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Social Norms and Women's Employment in India: A District Level Analysis

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Abstract

Reducing gender disparities in workforce participation is an important policy goal in several developing countries. India, in particular, has historically had low levels of women's workforce participation as compared to men and as compared to peer economies. Prior research has identified both supply and demand-side explanations for low levels of women's participation in paid work. On the supply side, social norms constraining women's mobility and autonomy are commonly invoked as one explanation. We test the relevance of such norms in explaining heterogeneity in women's employment using district-level data from the National Family Health Survey (NFHS) 2015-16 and the Sixth Economic Census (2013). Norms indices are constructed using Principal Components Analysis for 640 districts of India. The findings indicate that less restrictive norms related to decision-making, mobility, and asset ownership are positively correlated with higher levels of women's employment.

Keywords: social norms, women's employment, NFHS, Economic Census.

JEL Classification: J16 J21 J24 J71 O15 C38

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1 Introduction

Understanding the relationship between social gender norms and women’s labour force participation is essential for devising effective policies to promote gender equality in the labour market. In India, despite relatively rapid economic growth and moderate structural transformation, women’s labour force participation, until recently, displayed either a declining (rural) or stagnant (urban) trend. The situation has improved in the past few years, but female labour force participation rate (FLFPR) remains at a lower level than in peer economies (Basole et al., 2023). A large literature has emerged over the past decade trying to explain these trends. From a supply-side perspective the focus has been on rising household incomes that have allowed women to withdraw from poorly paid informal labor (to explain the decline in FLFPR) as well as entrenched gender norms that limit women’s economic engagement (to explain persistently low levels). From the demand side, there is some evidence that increased mechanisation in agriculture as well as persistently weak job growth have played a role in limiting opportunities for women (Afridi et al., 2023; Costagliola, 2021; Desai & Joshi, 2019; Deshpande & Kabeer, 2024; Jayachandran, 2020; Klasen & Pieters, 2015; Lahoti & Swaminathan, 2016; Mehrotra & Parida, 2017).

While acknowledging the crucial role of labour demand in pulling women into the labour market, it is important to deepen our understanding of supply-side barriers such as norms restricting women’s mobility and decision-making. In this paper, we test the relationship between social norms and women’s employment using nationally representative district-level data. Most previous analysis has been conducted either at the country or state level or has been limited to particular geographies. We use information on women’s mobility, decision-making, and asset ownership available in the National Family Health

Survey (NFHS) to proxy gender norms. We use data from the 4th round of the NFHS (2015-16) rather than the most recent 5th round, because this survey round is close to the year of the last available Economic Census for India (2013).

The Economic Census (EC) data has two features relevant to our exercise. First, it provides us with a firm-side measure of women's employment relative to men, as opposed to the usual survey-based measures which are household-based. This allows us to directly control for the level of labour demand. Second, it provides district-level estimates that household employment surveys have not been able to provide since 2011-12. We construct a measure of female employment intensity for the proportion of women workers among all hired workers, at the district level using data from EC 2013.

Our analysis is in two parts. First, we identify clusters of similar levels of women's autonomy at the district level using quintile maps and k-means clustering. Second, we use OLS regression to show that districts with less restrictive gender norms are associated with higher proportion of female workers in total hired workers. Interestingly, the effect is observed only for relatively higher levels of autonomy (the 5th quintile) and largely driven by cross-state variation. We discuss the implications of these in the concluding section. Finally, although this study does not establish causality, it does provide a way to quantify and analyze gender norms at a granular level, which is potentially more useful for policy makers.

The rest of the paper is organized as follows. Section 2 surveys the literature on gender norms and women's employment. Section 3 describes the data and methods. In Section 4 we present and describe the results. Finally we conclude in Section 5.

2 Literature Review

There is a rapidly growing literature on gender norms that explores the importance of autonomy, bargaining power within marriage, property rights (Goldstein & Udry, 2008), technological progress in home production (Dinkelman, 2011), dowry system (Alfano, 2017; Bhalotra et al., 2018; Bloch & Rao, 2002; Sekhri & Storeygard, 2014), old-age support norms (Ebenstein & Leung, 2010), patrilineality (Anderson & Genicot, 2015; Deininger et al., 2013), child marriage and early marriage (Field & Ambrus, 2008; Roychowdhury & Dhamija, 2021), excessive importance of sons in religious rituals (Jayachandran & Pande, 2017), and the gendered division of labour (Afridi et al., 2024) in determining outcomes in health, education, and employment.

Several studies have used household level survey data to construct measures of gender norms. Acharya et al. (2010) use Nepal Demographic health survey data (NDHS) to explore how socio-demographic factors influence women’s autonomy in making decisions regarding own health care, major household purchases, purchase of daily household needs and visits to family and relatives. Rammohan and Johar (2009) investigate the determinants of married women’s autonomy in Indonesia using the Indonesian Family Life Survey 3 (IFLS3) data set. The decision-making authority in the household included own clothing, child-related and personal autonomy, physical mobility, and economic autonomy. Similarly, research on effect of British colonization on women empowerment by Nandwani and Roychowdhury (2023) also uses the questions from the NFHS to construct the indices of women’s decision-making, mobility, and ownership norms, in line with our approach.

A number of recent studies have highlighted the impact of social and cultural norms on women’s labour force participation, emphasizing the significance of addressing these

norms in creating a more inclusive and equitable labour market. According to Deshpande et al. (2019), the economic invisibility of women in India is rooted in deep-seated cultural expectations of women's roles in care and unpaid work, which systematically constrain their supply of labor to the market. Afridi et al. (2024) find that the decisions on women's labor supply are influenced both by home productivity and by the prevailing social norms, with binding gender norms setting a limit to their participation despite improvements in education and household income. These studies together underscore that apart from economic or educational barriers, social and cultural norms play a critical role in shaping women's work outcomes in India.

Gainful employment grants women financial independence and agency, enabling them to negotiate their desires within intimate relationships more effectively. However, the literature also finds a male backlash effect, wherein men perceive women's employment as a challenge to traditional male dominance and may resort to violence to maintain their authority (Ross & Wright, 1998). Exploring the male backlash hypothesis, Dhanaraj and Mahambare (2022), in their study on urban India, find that women engaged in paid work face a significantly higher risk of intimate partner violence (IPV) compared to those in domestic roles. Surprisingly, increased autonomy through employment does not substantially reduce IPV. The study also introduces the concept of a female guilt channel, where women in paid work may rationalize IPV to some extent, exacerbating their vulnerability. The existing literature thus provides a strong basis for connecting gender norms to women's employment, but has not explored this relationship at the district level for India.

3 Data and Methods

3.1 Data Sources

This study draws on two major sources of information - the National Family Health Survey (NFHS) 2015-16 and the Economic Census 2013 (EC 2013). Household data from the NFHS is combined with firm data Economic Census data, both aggregated to the district level. The NFHS is an Integrated Demographic Health Survey that provides demographic, health, and socio-economic information at the household as well as individual level. Factors like fertility, maternal and child health, family planning, nutrition, and gender stereotypes are covered in the survey.

The Economic Census provides comprehensive data on non-agricultural establishments across India, covering both organized and unorganized sectors. The census collects information on the number of enterprises, number of male and female employees, ownership structures, and industrial classifications, making it a valuable resource for analyzing labor market dynamics. We use the Economic Census to compute the share of female workers in total hired workers at the district level.

3.2 Measuring norms

The analysis focuses on three key aspects of women's autonomy: decision-making, mobility and asset ownership. Women's decision-making power is assessed based on factors like control over healthcare choices, household purchases, family visits, contraception use, and management of personal and spouse's earnings. Mobility is measured by the difficulty women face in seeking medical help or visiting healthcare facilities, traveling

alone, or going to the market. Asset ownership is examined through variables like owning a mobile phone, having a bank account, holding personal money, and possessing health insurance in one's own name.

Table 1 lists the survey questions in each of the three categories along with the rule followed for converting multiple choice variables into dummy variables. Also provided are the number of valid responses (N) for each variable, the weighted mean (Mean), standard deviation (SD). Values close to one indicate relatively more progressive norms. The bold words in the questions are used as variable names in the study.

Table 1: **Survey questions used in constructing indices for gender norms**

Domains & variables	N	Mean	SD
Decision making			
1. <i>Who usually makes decision about your healthcare? (=1 if has at least some say)</i>	86811	0.757	0.429
2. <i>Use of contraception is whose decision? (=1 if has at least some say)</i>	231546	0.999	0.035
3. <i>Who takes major household purchase decision? (=1 if has at least some say)</i>	86811	0.740	0.438
4. <i>Who makes decision about family visits? (=1 if has at least some say)</i>	86811	0.753	0.431
5. <i>Who decides how your husband's earnings will be used? (=1 if has at least some say)</i>	86173	0.713	0.452
6. <i>Who decides how wife's earnings will be used? (=1 if has at least some say)</i>	20052	0.826	0.380
Mobility			
1. <i>Are you allowed to go to the market alone? (=1 if yes)</i>	86811	0.563	0.496
2. <i>Are you allowed to go to the health facility alone? (=1 if yes)</i>	86811	0.513	0.500
3. <i>Are you allowed to go outside village alone? (=1 if yes)</i>	86811	0.495	0.500

4. Is seeking medical help a problem? (=1 if no problem)	499627	0.469	0.499
Ownership			
1. Do you own a mobile phone for your own use (=1 if yes)	86811	0.487	0.500
2. Do you have a bank/savings account for your own use? (=1 if yes)	86811	0.522	0.500
3. Do you have own money which you can alone decide how to use (=1 if yes)	86811	0.420	0.494
4. Are you covered by health insurance ? (=1 if yes)	499627	0.181	0.385

Source: NFHS 2015-16

3.3 Principal Component Analysis and k means clustering

The first step in constructing the norms index involves calculating district-level averages for each variable in Table 1, resulting in 640 averages. These averages are the proportion of individuals with progressive norms. Pairwise correlations of the variables within each domain show positive and statistically significant relationships, supporting the selection of variables. The correlation matrices are provided in Appendix A1.

Principal Component Analysis (PCA) is a widely used technique for dimensionality reduction and summarizing multivariate data. The dataset consists of $n = 640$ observations (district-level averages) on p variables, with $n \gg p$. Specifically for construction of decision index we have chosen $p = 6$ while for both mobility and ownership index we have taken $p = 4$. PCA constructs linear combinations of the original variables, where the coefficients (loadings) indicate the relative contribution or weight of each variable to a component, unlike a simple mean, where all variables are weighted equally. The aim is to extract the main patterns of variation among districts and present them using reduced number of components for easier interpretation.

The six variables that capture the decision making power of women can be well summarized by the first component of PCA that explains 69.31% of the total variability in the data.¹ The mobility aspect of women is captured by the first component of PCA that explains 75.09% of the total variability in the data.² Finally, the ownership of assets can be explained by the first component of PCA that captures 61.64% of the total variability in the data.³ Since these indices are not bounded, we subtract the minimum from each district-level index value and divide it by the range (i.e. maximum-minimum) to get a bounded index. Closer the index value is to 1, more progressive is the district with regard to the specific dimension of autonomy. Based on the index value we rank the districts giving rank 1 to the district with highest index value. In this way three separate sets of ranks are generated (corresponding to three different dimensions) for each of the districts. Pairwise rank correlation coefficients (due to Kendall) of these indices are provided in Table 2. The pairwise correlations indicate that the rankings across any two dimensions of autonomy are in agreement and statistically significant at 10% level.

¹The index is represented by the equation,

$$\begin{aligned} \text{Decision making index} = & 0.4807 \times \text{healthcare} + 0.0362 \times \text{contraception} + \\ & 0.4814 \times \text{purchase} + 0.4818 \times \text{family visits} + \\ & 0.4763 \times \text{husband's earnings} + 0.2773 \times \text{wife's earnings}. \end{aligned} \quad (1)$$

²The index value is calculated based on the equation,

$$\begin{aligned} \text{Mobility index} = & 0.5658 \times \text{market} + 0.5686 \times \text{health facility} + \\ & 0.5605 \times \text{outside village} + 0.2061 \times \text{medical help}. \end{aligned} \quad (2)$$

³The index is given by the equation,

$$\begin{aligned} \text{Ownership index} = & 0.5796 \times \text{mobile} + 0.5954 \times \text{account} + \\ & 0.5458 \times \text{own money} + 0.1084 \times \text{health insurance}. \end{aligned} \quad (3)$$

Table 2: Pairwise Rank Correlation Coefficient

	Decision making	Mobility	Ownership
Decision making	1.000	0.797*	0.806*
Mobility		1.000	0.739*
Ownership			1.000

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Next we use k-means clustering, an unsupervised classification technique used to group observations into clusters, for all three index variables obtained using PCA for 640 districts of India, with the objective of dividing them into homogeneous groups that share similar index values. The number of clusters (k) is not known beforehand and is chosen by trying a grid of possible values for k , computing the within-cluster variance for each, and examining its rate of decrease. The point where the decrease in within-cluster variance becomes less pronounced ('elbow point') is taken as an indication of an appropriate number of clusters. The Results on k means clustering are discussed in Section 4.2.

3.4 Regression analysis

Three separate regressions are performed using district-level autonomy indices which are constructed as described earlier. The dependent variable is female employment intensity or the proportion of women workers in all hired workers in a district.⁴ The ratio enables comparison across districts of varying sizes by focusing on women's relative participation in paid employment. While we recognize that such a ratio can be influenced by changes in either female or total employment, our objective is to assess women's share in the

⁴EC 2013 data provides information on total number of workers along with number of female workers in each firm of each district of India. For each district, we calculated the total number of hired workers and the total number of female workers by summing the respective figures across all firms within that district.

wage labour force.

The main covariates of interest are the norms indices which are converted into ordered categorical variables using quintiles. The first quintile, the base, represents the least progressive, while the fifth quintile represents the top 20% of the most progressive districts.

The regression model for a typical index is shown below:

$$\begin{aligned}
 Y_d = & \beta_0 + \sum_{k=2}^5 \beta_k \text{Index}_{kd} + \gamma_1 \text{Firms}_d + \gamma_2 \text{Edu}_d + \gamma_3 \text{Nightlights}_d \\
 & + \gamma_4 \text{Nightlights}_d^2 + \gamma_5 \text{Wealth}_d + \gamma_6 \text{Rural}_d + \alpha_s + \epsilon_d.
 \end{aligned} \tag{4}$$

Here d and s stands for the district and state respectively, Y_d is the proportion of female workers, Index_{kd} denotes a dummy variable taking the value 1 if the index value of the d^{th} district falls in the k^{th} ($k = 2, 3, 4, 5$) quintile, α_s is the state fixed effect and ϵ_d are random error which are assumed to follow normal distribution.

We control for overall level of economic activity (night lights), type of labour demand (proportion of firms with more than ten worker), nature of female labour supply (average years of education), household wealth (wealth index), proportion of rural area in the district and state fixed effects. The information on night light has been obtained at district level from SHRUG database using the dataset VIIRS Night Lights (2012 - 2021). Proportion firms with more than ten workers is available at district level from EC data. Years of education and wealth indices are available from NFHS 2015-16 data. Proportion of rural area in a district typically reflects the degree of urbanization, and access to infrastructure and other services. We have run the regressions with and without state fixed effects.

4 Results

4.1 Descriptive Statistics

Table 3 reports the mean and standard deviation of the control, explanatory, and outcome variables. Details of these variables are provided in Section 3.4. Each variable is based on $N = 640$ observations, corresponding to the 640 districts. The table also reports the minimum and maximum values for each variable.

Table 3: **Summary Statistics**

Variable	Mean	SD	Min	Max
Outcome variable				
<i>Proportion of female workers (Y)</i>	0.254	0.079	0.060	0.625
Norm variables				
<i>Decision making index</i>	0.175	0.093	0	1
<i>Mobility index</i>	0.234	0.121	0	1
<i>Ownership index</i>	0.181	0.109	0	1
Control variables				
<i>Proportion of big firms</i>	0.013	0.016	0.002	0.302
<i>Average years of education</i>	5.949	1.935	1.710	12.496
<i>Log night light</i>	-0.831	1.474	-8.520	3.952
<i>Wealth index*</i>	6530	59553	-106017	153898
<i>Proportion rural</i>	0.725	0.217	0	1

Source: NFHS 2015-16& ECS 2013

Notes: For norms indices minimum and maximum value are 0 and 1 by construction.

* The wealth index is a unitless, composite measure of a household's standard of living, constructed using Principal Component Analysis (PCA) based on information about asset ownership, housing characteristics, and access to basic amenities. The PCA-based wealth index is provided in the National Family Health Survey (NFHS).

4.2 Spatial distribution of norms and female employment intensity

We now examine the spatial distribution of norms at the district level and their relationship to women's employment using quintile maps, bivariate maps and k-means clustering.

Figures 1-3 show respectively the spatial distribution of decision index, mobility index and ownership index in the districts of India, stratified into five quintiles based on index values, with darker shades of blue indicating higher quintiles. The higher quintiles represent progressive norms while lower quintiles represent regressive norms. This geospatial visualisation underscores the heterogeneity in the different index values, with distinct regional clustering patterns that suggest underlying socio-economic, institutional, or cultural disparities. For instance, decision-making index values form a darker shaded cluster in districts around the state of Gujarat, Karnataka, and Tamil Nadu. Mobility and ownership index show similar patterns. This implies that these districts have progressive norms relating to women's decision-making power, mobility, and ownership patterns. Visual inspection also suggests that variation in index values is more at the state-level and there is not much variation in norms of districts within a state. The regression results discussed later, support this conclusion. Finally, Figure 4 shows the spatial distribution of the outcome variable, female employment intensity. The map reveals that the southern states show higher female employment intensity in line with progressive norms of these districts while the state of Gujarat stands out recording progressive norms but women's employment is comparatively low.

Figures 5-7 display bivariate maps of proportion of female workers versus decision making index, mobility index and ownership index respectively. These maps allow us to

Quintile Map of Decision Index Across Districts

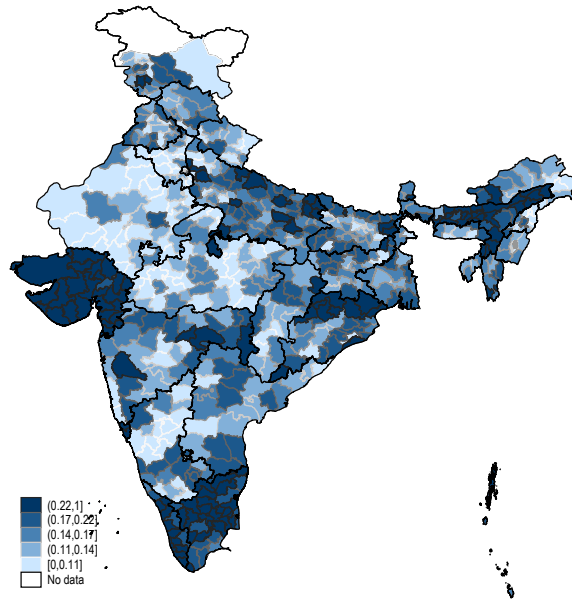


Figure 1: figure drawn by authors.

Quintile Map of Mobility Index Across Districts

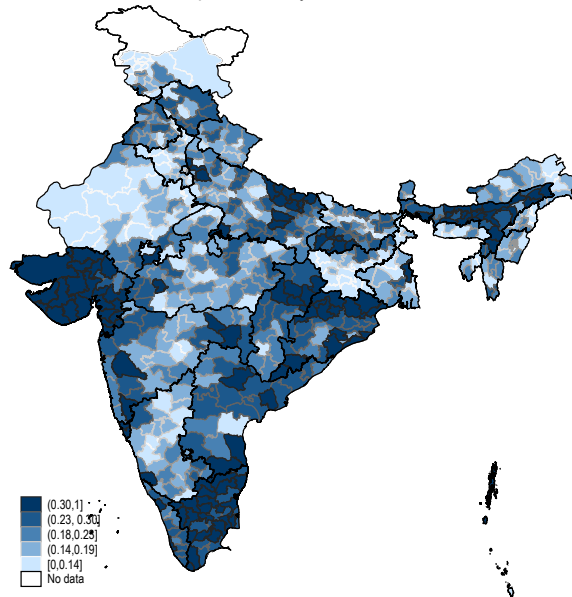


Figure 2: figure drawn by authors.

Quintile Map of Ownership Index Across Districts

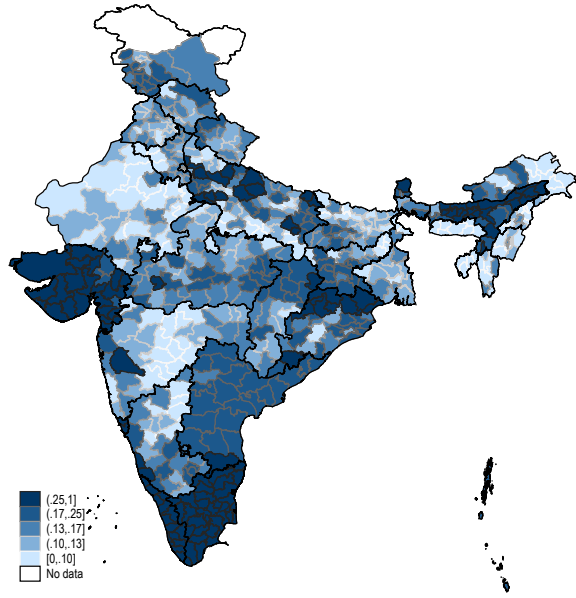


Figure 3: figure drawn by authors.

Quintile Map Of Proportion Of Working Women Across Districts

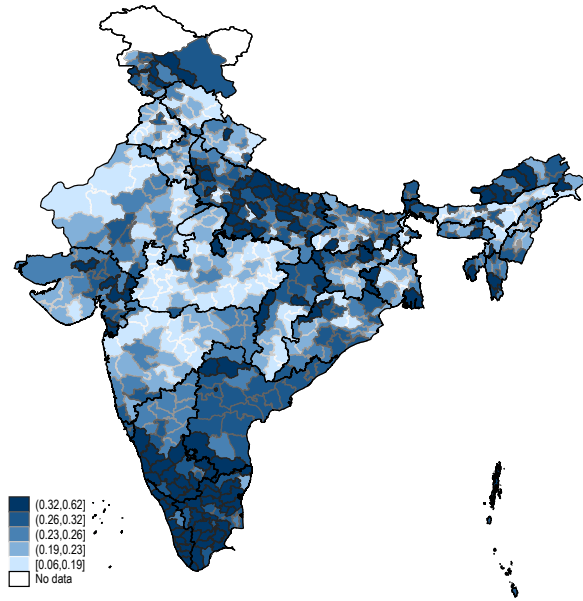


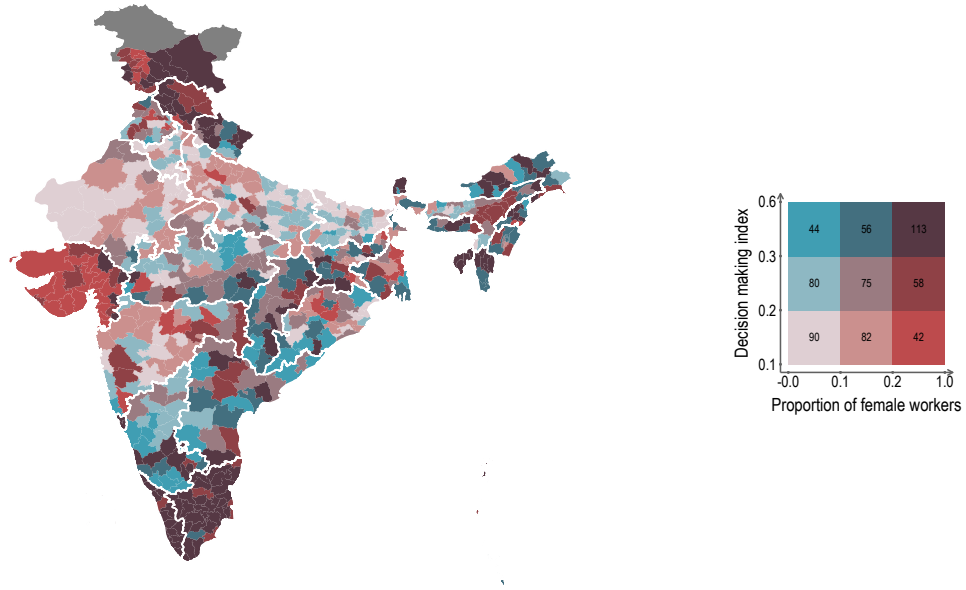
Figure 4: figure drawn by authors.

classify district into nine categories based on the relationship between female employment intensity and norms. For female employment intensity, values between 0–0.33 represent low intensity, 0.33–0.66 represent medium intensity, and 0.66–1 represent high intensity. Similarly, for the norms index, the lowest 33% corresponds to low values, the middle 33% to medium values, and the top 33% to high values. Deep purple denotes districts with both high norm values and high female employment intensity. Red and reddish tones indicate high female employment coupled with low to moderate norm values, blue denotes high autonomy but low employment, and pale pink or grey denotes low autonomy and low employment.

Figure 5 reveals that most districts cluster in medium–low female employment intensity but with moderate decision-making autonomy. Many districts even show higher decision-making scores despite low female employment intensity. This suggests that gains in household decision-making power do not necessarily translate into higher wage employment for women. This is possibly because of variations in labour demand. Conversely, the bimap of mobility index versus women’s employment in Figure 6 points to a different disjunction between work participation and freedom of mobility. The reddish tones that are prevalent in the western and some parts of northern and central India represent the high employment intensity with restricted mobility, implying that economic engagement is not a precondition for higher freedom.

Probing further into the relationship between autonomy and labor force participation, it emerges that all dimensions of autonomy do not contribute equally to economic participation. Women with more leverage in decision making aspects and mobility are more likely to participate in the labor force. However, restrictions on mobility, widely considered a significant exclusion from labor force participation, do not uniformly relate to labor market outcomes. The findings show that several districts in northern

Bivariate Map of Decision Index and Working Women



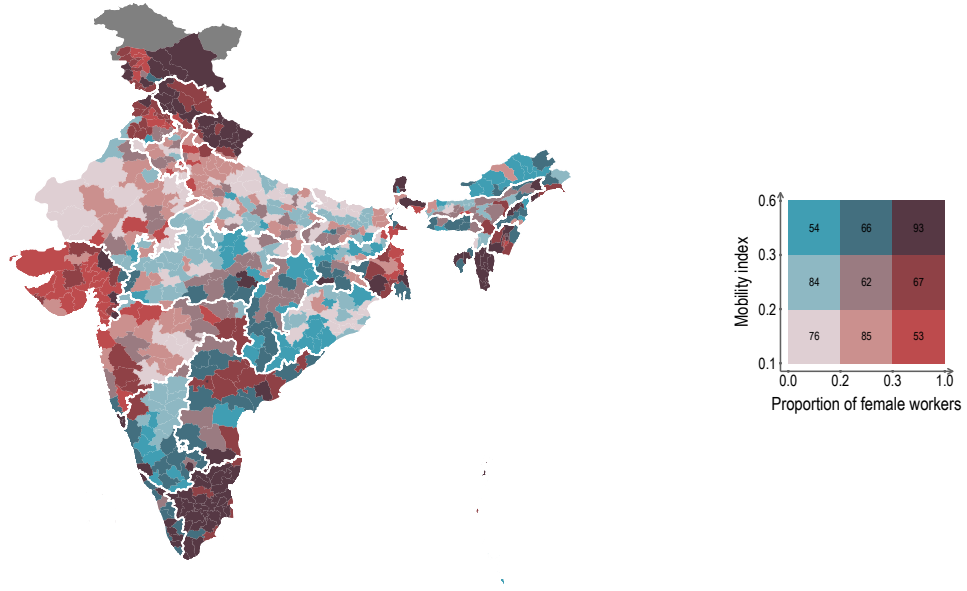
Data taken from NFHS and ECS.

Figure 5: Figure drawn by authors.

and central India have high female employment intensity despite significant mobility restrictions. This suggests that economic participation does not always require physical mobility, particularly when women are engaged in informal work. Conversely, financial ownership—such as access to bank accounts and mobile phones—correlates strongly with workforce participation in some regions but does not independently drive economic engagement.

We conclude our spatial analysis of gender norms at the district level by applying k -means clustering with various choices of k . We find that an optimal choice of 15 clusters effectively differentiates the districts. Figure 8 shows the k -means cluster map based on decision-making, mobility, and ownership norms. Similar districts are grouped into the same cluster. While neighboring districts often share similar norms, some distant districts also end up in the same cluster. This approach brings forth a fresh perspective

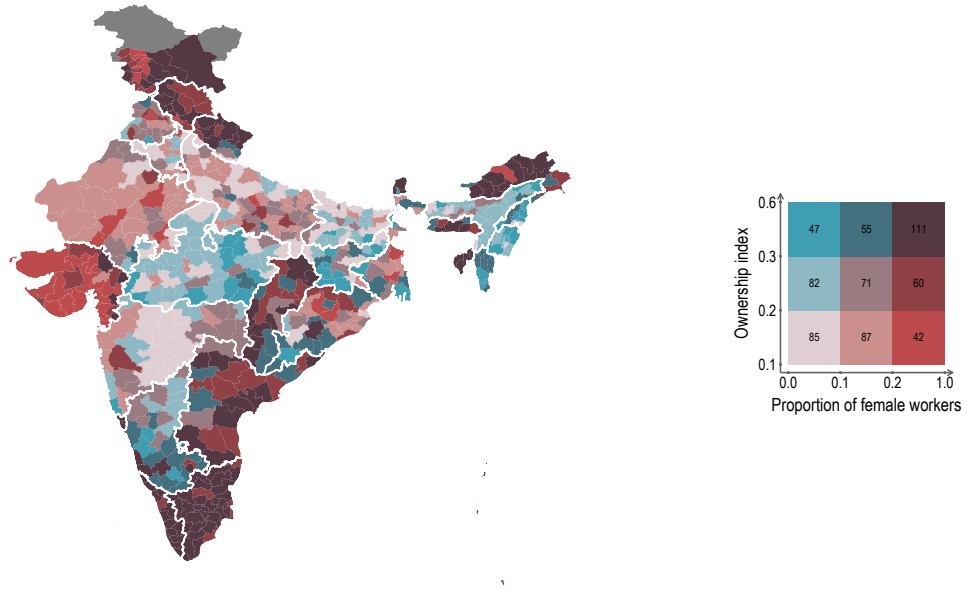
Bivariate Map of Mobility Index and Working Women



Data taken from NFHS and ECS.

Figure 6: figure drawn by authors.

Bivariate Map of Ownership Index and Working Women



Data taken from NFHS and ECS.

Figure 7: figure drawn by authors.

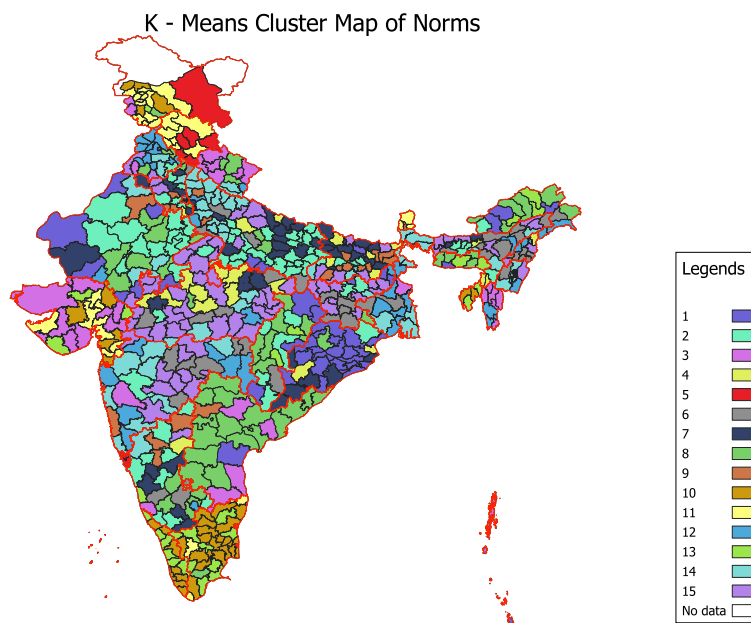


Figure 8: figure drawn by authors.

on the socio-cultural fabric of India and potentially offers an alternative framework for policy design, with interventions targeting clusters of districts instead of traditional administrative divisions.

As expected districts with relatively more progressive norms tend to be concentrated in the southern and western states of Kerala, Tamil Nadu, Karnataka, and Gujarat, while the northern and central regions of India are more restrictive. This pattern fits into broader dynamics where southern states have higher female employment intensity.

4.3 Regression results

We present the regression results in Table 4. The reported coefficients correspond to the 2nd–5th quintiles for each of the three norms indices, with the 1st quintile serving as the baseline category. For each index, the first column shows results without state

fixed effects (columns A, C and E), while the second column includes them (columns B, D and F). All control variables described in Section 3.4 are incorporated and also listed in the table's footnote. Standard errors of the coefficients are shown in parentheses.

The results indicate that, across all three norms indices, districts in the top quintile exhibit a significantly higher share of women among hired workers when state fixed effects are excluded from the model. If we allow state-level differences to drive the relationship (columns without state fixed effects) districts in the top 40% and those in the top 20% of the mobility index have significantly higher female employment intensity as compared to the base category. However, once state fixed effects are introduced, the significance of the mobility index disappears. The decision-making and ownership indices remain significant though to a lesser degree.

The strongest relationship is observed for the asset ownership index where districts in the second and higher quintiles show a significant result, both with and without state fixed effects. Compared to the bottom 20% of districts, female employment intensity is 5 percentage points higher in the top quintile districts without state fixed effects (column E), with the effect diminishing to 3 percentage points with the inclusion of state fixed effects. (column F).

Overall, the regression results support the hypothesis that progressive norms are positively correlated with the ability of women to undertake wage employment controlling for other key supply-side and demand-side variables. However, the reduced effects once state-level factors are accounted for, suggest that variation at the state-level has an important role to play. This is supported by the spatial analysis as well.

Table 4: Table showing regression of female employment intensity on quintiles of decision, mobility and ownership norms

	Decision index		Mobility index		Ownership index	
	A	B	C	D	E	F
2 nd quintile	-0.005 (0.008)	-0.0003 (0.006)	-0.004 (0.007)	-0.003 (0.006)	0.007 (0.007)	0.022 *** (0.007)
3 rd quintile	-0.002 (0.007)	0.003 (0.006)	0.002 (0.008)	0.005 (0.007)	0.013 ** (0.008)	0.018 * (0.008)
4 th quintile	0.012 (0.008)	0.002 (0.007)	0.022*** (0.008)	0.014 (0.008)	0.034 *** (0.008)	0.019* (0.010)
5 th quintile	0.030*** (0.009)	0.023** (0.010)	0.028 ** (0.009)	0.008 (0.010)	0.050** (0.009)	0.031 ** (0.014)
State FE	No	Yes	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.196*** (0.019)	0.179*** (0.024)	0.185*** (0.019)	0.185*** (0.019)	0.186*** (0.019)	0.181*** (0.019)
N	640	640	640	640	640	640

Standard errors are in parenthesis. Controls include night light, proportion of rural area, average education of women, proportion of big firm and wealth index at district level. Errors are clustered at district level

5 Conclusion

Enabling easier entry into paid work for women remains a central policy challenge for India. Interventions are needed on both supply and demand side of the labour market. On the supply side, a key determinant of women’s participation in the labour market is the prevailing gender norms that may restrict women from taking up available opportunities. We have documented a significant association between prevailing levels of autonomy (in decision-making, mobility, and ownership of assets) for women and probability of finding women in wage employment. We show that districts that lie in higher quintile of the autonomy indices have significantly higher female employment intensity, controlling for various confounding factors. Our spatial analysis and clustering further indicate that these patterns are geographically diverse — many southern and western districts combine progressive norms and higher female employment, but significant mismatches also appear that point to local constraints or complementarities that will be useful to explore in future research.

We explain the above findings through two non-exclusive mechanisms. First, increased autonomy may ease intra-household and social constraints on women’s mobility and labor supply, allowing women easier access to paid employment. Second, greater local female employment can in itself reinforce more progressive norms by social learning, institutional adaptation, and employer response. The present study is not causal in nature and cannot distinguish between these two mechanisms.

Our findings also have direct policy implications. In areas where limiting norms seem to be operative, measures that enhance women’s agency — including schemes for secure mobility, property ownership, and community awareness — will likely enhance women’s capacity to engage in labor market activity. But we also demonstrate that autonomy

is not enough: complementary policies that increase demand for female labor, diminish employer discrimination, and ensure that economic growth is translated into job opportunities are just as important.

Looking ahead, our research can be extended in several directions. First, doing this analysis with future rounds of the Economic Census will enable us to track how the relationship between autonomy and women’s employment has evolved. Second, merging our district-level measures with sectoral employment data can inform which sectors are most responsive to autonomy improvements. Third, connecting our indices with existing government initiatives — e.g., the National Rural Livelihoods Mission or state mobility schemes — would give us actionable insights into the kinds of interventions that fit with districts in various stages of change. Collectively, these measures would further our understanding of autonomy’s relationship with labor market institutions and direct policy to enhance women’s economic integration.

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References

- Acharya, D. R., Bell, J. S., Simkhada, P., Van Teijlingen, E. R., & Regmi, P. R. (2010). Women's autonomy in household decision-making: A demographic study in nepal. *Reproductive health*, 7, 1–12.
- Afridi, F., Bishnu, M., & Mahajan, K. (2023). Gender and mechanization: Evidence from indian agriculture. *American Journal of Agricultural Economics*, 105(1), 52–75.
- Afridi, F., Bishnu, M., & Mahajan, K. (2024). What determines women's labor supply? the role of home productivity and social norms. *Journal of Demographic Economics*, 90(1), 55–87.
- Alfano, M. (2017). Daughters, dowries, deliveries: The effect of marital payments on fertility choices in india. *Journal of Development Economics*, 125, 89–104.
- Anderson, S., & Genicot, G. (2015). Suicide and property rights in india. *Journal of Development Economics*, 114, 64–78.
- Basole, A., Abraham, R., Rakshit, A., Vijayamba, R., Shrivastava, A., & Halder, T. (2023). State of working india 2023: Social identities and labour market outcomes.
- Bhalotra, S. R., Kambhampati, U., Rawlings, S., & Siddique, Z. (2018). *Intimate partner violence and the business cycle* (tech. rep.). IZA Discussion Papers.
- Bloch, F., & Rao, V. (2002). Terror as a bargaining instrument: A case study of dowry violence in rural india. *American Economic Review*, 92(4), 1029–1043.
- Costagliola, A. (2021). Labor participation and gender inequalities in india: Traditional gender norms in india and the decline in the labor force participation rate (lfpr). *The Indian Journal of Labour Economics*, 64(3), 531–542.
- Deininger, K., Goyal, A., & Nagarajan, H. (2013). Women's inheritance rights and intergenerational transmission of resources in india. *Journal of Human Resources*, 48(1), 114–141.

- Desai, S., & Joshi, O. (2019). The paradox of declining female work participation in an era of economic growth. *The Indian Journal of Labour Economics*, 62, 55–71.
- Deshpande, A., et al. (2019). The visible and invisible barriers to indian women working. *The India Forum*, 070–2.
- Deshpande, A., & Kabeer, N. (2024). Norms that matter: Exploring the distribution of women’s work between income generation, expenditure-saving and unpaid domestic responsibilities in india. *World Development*, 174, 106435.
- Dhanaraj, S., & Mahambare, V. (2022). Male backlash and female guilt: Women’s employment and intimate partner violence in urban india. *Feminist economics*, 28(1), 170–198.
- Dinkelman, T. (2011). The effects of rural electrification on employment: New evidence from south africa. *American Economic Review*, 101(7), 3078–3108.
- Ebenstein, A., & Leung, S. (2010). Son preference and access to social insurance: Evidence from china’s rural pension program. *Population and Development Review*, 36(1), 47–70.
- Field, E., & Ambrus, A. (2008). Early marriage, age of menarche, and female schooling attainment in bangladesh. *Journal of political Economy*, 116(5), 881–930.
- Goldstein, M., & Udry, C. (2008). The profits of power: Land rights and agricultural investment in ghana. *Journal of political Economy*, 116(6), 981–1022.
- Jayachandran, S. (2020). *Social norms as a barrier to women’s employment in developing countries* (tech. rep.). National Bureau of Economic Research.
- Jayachandran, S., & Pande, R. (2017). Why are indian children so short? the role of birth order and son preference. *American Economic Review*, 107(9), 2600–2629.
- Klasen, S., & Pieters, J. (2015). What explains the stagnation of female labor force participation in urban india? *The World Bank Economic Review*, 29(3), 449–478.

- Lahoti, R., & Swaminathan, H. (2016). Economic development and women's labor force participation in india. *Feminist Economics*, 22(2), 168–195.
- Mehrotra, S., & Parida, J. K. (2017). Why is the labour force participation of women declining in india? *World Development*, 98, 360–380.
- Nandwani, B., & Roychowdhury, P. (2023). *British colonialism and women empowerment in india* (tech. rep.). GLO Discussion Paper.
- Rammohan, A., & Johar, M. (2009). The determinants of married women's autonomy in indonesia. *Feminist Economics*, 15(4), 31–55.
- Ross, C. E., & Wright, M. P. (1998). Women's work, men's work, and the sense of control. *Work and Occupations*, 25(3), 333–355.
- Roychowdhury, P., & Dhamija, G. (2021). The causal impact of women's age at marriage on domestic violence in india. *Feminist Economics*, 27(3), 188–220.
- Sekhri, S., & Storeygard, A. (2014). Dowry deaths: Response to weather variability in india. *Journal of development economics*, 111, 212–223.

Appendix: Correlation between the variables under each type of norm index

1. Decision index

	Contraception	Health	Purchase	Family	Husband Earning	Wife Earning
Contraception	1.000					
Health	0.046*	1.000				
Purchase	0.033*	0.968*	1.000			
Family	0.062*	0.974*	0.975*	1.000		
Husband Earning	0.060*	0.964*	0.958*	0.944*	1.000	
Wife Earning	0.064*	0.441*	0.462*	0.477*	0.440*	1.000

2. Mobility index

	market	health facility	outside village	medical help
market	1.000			
health facility	0.970*	1.000		
outside village	0.947*	0.956*	1.000	
medical help	0.251*	0.266*	0.213*	1.000
	0.0000	0.0000	0.0000	

4. Ownership index

	mobile	account	own money	health insurance
mobile	1.000			
account	0.809*	1.000		
own money	0.667*	0.694*	1.000	
health insurance	0.035*	0.231*	0.002	1.000