Anthropological Study of Meena Tribe of Rajasthan*. Ph. D. thesis, University of Allahabad. PhD thesis (Anthropology). Cataloged by INFLIBNET Shodhganga.

Skoda, U. and T. Otten (2013). Odisha: Rajas and prajas in a multi-segmented society. In P. Berger et al. (Eds.), *The Modern Anthropology of India: Ethnography, Themes and Theory*. Taylor & Francis Group.

Thomson, W. B. (1867). *Report on the Land Revenue Settlement of the Seonee District of the Central Provinces*. Bombay: Education Society's Press, Byculla.

Thurston, E. and K. Rangachari (1909). *Castes and Tribes of Southern India*, Volume 4. Madras: Government Press.

UNESCO Regional Office for Education in Asia and the Pacific (1983). *Swidden Cultivation in Asia, Volume One: Content Analysis of the Existing Literature: A Stocktaking Exercise*. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.

Unnithan, M. (1991). Caste, 'Tribe' and Gender in South Rajasthan. *The Cambridge Journal of Anthropology 15*(1), 27–45.

Vidyarthi, L. P. and V. S. Upadhyay (1980). *The Kharia, Then and Now: A Comparative Study of Hill, Dhelki, and Dudh Kharia of the Central-Eastern Region of India*. New Delhi: Concept Publishing Company.

von Fürer-Haimendorf, C. (1982). *Tribes of India: The Struggle for Survival*. Berkeley: University of California Press.

Ward, H. C. E. (1870). *Report on the Land Revenue Settlement of the Mundlah District of the Central Provinces*. Bombay: Education Society's Press, Byculla.

Xaxa, V. (2004). Women and Gender in the Study of Tribes in India. *Indian Journal of Gender Studies 11*(3), 345–367.