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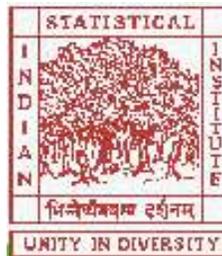
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Status, Caste, and the Time Allocation of Women in Rural India

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ABSTRACT

We argue that women may be disinclined to participate in market work in the rural areas of India because of family status concerns in a culture that stigmatizes market work by married women. We set out a theoretical framework that offers predictions regarding the effects of caste-based status concerns on the time allocation of women. We then use the all-India National Sample Survey data for the year 2004-05 and the Time Use Survey for six states of India for the year 1998-99 to empirically test these hypotheses. After controlling for a host of correlates, we find that the ratio of women's market work to men's declines as we move up the caste hierarchy. This ratio falls as family wealth rises and the decline is steeper for the higher castes. Finally, the effect on women's market work of higher education is weaker for the higher castes. These findings lend support to our theory and to the view that, through its emphasis on family status, caste plays a pivotal role in undermining the autonomy of women. Our paper has implications for how culture impinges on the rate at which poverty in developing countries can be reduced.

Key Words: Status, caste, time allocation, poverty
JEL Classification Numbers: O12, J22

1. Introduction

The labor market in rural India has many peculiarities. In this paper, we focus on one that has received little attention: the fact that the time allocation of married women to market work, especially in rural areas, is mediated by their family's desire to maintain 'status'. Working outside the home is deemed to be a low-status activity for married, rural women. This is particularly true of the upper classes, which in many instances are also the upper castes and these severely restrict the activities of women (Srinivas 1956). This may be further exacerbated by what Srinivas has dubbed 'Sanskritization', a process by which the lower castes emulate the customs of the upper castes in an attempt to acquire the social status and perceived legitimacy of the latter. These restrictions on the activities of Indian women are a throwback on patriarchal regimes of the past where contact with males outside the household was deemed a 'polluting' influence that was to be avoided where possible. At low levels of income, however, working outside the home is inevitable for married women and is seen as a necessary evil.

It is entirely conceivable that caste and class restrictions on the work and, more generally, on the physical mobility of women has to do with the concern men in patriarchal societies have for ensuring that they are the biological parents of their wives' children. In other words, the fact that paternity is always uncertain (given the absence of DNA testing until very recently in evolutionary time) may be the root cause of social restrictions on the mobility of women. This would be consistent with the interpretation of evolutionary biologists and psychologists (see, for example, Smuts 1995).

Perhaps such concerns constitute the social origin of the 'status' conferred on women who did not work outside their homes. Non-participation in market work has become a signal of greater respectability, which one might well interpret as a euphemism for greater 'sexual purity'. The notion of 'family honor' in South Asia (especially in northern India, Pakistan, and Bangladesh) is inextricably tied up with the behavior of women in the family. The prospect that the family's reputation might be tarnished with even so much as a suspicion of women's sexual infidelity is received with such horror that the males greatly circumscribe—and closely

scrutinize – the activities of the women in their families in these regions.[1]

However, this may not be a phenomenon peculiar to South Asia, alone. Humphries (1987) has suggested that the sexual segregation of the labor force in England may have had its roots in the concern of parents that their daughters may be working alongside unrelated males, thereby leading to sexual liaisons. Prior to the eighteen hundreds, women contributed to their families' subsistence by participating in work with them and under the watchful eyes of their mothers. But with the emergence of the factory system, this arrangement was no longer viable. Humphries uses data from English counties in the mid-nineteenth century, taking the proportion of illegitimate children as a measure of the failure of family monitoring of the sexual access to daughters. She provides evidence for her claim that segregation by sex of the labor force may well have arisen in England to control sexual access to women. Hakim (1994) examined the change in occupational segregation in England over the period 1891-1991 and finds considerable circumstantial evidence in favor of the Humphries thesis.

In the Indian context, however, it is not only avoidance of work requiring possible contact with non-family males that constitutes the core of 'status. It is likely that what sociologists have dubbed 'status production' is itself an activity that requires a married woman's time (Papanek 1979; Collins 1988). The poorest in India are those without assets (typically land). Their only source of earnings is the sale of their labor, and poverty forces both partners in married couples to do so. As incomes improve, however, status concerns become more salient and married women may gradually begin to withdraw from market work. At a sufficiently high level of affluence, they may cease to participate in market work altogether.

This would be true particularly in states or regions where the culture is strongly patriarchal. In India, these would be the northern states (Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh). In the less patriarchal southern states (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu), one may expect this labor supply response to be less drastic. This would be suggested by the role accorded to the status of women by Dyson and Moore (1983), who have argued that women in the northern states of India have less autonomy than their counterparts in

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[1] See, for example, Derne (1994) on the views of Hindu men on this. Clark and Drinkwater (2007) find in their recent study of labor force participation among ethnic groups in England that this participation is the least among Pakistani and Bangladeshi women. It is perhaps not an accident that Pakistan and Bangladesh (together with the northern states of India) are arguably the most patriarchal regions of south Asia.

the southern states.[2] In fact, in their analysis of child mortality in India Murthi, Guio, and Dreze (1995) take labor market participation itself as a measure of female autonomy.

The behavior of time allocation of rural women described above has its analogues in the history of developed countries as well. Using cross sectional data from over one hundred countries, Goldin (1995) examined the labor force participation of married women as a function of per capita income and found the relationship to be U-shaped. She argued that the initial decline in participation was due to the fact that there was a stigma associated with married women having to work. So they withdrew when their families became more affluent. Women resumed market work, in Goldin's reckoning, only after they became more educated and they had access to white-collar jobs. Her case study of the U.S. fits this pattern. Our emphasis on status production by married women is quite consistent with Goldin's (1995) view: in some sense, 'status' and 'stigma' may be viewed as opposite sides of the same coin.

In developing countries, it is doubtful that women who withdraw from the labor market are necessarily enjoying more leisure. We posit in our theoretical analysis that the production of status goods is time consuming. Examples of goods that fall into this category are nutritious meals, attention to children (who themselves may be pulled out of child labor activities), involvement in the building up of networks to further social advancement or to facilitate marital alliances, rituals (often religious), etc. There is only limited scope to delegate these activities to others—for the most part, they require considerable time input from the wives (Papanek 1979). When the family income rises, it is entirely conceivable that married women change the nature of their activity from market work to status-related work within the household. Rural economic development would be accompanied by a decline in the market work of these women, but this would not necessarily imply an increase in their consumption of leisure.

The rate at which rural poverty responds to economic progress in poor countries will surely depend, among other things, on changes in the time allocation of families in response to rising affluence. If greater wealth induces an elastic decline in the time allocated to the labor market, poverty may fall more slowly than otherwise. Whether the change in aggregate market work by women comes from a change in their labor force participation rate or merely from a reduction in the time they allocate to market work, the effect on poverty levels will be similar. For a poor country like India, where nearly a third of the rural population is below the poverty

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[2] But see Rahman and Rao (2004) for a difference of opinion.

line[3], knowledge of how the time allocation of women responds to affluence is important in informing the design of effective poverty-reduction strategies.

One implication of women's voluntary withdrawal from market work is that measured poverty may convey a misleading impression of the welfare of families when agricultural productivity rises. The higher wages of the husbands would induce a diversion of the activities of wives into status production and so would not show up as a commensurate increase of family's expenditure on market goods. Expenditure patterns of rural households would tilt towards goods that contain a substantial component of wives' non-market time, and consumption expenditure would underestimate the wellbeing of families as measured by the metric of their own utility function. Though measured poverty would not decline as rapidly with affluence as it otherwise might have, the households would deem themselves better off.

The production of status goods requires not merely housewives' time but also market goods, and this increases the premium on one spouse earning an income in the labor market. Districts with high agricultural productivity may thus actually promote, not undermine, the traditional division of labor wherein the husband earns in the market and the wife uses the income he earns to produce household goods. It is only when the goods that enhance status cannot be produced at home that the labor market participation of women would increase once again. This is the case not only in the developed countries, as Goldin (1995) has documented, but also the urban areas of contemporary developing countries.

In order to discern the time allocation effects of status in rural India, we set out in this paper a household model in which a couple consumes a market good (a rival good), a status good (a household public good), and leisure. We focus on the family's wealth and caste and on the wife's education as the key exogenous features of our model. Caste, obviously, is an indicator of status. Family wealth (or non-labor income), by relieving the need for market work, facilitates the production of status goods by the wife. Informed by the analytical results of our theoretical model, we posit that women's labor market work, relative to their husbands', should decline as we move up the caste hierarchy. Furthermore, we hypothesize that, in the presence of status concerns, an increase in family wealth will reduce the market work of women relative to their husbands' at a faster rate as we move up the caste hierarchy. Finally, although our model

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[3] The official HCR – the proportion of people below the poverty line – in 2004-05 was 28.3%. However, Deaton (2008) has recently argued that the figure is closer to 31%.

does not include human capital, we hypothesize that an increase in women's education may well reduce their market work in order to facilitate status production—despite the fact that their market wages increase with education.

We then test our hypotheses regarding the role of status in rural India using two different data sets (which differ in the extent of the detail in wife's time allocation across activities). These are the all-India National Sample Survey data (the 65th round, conducted in 2004-05) and the Time Use Survey covering six states (conducted in 1998-99). Our econometric estimations demonstrate that women's market work relative to men's is lower in the higher castes. In fact, the relative labor supply of women declines with their education. Furthermore, the marginal effect on women's market work of an increase in their education becomes more muted as we move up the caste hierarchy. Land ownership is seen to increase women's market work relative to men's, probably because household labor is called on to help out when more land is cultivated. However, a higher level of women's education is found to temper the positive effect of increased land ownership on their market work. Together, the evidence seems quite persuasive in suggesting the presence of status concerns in the time allocation of married women in rural India.

The focus in this paper, it must be emphasized, is exclusively on *family status* and how it impinges on the time allocation of women. To isolate this little-studied aspect of the rural households in India, we abstract from women's *individual* status within the household in terms of personal autonomy, bargaining power relative to their husbands, etc. But our findings have implications for the latter. The individual status of south Asian women is determined at least partly by their earnings (see Kantor 2003 or Anderson and Eswaran 2008 for evidence on this). There is then a clear tension between the autonomy of married women and family status—for, as our evidence suggests, the latter may call for the withdrawal of women from an activity that generates income for them. To the extent that family status is an entrenched feature of rural Indian society, greater affluence may lower the individual autonomy of women. And caste is an institution that plays a significant role as a facilitator of this retrograde development in female autonomy.

Berreman (1993) has argued that Sanskritization is a source of female oppression, for the emulation of the higher castes by the lower (that is, Sanskritization) comes at the expense of women. Our paper, however, offers only weak support for this claim. But our findings are

consistent with the recent claim of Mitra (2008), who has argued on the basis of aggregate measures of labor market participation that women from the scheduled tribes in India enjoy greater individual status relative to men than women in the rest of the population.

The rest of the paper is organized as follows. In Section 2 we spell out a simple model of time allocation within the household and generate some testable predictions. In Sections 3 and 4, we econometrically isolate evidence of status effects in the NSS and TUS data referred to above. We offer our conclusions in the final section of the paper.

2. Theoretical Framework

By way of organizing our thinking about the effect of status concerns on time allocation in rural India, we set out a simple theoretical framework. This model will also provide some guidance for the specification of the regression equations in our empirical analysis. We consider a household comprising a couple that consumes three goods: a market good, C, a status good, Z, and leisure, R ('rest'). Quantities of these goods are denoted by lower case letters. The market good, to economize on the number of endogenous variables, is taken to be jointly consumed; leisure is private; the status good is a household public good consumed by both members of the household. To abstract from household bargaining issues that are tangential to our purposes, we work with a household utility function. We denote this function by $U(c,z,r_1,r_2)$, where r_1 and r_2, respectively, denote the leisure of the wife and husband. For simplicity, we posit a Stone-Geary form for this utility:

(1) $$U(c,z,r_1,r_2) = (c-\varphi)^\alpha z^\beta (r_1 r_2)^\gamma, \quad \alpha,\beta,\gamma,\varphi > 0,$$

where the parameters α, β, and γ denote the weights the household places on the consumption good, on status, and on leisure. The parameter φ indicates that consumption of the market good takes precedence over the other two goods. The parameter β is of special interest in this paper. In the context of India, β would arguably increase as we go up the caste hierarchy. We explicitly *posit this to be the case* and we then test the theoretical implications of this premise against the empirical reality. While there are other models relevant to South Asia that capture the production of household public goods [e.g. Anderson and Eswaran (2009)], the assumption here

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is that status is a special kind of public good in that its importance increases with the position of the family in the caste hierarchy.

The household status good, Z, requires the wife's time. We simplify the production process by presuming that status is generated by the amount of market work (time) that the wife *relinquishes*. This is consistent with families in rural India insisting, as a matter of family honor, on married women not working when this can be afforded. We may either view this time diverted from market work as being Veblen's conspicuous leisure (see below) or, as argued by Papanek (1979), as married women being engaged in producing services that increase the family's social profile (such as hosting religious ceremonies).As alluded to in the Introduction, it is likely that in patriarchal societies social norms that value status in this manner may ultimately obtain as a consequence of paternity uncertainty and the fear that married women may have illicit liaisons with unrelated men. And this concern appears to increase as we move up the caste hierarchy because of the preoccupation of the higher castes with 'purity' [Dumont(1970)]. Promoting the norm that status is derived from home-based activity may be one of the means employed by society to ensure this purity.

There is a long tradition in economics of acknowledging the importance of status and conspicuous consumption of leisure and goods, ever since Thorstein Veblen wrote his *Theory of the Leisure Class* more than a century ago. More recent analyses of this phenomenon have demonstrated that such concerns are a sink for a household's resources because status-seeking essentially comprises comparisons between people (Frank 1985; Hopkins and Kornienko 2004; Eaton and Eswaran 2009). Consequently, it is a zero-sum activity at best. In the Indian context, Bloch, Rao, and Desai (2004) have empirically demonstrated that expenditures for marriage celebrations, as opposed to dowry payments, have a strong component of conspicuous consumption. While we do not model status here as a comparison between one family and others, its characteristic feature of being a sink for resources we have captured by positing that the consumption of the status good requires the wife's time. In other words, we follow Veblen's notion of conspicuous consumption of *leisure* rather than of goods.

We shall take good C as the numeraire and denote the market wages of women and men to be w_1 and w_2, respectively. Each person is endowed with one unit of time. So if the wife and husband consume r_1 and r_2 units of leisure, respectively, and the household produces z units of

'status', the time they allocate to the market are given by $l_1 \equiv 1 - r_1 - z$ and $l_2 \equiv 1 - r_2$, respectively.

The couple allocates its resources so as to maximize the household utility function. The budget constraint it faces is given by

(2) $\qquad w_1(1 - r_1 - z) + w_2(1 - r_2) + A \geq c,$

where A is the non-labor income of the household. The first and second terms on the left hand side are the wife's and husband's labor incomes, respectively. The objective of the couple may now be written down as

(3) $\qquad \max_{c,z,r_1,r_2} U(c,z,r_1,r_2) \quad s.t. \quad w_1(1 - r_1 - z) + w_2(1 - r_2) + A \geq c.$

The following proposition summarizes some of the comparative static properties of the model. With an eye on the availability of data, the details of which we provide in the empirical sections to follow, we restrict our attention here to the effects of two exogenous variables: non-labor income (A), and importance of status in preferences (β). The proof of this proposition is provided in the Appendix.

Proposition 1:

(a) An increase in the couple's non-labor income, A, diverts some of the wife's time from market work to the 'production' of status and increases the consumption of all three goods (market good, status, and leisure) for both members of the couple. The ratio of the labor supply of the wife to that of the husband declines if the wife's wages are less than that of the husband's, i.e., $w_1 \leq w_2$.

(b) An increase in the weight, β, given to status by the couple reduces the leisure consumption of both members. The husband allocates more time to the labor market and the wife allocates more time to status 'production'.

Part (a) of the above proposition is readily explained. When the couple's non-labor income rises, their demand for all goods increases because they are all normal goods. Since generating status requires the wife's time, she diverts some more time away from the labor market to this end. This and the increase in her leisure unambiguously reduce her labor supply. The husband's time allocation to the labor market also declines, but he operates only on the

labor-leisure trade-off. The wife, in contrast, can trade off between labor, leisure, and status creation. As a result, her time allocation to the labor market declines more rapidly with non-labor income than does the husband's if the wife's wage does not exceed the husband's (a strong sufficient condition). Therefore, the ratio of the wife's labor supply to that of the husband declines when $w_1 \leq w_2$.

Whether we will see the above result regarding the labor supply ratio within the household in the data will depend on the variable we use as our measure for non-labor income. In rural India, landholding may seem like a natural measure. It must be pointed out, however, that with land we would *not* expect to see a declining labor supply ratio—for a reason that is not modeled in our theoretical set up. When a household's land ownership increases, it first uses household labor before it hires workers from the labor market because family labor is easier to supervise. The reason is that household labor is likely to exhibit less shirking than hired labor. So, if we use landholding as our measure of non-labor income we would expect the ratio of wife's to husband's labor supply to be positively related to land ownership.

When the couple puts greater weight on status, as in part (b) of Proposition 1, naturally the wife will have to increase the time she 'devotes' to non-market activities. Part of this comes at the expense of her time allocation to the labor market and part at the expense of her leisure consumption. To compensate for the decline in the wife's market work, the husband works longer in the labor market than he did before; he, too, consumes less leisure. In other words, the increased desire for status comes at the expense of both members' leisure (and, it can be readily shown, also at the expense of the consumption of the market good). Naturally, the ratio of wife's to husband's labor supply will decline with increased emphasis on status.

We should note that, if status effects work instead through the desire for higher relative income or through the display of conspicuous market goods rather than through leisure, this may increase the labor supply of women. Indeed, this is precisely what Neumark and Postlewaite (1998) have argued in the context of contemporary United States. What is peculiar about status concerns in rural India (and, more generally, in south Asia) is that status is derived from women's *home-based* activity, not market activity. This has the opposite implications for women's labor market participation.

We see from part (b) of Proposition 1 that, as we go up the caste hierarchy, the ratio of wife's to husband's labor supply should decline, since higher castes give greater weight to

status. Furthermore, we might expect that the effect of caste would be more visible as non-labor income increases. This is because, in status conscious households, the wife is increasingly enabled to generate status by being relieved of the need to participate in market work when there is more non-labor income. That is, the magnitude of the decline in the ratio of wife's to husband's labor supply with wealth might be greater for the higher castes. In other words, this ratio would be negatively correlated with a variable representing the interaction between caste and non-labor income.

It is well-known that, because of the income effect, women's labor supply declines when their husband's wage increases. When women's non-participation in the labor market generates status, however, their labor supply would decline even more elastically with the husband's wage rate. This would result in rapid withdrawal of married women from the labor force with rising affluence.

We did not incorporate human capital into our model. When women's human capital increases their wage rate will increase and so, normally, will their labor supply. It is conceivable, however, that the household may deem more status is generated when more educated women stay away from market work—something that can be simulated conceptually by making the parameter β increase with the wife's education. If so, the modified model would deliver an ambiguous comparative static of wife's labor supply with respect to her human capital: her labor supply may *decline* with education. Cameron et al (2001), using data from five developing countries in Asia (that did not include India), find that labor market participation of women increases with their human capital in some but not all of the countries; they caution that the culture of the country is important. The specific cultural factor that is important in rural India is status concern. If the data reveals that the labor supply ratio is declining in the wife's education, it would be very compelling evidence indeed of status concerns. For in that case the model would imply that the wife's higher education is deemed so efficacious in generating status that, despite her higher market opportunity cost, her labor market activity is curtailed. Of course, such an outcome is likely only in households that greatly value status. This suggests the possibility that, as one goes up the caste hierarchy, the magnitude of the decline in the ratio of the wife's market time relative to her husband's may *increase* with her education—a testable conjecture. If verified, it would also provide persuasive evidence in favor of status effects.

Thus our theoretical framework suggests three testable hypotheses that speak to the importance of status in the time allocation choices of rural Indian women:

Hypothesis 1: As we go up the caste hierarchy, all else constant, the time allocated to market work should decline for women relative to that of men.

Hypothesis 2: The magnitude of the decline in the ratio of women's to men's market work as we go up the caste hierarchy may be increasing in the family's wealth, all else constant. In other words, the ratio would be negatively correlated with a variable representing the interaction between wealth and caste (defined so as to be increasing as we move up the hierarchy).

Hypothesis 3: The magnitude of the decline in the above ratio may be increasing in the education of the wife as we go up the caste hierarchy, all else constant. That is, this ratio may be negatively correlated with a variable representing wife's education interacted with caste.

The following two hypotheses speak to status effects that are unrelated to caste:

Hypothesis 4: The labor supply of women relative to that of men within a household can decline with the women's education.

Hypothesis 5: The marginal effect of wealth of the labor supply of women relative to men may become more negative as women's education increases.

We now turn to the data to examine the issue empirically.

3. Empirical Evidence Using Employment Data

The principal source of information about labor market participation of women (and men) is the nationally representative survey on employment and unemployment conducted by the National Sample Survey Organization (NSSO). The survey elicits responses about labor force participation for the reference period of a week. The NSSO surveys on employment and unemployment are conducted at 5-year intervals and we use data from the survey done in 2004-

05 for 15 major states.[4] The survey gives detailed labor market information on about 120,000 households and about 600,000 individuals. The survey adopts a two stage sampling design – first the primary sampling units (PSU) are randomly picked (villages in rural areas and blocks in the urban sector) and in the second stage households are randomly chosen in the selected PSUs.

The basic hypothesis that we seek to test is that status concerns lead to a withdrawal of women from the labor force in more affluent or more educated or higher caste rural households. In developed countries, as mentioned earlier, the greater is a woman's human capital the more likely is she to work outside the home (e.g. Neal 2004).[5]

The empirical model is of the following form:

$$(4) \quad y_{hv} = \boldsymbol{x}_{hv}\,\boldsymbol{\alpha} + \boldsymbol{z}_{hv}\,\boldsymbol{\beta} + \gamma_v + \varepsilon_{hv},$$

where h refers to the household, v refers to the village, γ is a village fixed effect and ε is a disturbance term. The left hand side variable y is the ratio of labor supplied by female members of the household to labor supplied by male members of the household. The vector $\boldsymbol{x}$ contains variables on caste, wealth, female education and interactions among them. These are the variables through which status effects are expected to operate. The vector $\boldsymbol{z}$ comprises the control variables. Table 1 contains the descriptive statistics of the model variables for the rural and urban sector.

The data allows us to calculate the number of days in the labor force (in the reference period of a week) for every individual in the survey. Since men's and women's labor activities are jointly determined in the cooperative solution to the problem of time allocation within a household, we look at the aggregate female labor supply in relation to the aggregate male labor supply. In our theoretical model, where female and male leisure have the same effect on household utility, the status effects of greater wealth cannot be inferred from female labor supply alone because the income effect would induce similar changes for both males and

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[4] The NSSO surveys are either "large" or "thin". The sample size is smaller in the "thin" surveys. It is the "large" surveys that are done every 5 years. The last "large" survey year for which unit level data is publicly available is 2004-05. The 15 major states are Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

[5] Table 3 in Neal (2004) shows that, of the White (Black) women in the age group 25-33 of the 1990 NLSY data for the U.S., the percentage who worked was 78% (71%) for those with high school or less and was 87% (88%) for those with some college.

females. Status effects, therefore, are deduced from the impact on the *ratio* of female labor supply to male labor supply.

In the definition of the dependent variable, all females above the age of 14 are included; however, unmarried women are excluded.[6] This is because the number of unmarried women in the household is endogenous to status concerns. In particular, women in some households could be married off early (and would presumably move to the husband's household). So what we might interpret as female withdrawal from labor force could be due to the absence of young unmarried women in status-conscious households.

The variables we use in the empirical model to infer status effects are caste, wealth, and education. In the employment survey, households are coded as 'scheduled tribes', 'scheduled castes', 'other backward classes' and 'others'. Scheduled tribes (ST) and scheduled castes (SC) are those social groups, in India, that have been so historically disadvantaged that they are constitutionally guaranteed affirmative action policies especially in terms of representation in Parliament, public sector jobs, and education. Other backward class (OBC) is also a constitutional recognized category of castes and communities that are deemed to be in need of affirmative action (but not at the cost of the representation of ST and SC groups). 'Others' are social groups that are not targets of affirmative action. Therefore, in terms of official policy, it is the SC group that is at the lower end of the traditional caste hierarchy, the 'other' castes at the higher end (hence we call them 'upper castes' in this paper) and the OBC in the middle. Since status concerns rise as we go up the caste hierarchy, we would expect that withdrawal of women from the labor market would be more manifest for higher castes. The STs are not so easy to slot into this hierarchy. While their access to jobs, education and other public facilities is regarded as poor, it is debatable to what extent tribes subscribe to the values of the traditional caste hierarchy. In fact, it is well known that female work participation is usually high among the ST group. In the empirical model, these caste groups are coded as dummy variables.

Land owned is the only wealth variable that is available in the employment survey. Unfortunately, as noted earlier, the effect of land on the dependent variable operates not just through status. If the household cultivates more land we would expect female labor supply to

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[6] The empirical model also incorporates the extended family household. Rural Indian households often consist of three generations and extend horizontally to include married siblings (usually male) with their spouses. The dependent variable is the ratio of labor supply of all married female members (above the age of 14) to total male labor supply in the household.

increase because household labor requires less supervision than hired labor. If the net effect of land on the left hand side variable is negative, then we can infer that status concerns are at work. A positive net effect, however, is inconclusive.

The third status variable in the empirical model is the education variable which is measured as the proportion of females in the household who are schooled at least upto the primary level. Females who are not literate or those who are literate but have not gone on to finish primary school are excluded from this measure. Education would normally increase labor supply as it raises the opportunity cost of non-market activities. However, as discussed in the theoretical section, education may have a negative effect on female labor supply if female education increases status. Like in the case of land, a negative coefficient in the regression would be very strong evidence of status concerns.

The model also includes the status variables interacted with each other. The idea is to see whether status effects are reinforced by the interaction of these variables. If they reinforce each other, then the status effect of land (say) is even greater in an upper caste household relative to an OBC household. A similar argument applies to the other interaction variables. For ease of discussion, in Table 2 we present the expected effect on the dependent variable of wealth, caste, education and their interactions operating through status concerns. The different social groups are coded as dummy variables, and the SC group is the base category.

The predicted signs of the interaction variables involving caste could, however, be reversed if there is a Sanskritization effect. The idea behind the concept of Sanskritization is that households from lower castes that aspire to higher levels of social status emulate the status-driven behavior of the upper castes. This would mean that the negative effect of wealth (or female education) on the ratio of female-to-male labor supply would be greater in the lower castes than in the upper castes.[7] For such a result to obtain, we must have $\alpha_5 < \alpha_6 < 0$ and $\alpha_7 < \alpha_8 < 0$.

The control variables in the model are religion dummies, the number of children below the age of 5, the number of children in the ages 6-14, and the proportion of males in the household with at least a primary school education. As educated men tend to work more, the male education variable would be expected to have a negative effect on the ratio of women's to men's labor supply.

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[7] We are grateful to the Associate Editor for pointing this out.

The female-to-male wage ratio should also be included as a control. However, there is the standard problem that there is no wage data for females who are out of the labor force. In addition, there is the problem that a sizeable portion of the labor force in India is self-employed and therefore there is no wage data for this group as well.[8] If wages are to be imputed for these groups from a wage regression of people in wage employment, then such imputation would have to correct for the self-selection into various groups. Because of the disparate nature of the groups that do not have wage data, it is not straightforward to apply a Heckman type correction. The lack of a wage variable is substantially ameliorated by village level fixed effects. The implicit assumption is that controlling for wealth (land), human capital and caste, the labor market is governed by village level variables that are captured by the fixed effects. The fixed effects specification means that within village variation in land, human capital and caste is used to estimate their status impacts.

We estimate equation (4) for the rural and urban sector separately as status driven behavior is likely to differ in the two settings. The urban sector data lacks a wealth variable and this is a serious limitation. To compensate, we include controls relating to the occupation of the head of the household. We code this variable into three broad occupation types: white collar jobs (professionals, managers, clerks), service sector jobs (including trade, finance, hotels and personal services), and blue collar jobs (manual labor in agriculture and industry).

Tables 3 and 4 report the results for the rural and urban sector, respectively. For the rural sector, we report two regressions. The observations for ST (scheduled tribes) are excluded in the first regression but are included in the second one. Looking at the first regression of Table 3, the caste, female education and the interaction term involving female education and land are negative, significant, and have signs consistent with status effects. Land is not significant possibly because its status effects are pitted against the need to employ more household labor. The interaction terms involving caste are also insignificant. This could happen if caste and the other status variables reinforce each other for some households while other households augment status by Sanskritization behavior.

In the second regression (which includes ST) of Table 3, the coefficient of the ST dummy is positive and significant. This supports the position that the behavior of ST group is

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[8] In our sample, 59.4 % of the labor force is self-employed. There is not much difference among males and females: 57.9 % of males are self-employed, compared to 62.8% of females.

not driven by the same set of social status norms as the caste groups in the traditional hierarchy. The other results are comparable to the estimates in the first regression.

The two regressions in Table 4 for the urban sector differ on the inclusion of some interaction variables. In the first regression, caste effects are of expected sign and even stronger than in the rural regression. It is possible that, if caste is correlated with wealth, these results are picking up a wealth effect (which, however, would signify status concerns). The remarkable finding is the significance of the occupation categories. In the results, the white collar group is the base (left out) category. Relative to this category, the dependent variable is higher for service sector occupations and even higher for blue collar households. The difference though not significant for the service sector category, is highly significant for the manual labor households. In so far as occupation is correlated with caste (presumably the lower castes with blue collar and the upper castes with white collar jobs), these results are consistent with caste-driven status effects.

In the second regression of Table 4, the female education variable is also interacted with occupation categories. The female education variable is itself not significant but its interactions with occupation categories are significant and negative. This suggests that within the white collar households (the base category that is omitted in the regression), female education does not have a negative effect on the ratio of female to male labor supply. The negative effect of this variable in the first regression is therefore driven by the other occupation categories of households—especially the service sector households. This is consistent with a Sanskritization story.

4. Evidence from a Time Use Survey

In 1998-99, the National Sample Survey Organization also conducted a time use survey of individuals above the age of five in six states of India.[9] Although the survey covered households in the urban and rural sectors, we could access only the data for the rural sector where 12,571 households were surveyed. The time use survey data has a detailed breakdown of the activities of men and women during the day and the time spent in each of them. A reference period of one week was adopted for collecting the data. The data is coded for 'normal' days,

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[9] The six states are: Haryana, Madhya Pradesh, Meghalaya, Gujarat, Orissa and Tamil Nadu.

'weekly variant' days (which presumably are the days of the week when some special activities like visits to the temple are performed), and 'abnormal' days. Data for each day type was collected with a recall lapse of one day. In this paper, we do not use the data for abnormal days.

By looking at the time allocated to economic activities, we can once again compute the ratio of female to male labor supply within the household and do the same sort of tests as in the employment data. Besides corroboration, the time-use survey also allows us to directly study the time allocation of status activities and how they are determined by the markers of status (caste, wealth and education). We, therefore, estimate equation (4) for two additional dependent variables – the proportion of women's time spent on status activities and the proportion of women's time spent on leisure. All time spent in social and cultural activities are considered as status time.[10] This definition does not include time spent in household chores, learning, care of others, and personal care (including sleeping and doing nothing). Leisure is defined as status time plus the time spent in personal care and maintenance.

Compared to the employment survey, the time use survey has a few additional variables that affect status. Besides land owned, the time use survey also has information on the type of home occupied by the respondent. The household can be coded as either living in a house made of permanent material (e.g., bricks, cement) or otherwise (i.e., using provisional or semi-permanent materials). This dummy variable can therefore be regarded as a control for wealth (not including land). Unlike land (whose effect on the dependent variable is theoretically ambiguous), the housing dummy variable has a clear effect. If status aspiration is correlated with wealth, the coefficient of the housing dummy variable should be negative.

The caste (social group) coding in the time use data, unfortunately, is cruder than even what is available in the employment data. There are only three categories of social group, namely, ST, SC, and Others. Given our earlier findings, we do not expect the social norms of STs to conform to the ideas of status embedded in the caste orthodoxy. Therefore, in the analysis below, we drop the observations on STs and from the state of Meghalaya, which has a high tribal population.

In Table 5 we present the summary statistics and in Table 6 we report the results of estimating equation (4), for the time use data. Like the analysis of the employment data, the

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[10] The social and cultural activities include participation in social events, community functions, religious activities, socializing, arts & music, games & sports, reading and watching television.

dependent variables consider only individuals above the age of 14 and it excludes unmarried women.   The education variables are defined in the same manner as in the employment data.

Columns 2 and 3, in Table 6, report the regression results for the dependent variable considered in the employment data – the ratio of women's time at work relative to men's time at work. Caste and female education have significant and negative effects. Notice, however, the positive coefficient on the interaction of female education and other castes. The size of this coefficient implies that the withdrawal of educated females from the work force is sizeable only for the SC group. Land and the dummy for housing type have signs consistent with status effects but neither one of them has an impact significantly different from zero.

The value of the time use data is that it allows us to directly examine the determinants of the time allocation to status activities of married women. For every household, we define the dependent variable as the proportion of time spent by females in status activities. The results are in last four columns of Table 6. Notice that both the wealth variables (land and housing type), the dummy for other castes, and the female and male education variables have *positive* and significant impacts on the dependent variable – mirroring the effects of these variables on labor supply. The only insignificant variable is the number of children.

To check to what extent these results may be driven by the income effect on leisure (of which status is a subset), we report an additional regression. In columns 6 and 7 of Table 6, the dependent variable is the proportion of time spent in all leisure activities. In this regression, the education variables (female and male) are no longer significant and as one would expect the number of children has a negative and significant impact on the amount of leisure consumed.

5. Conclusions

In this paper, we have sought to provide a theory for how the desire for family status translates into the time allocation of women in rural India. We have constructed a theory that identifies the effects of caste, wealth, and the human capital of women on the market work of women relative to men. Our theory predicts significant time allocation effects: affluence and education all induce women to curtail market work and reallocate their time towards status production. Caste is seen to play an important role in facilitating this. Evidence from two datasets supports our hypotheses.

We end by reiterating the point that family status and the individual status of women may be working in opposition in rural India. Family status concerns, by reducing market participation for married women, would impede their acquisition of individual autonomy. Agricultural productivity improvements in rural India may well be contributing to a decline in the autonomy of married women, despite the fact that these improvements would increase the remuneration of working women. The perceived collective gain to households by way of family status may come at the expense of women's individual status, especially among the higher castes. That greater affluence might be accompanied by a retreat into a more traditional division of labor within the household is a paradox of rural India that seems to emerge as a consequence of a peculiar cultural preoccupation: an obsession with the 'purity' of married women. A similar process may be at work for women in the lower castes if they mimic upper caste behavior, as is claimed by some researchers (e.g. Berreman 1993). Our paper, however, finds only weak evidence of Sanskritization.

Table 1: Descriptive Statistics of Employment Data

	Rural Sector		Urban Sector	
	Mean	Std. Dev.	Mean	Std. Dev.
Ratio of women's labor supply to men's labor supply	0.386	0.543	0.228	0.466
ST (proportion)	0.101	0.301	0.000	0.000
SC (proportion)	0.191	0.393	0.163	0.369
OBC (proportion)	0.422	0.494	0.408	0.491
Other castes (proportion)	0.287	0.452	0.429	0.495
Proportion of females with at least primary education	0.354	0.414	0.599	0.438
Land (hectares)	1.028	2.286		
Proportion of males with at least primary education	0.586	0.433	0.753	0.391
# of children below the age of 5	0.740	0.991	0.595	0.874
# of children between 6 and 14	1.136	1.264	1.010	1.161
Proportion of white collar households			0.273	0.446
Proportion of service sector households			0.280	0.449
Proportion of manual labor households			0.447	0.497

Table 2: Status Effects on the Ratio of Female to Male Labor Supply of a Household

Variables	Coefficients	Predicted Status effect
Wealth (land)	α_1	$\alpha_1 < 0$
OBC	α_2	$\alpha_2 < 0, \alpha_3 < 0, |\alpha_3| > |\alpha_2|$
Upper caste	α_3	
Female Education: Proportion of females with at least primary education	α_4	$\alpha_4 < 0$
Land × OBC	α_5	$\alpha_6 < \alpha_5 < 0$
Land × Upper caste	α_6	
Female Education × OBC	α_7	$\alpha_8 < \alpha_7 < 0$
Female education × upper caste	α_8	
Female education × land	α_9	$\alpha_9 < 0$

Dependent Variable: Ratio of Female to Male Labor Supply

	Excludes ST observations			Includes ST observations		
	Coefficient		Std. Err.	Coefficient		Std. Err.
ST				0.0685	***	0.0139
OBC	-0.0068		0.0087	-0.0084		0.0086
Other castes	-0.0404	***	0.0107	-0.0387	***	0.0105
Proportion of females with at least primary education	-0.0324	**	0.0143	-0.0304	**	0.0141
Land	0.0016		0.0049	0.0016		0.0048
ST × Land				0.0062		0.0063
OBC × Land	0.0064		0.0050	0.0065		0.0049
Other Castes × Land	0.0001		0.0050	0.0004		0.0049
ST × Proportion of females with at least primary education				0.0021		0.0252
OBC × Proportion of females with at least primary education	-0.0208		0.0163	-0.0223		0.0161
Other Castes × Proportion of females with at least primary education	-0.0105		0.0173	-0.0141		0.0171
Land × Proportion of females with at least primary education	-8.39E-06	***	2.89E-06	-8.68E-06	***	2.77E-06
Proportion of males with at least primary education	-0.0833	***	0.0064	-0.0825	***	0.0060
# of children below the age of 5	0.0010		0.0024	0.0013		0.0023
# of children between 6 and 14	0.0262	***	0.0019	0.0263	***	0.0018
Constant	0.4311	***	0.0078	0.4345	***	0.0076
Religion dummies		Yes			Yes	
Village Fixed Effects		Yes			Yes	
Observations		49086			54598	
R^2(within group)		0.023			0.021	

*** significant at 1%
** significant at 5%

Table 4: Results from Employment Data – Urban Sector

Dependent Variable: Ratio of Female to Male Labor Supply

	Coefficient		Std. Err.	Coefficient		Std. Err.
OBC	-0.0451	***	0.0142	-0.0452	***	0.0142
Other castes	-0.0827	***	0.0160	-0.0803	***	0.0161
Proportion of females with at least primary education	-0.0354	*	0.0184	0.0213		0.0248
Service sector dummy	0.0132		0.0087	0.0860	***	0.0183
Manual labor dummy	0.0205	**	0.0084	0.0628	***	0.0170
OBC × Proportion of females with at least primary education	-0.0163		0.0209	-0.0164		0.0209
Other Castes × Proportion of females with at least primary education	0.0033		0.02177	0.0003		0.0219
Servicesector dummy × Proportion of females with at least primary education				-0.1022	***	0.0220
Manual labor dummy × Proportion of females with at least primary education				-0.0494	**	0.0204
Proportion of males with at least primary education	-0.1031	***	0.0095	-0.1006	***	0.0096
# of children below the age of 5	-0.0140	***	0.0036	-0.0140	***	0.0036
# of children between 6 and 14	0.0225	***	0.0027	0.0225	***	0.0027
Constant	0.3676	***	0.0149	0.3200	***	0.0203
Religion dummies		Yes			Yes	
Urban Block Fixed Effects		Yes			Yes	
Observations		24662			24662	
R^2(within group)		0.026			0.027	

   ***   significant at 1%
   **   significant at 5%
   *   significant at 10%

Table 5: Descriptive Statistics of Time Use Data

	Rural Sector	
	Mean	Std. Dev.
Ratio of women's labor supply to men's labor supply	0.543	1.448
Proportion of women's time in status activities	0.021	0.040
Proportion of women's time in leisure activities	0.179	0.087
SC (proportion)	0.234	0.424
Other castes (proportion)	0.766	0.424
Proportion of females with at least primary education	0.338	0.443
Proportion of males with at least primary education	0.618	0.464
Land (hectares)	0.312	0.637
House of permanent materials	0.278	0.448

Table 6: Results from Time Use Data

Dependent Variable	Ratio of women's work time to men's work time			Proportion of women's time spent in status activities			Proportion of women's time spent in status activities + personal care and maintenance		
	Coefficient		Std. Err.	Coefficient		Std. Err.	Coefficient		Std. Err.
Castes other than SC	-0.2429	***	0.0762	0.0066	***	0.0014	0.0149	***	0.0031
Land	-0.0634		0.1951	0.0044	***	0.0008	0.0138	***	0.0017
Proportion of females with at least primary education	-0.2550	**	0.1234	0.0075	***	0.0013	-0.0008		0.0028
Other castes × Land	0.0573		0.1949						
Other castes × Proportion of females with at least primary education	0.2389	*	0.1331						
Land × Proportion of females with at least primary education	0.0000		0.0001						
Proportion of males with at least primary education	-0.0722		0.0542	0.0028	**	0.0012	0.0037		0.0026
House of permanent materials	-0.0833		0.0669	0.0130	***	0.0014	0.0159	***	0.0032
Children below the age of 15	-0.0156		0.0148	-0.0003		0.0003	-0.0054	***	0.0007
Constant	0.8515	***	0.0700	0.0067	***	0.0014	0.1665	***	0.0031
Religion dummies	Yes			Yes			Yes		
Village Fixed Effects	Yes			Yes			Yes		
Observations	5855			5984			5984		
R^2(within group)	0.005			0.061			0.044		

*** significant at 1%
** significant at 5%
* significant at 10%

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Proof of Proposition 1:

Substituting for c from the budget constraint, the first order conditions associated with the maximization in (3) may be written:

(A.1a) r_1: $\qquad \dfrac{\gamma}{r_1} = \dfrac{\alpha w_1}{B - w_1(r_1 + z) - w_2 r_2}$

(A.1b) r_2: $\qquad \dfrac{\gamma}{r_2} = \dfrac{\alpha w_2}{B - w_1(r_1 + z) - w_2 r_2}$

(A.1c)z: $\qquad \dfrac{\beta}{z} = \dfrac{\alpha w_1}{B - w_1(r_1 + z) - w_2 r_2}$,

where $B \equiv A + w_1 + w_2 - \varphi$, which we assume to be positive to ensure a nontrivial scenario. Solving these we obtain the optimal leisure choices as

(A.2a) $\qquad\qquad\qquad r_1^* = \dfrac{\gamma B}{(\alpha + \beta + 2\gamma) w_1}; \; r_2^* = \dfrac{\gamma B}{(\alpha + \beta + 2\gamma) w_2}$.

The optimal consumptions of the market good and status are

(A.2c) $\qquad\qquad\qquad c^* = \dfrac{\alpha B}{(\alpha + \beta + 2\gamma)} + \varphi; \quad z^* = \dfrac{\beta B}{(\alpha + \beta + 2\gamma) w_1}$,

and the labor supplies are

(A.2d) $\qquad\qquad\qquad l_1^* = 1 - \dfrac{(\beta + \gamma) B}{(\alpha + \beta + 2\gamma) w_1}; \quad l_2^* = 1 - \dfrac{\gamma B}{(\alpha + \beta + 2\gamma) w_2}$.

(a) Taking the derivatives of the expressions above, it follows that

(A.3) $\qquad\qquad\qquad \dfrac{dc^*}{dA} > 0; \; \dfrac{dz^*}{dA} > 0; \; \dfrac{dr_1^*}{dA} > 0; \; and \; \dfrac{dr_2^*}{dA} > 0.$

Furthermore, differentiating the ratio of l_1^* and l_2^* with respect to A, we obtain

(A.4) $\qquad \dfrac{d}{dA}\left(\dfrac{l_1^*}{l_2^*}\right) = -\dfrac{(\alpha + \beta + 2\gamma) w_2 [(\beta + \gamma) w_2 - \gamma w_1]}{w_1 [w_2(\alpha + \beta + \gamma) - \gamma(A + w_1 - \varphi)]^2} < 0 \; when \; w_1 \leq w_2.$

(b) Differentiating the expressions in (A.2a) with respect to β, it is immediate that

(A.5) $\quad \dfrac{dr_1^*}{d\beta} < 0; \quad \dfrac{dr_2^*}{d\beta} < 0.$

Differentiating the expressions in (A.2d), we obtain

(A.6) $\quad \dfrac{dl_1^*}{d\beta} = -\dfrac{(\alpha + \gamma)(A + w_1 + w_2 - \varphi)}{w_1(\alpha + \beta + 2\gamma)^2} < 0; \quad \dfrac{dl_2^*}{d\beta} = \dfrac{\gamma(A + w_1 + w_2 - \varphi)}{w_2(\alpha + \beta + 2\gamma)^2} > 0.$