# Unpaid Spousal Labor and Household Entrepreneurship*

Lindsey Uniat†

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*Preliminary*
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**Abstract**

This paper proposes a novel channel contributing to the prevalence of small-scale household enterprises in developing countries: unpaid labor supplied by wives. I develop a Roy model of heterogeneous two-member households who choose between regular wage work, entrepreneurship, and home production. Wives who forgo regular employment can provide cost-saving labor within the husband's business, effectively subsidizing male entry into entrepreneurship. This channel is more prevalent when women face high barriers to working in regular jobs, implying that female-specific labor market distortions can spill over to men even under partial equilibrium. A preliminary calibration of the model is conducted using data from present-day India. Counterfactual simulations reveal that 5.5% of entrepreneur-helper households (or 1.6% of all married male entrepreneurs) are sustained because of the spousal cost-saving channel. Of these helper-dependent entrepreneurs, 31% are sustained because of the barriers women face in the regular labor market. Removal of the spousal cost-saving channel would increase the regular employment rate by 4 p.p. for women and 1 p.p. for men.

**Keywords:** Entrepreneurship; Roy model; Gender barriers; Household labor supply; Unpaid family work.
**JEL codes:** J16; J22; J24; L26; O12.

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†Federal Reserve Bank of San Francisco. **Email:** lindsey.uniat@sf.frb.org.

# 1 Introduction

A notable feature of developing economies is the prevalence of small enterprises and own-account work. These businesses have few or no employees, though family members, such as wives, often contribute labor. At the same time, in many poor countries, women face substantial barriers to entering the regular labor market—that is, finding wage or salaried employment independent of their husband's work—due to social norms, discrimination, or safety concerns. This raises the question of whether these barriers faced by women influence their husbands' decision to enter into entrepreneurship, by effectively subsidizing wives' unpaid cost-saving work within small-scale household businesses.

In this paper, I study the role of spousal labor supply in the household-level decision to enter the regular labor market vs. pursue entrepreneurship. I focus on the context of contemporary India—a suitable setting because it features high levels of small-scale entrepreneurship, substantial barriers to women entering the regular labor market, and near ubiquity of marriage among adults (Agte and Bernhardt 2023; Fletcher, Pande, and Troyer Moore 2017; Jalota and Ho 2024; Peters, Torola, Uniat, and Zilibotti 2025).

I begin by documenting four descriptive motivating facts using two data sets which provide work outcomes and time use of individuals who can be linked in households as spouses: the Periodic Labor Force Survey (PLFS) for 2017–2022 and the Time Use Survey (TUS) for 2019. First, a large share of married male entrepreneurs have wives who contribute to their business: 22% among own-account workers, and 13% among employers. Second, the "helper wife rate"—that is, the share of married male entrepreneurs whose wives contribute unpaid labor—varies considerably across sectors; it is highest in agriculture, textile manufacturing, food service and accommodation, and lowest in transportation, wholesale trade, and finance and information. Third, I document that relative to unmarried male entrepreneurs, married male entrepreneurs are more likely to operate in a sector with a high overall helper wife rate, suggesting that the availability of unpaid spousal labor may shape the decision of married men to enter into entrepreneurship. Finally, the distribution of typical hours of work performed by unpaid helper wives has a lower mean than that of women who work outside the family for wages, suggesting this arrangement allows more flexibility for other time demands, such as home production.

With this motivation in hand, I develop a model in which heterogeneous married households decide between different work regimes: the husband can be an entrepreneur or work in a regular job, and the wife can be out of the labor force, work in a regular job, or help her husband in the business, conditional on him being an entrepreneur. A wife who helps her entrepreneur husband reduces the cost of running the business. While I model this cost-saving mechanism in a reduced-form way, a plausible micro-foundation is based on the alternative of hiring labor outside the family: in comparison, a helper wife eliminates search and hiring costs, responds flexibly to seasonality and other fluctuations in demand, and has closer incentive alignment with the husband. In addition, a helper wife can allocate her time flexibly between home production and work, whereas regular

wage work demands a rigid commitment of time. In the model, households are heterogeneous in the regular work ability of both husband and wife and in the preference for the wife to perform home production.

The model distinguishes between different types of households which pick the entrepreneur-helper regime. A subset of these are *helper-dependent*, that is, without the wife's cost-saving work, the husband would prefer to exit entrepreneurship. The number of helper-dependent enterprises is shaped by the outside option of women, and thus is influenced by the barriers they face in the regular labor market. I call the subset of helper-dependent entrepreneurs who are sustained by gender barriers *barrier-dependent*. A key result of the model is that a decline in labor market barriers faced by women can draw not only more women into regular employment, but also more men, by reducing the availability of unpaid spousal labor to help in small businesses. This is true even with the labor market in partial equilibrium, distinguishing the spousal cost-saving mechanism from other work in which gender barriers affect only women directly, though men indirectly through equilibrium wages (Hsieh, Hurst, Jones, and Klenow 2019; Chiplunkar and Kleineberg 2024; Lee 2024).

I perform a preliminary calibration of the model using data on the work arrangements and time allocation of married couples as well as the gender wage gap. I use the model to quantify the effect of the spousal cost-saving channel and to perform counterfactual analyses. First, I find that 5.5% of entrepreneur-helper households (or 1.6% of all married male entrepreneurs) are helper-dependent; without wives to perform unpaid labor, the husband would exit entrepreneurship for the regular labor market. Of these, 31% are barrier-dependent.

Second, I examine the implication of the spousal cost-saving channel for the regular wage employment share of both men and women. I find that eliminating the cost-saving channel would reduce the entrepreneurship share of married men by 0.9 p.p., while it would increase women's entry to wage work by 3.8 p.p.—a 27% increase over the baseline rate. Eliminating the gender barriers has a small effect, though still negative, on male entrepreneurship, reducing the share by 0.3 p.p. Unsurprisingly, it has a larger effect on female entry to regular wage work, increasing the share by 8.3 p.p.

While these quantitative results are preliminary, they highlight that labor market distortions faced by women may matter for broader economic outcomes through the household margin. One implication of the model for policy is that measures which improve women's access to wage work may be "positive sum" when considering both genders. I conclude the paper by discussing plans for next steps.

### 1.1 Related Literature

This paper draws a novel link between three literatures: gender barriers in the labor market, the prevalence of entrepreneurship and small businesses in developing countries, and the role of household structure in shaping labor supply.

**Gender-specific labor market barriers and talent allocation.** A growing literature studies the productivity implications of gender barriers in the labor market, which distort occupational and sectoral sorting of female workers (Hsieh, Hurst, Jones, and Klenow 2019; Chiplunkar and Kleineberg 2024; Lee 2024). The barriers—interpreted as norms or discrimination—are typically exogenous and affect only women directly, although they may affect men indirectly through equilibrium wages. A novel feature of the model proposed in this paper is that exogenous barriers faced by women in the labor market can have spillover effects on men, even in partial equilibrium, through the household.

Other work has aimed to provide a microfoundation for gender barriers and rationalize differential sorting of men and women across occupations, typically through gender differences in home production demands which interact with occupational differences in job flexibility or human capital dynamics (Erosa, Fuster, Kambourov, and Rogerson 2022; Uniat 2026). My model incorporates this feature by allowing unpaid spousal labor to be more flexible and compatible with home production demands for women. In related work, Bento, Shao, and Sohail (2024) document that across countries, women are more likely to be self-employed at low levels of development and link this to flexibility in hours worked. India, however, is an anomaly, with few women engaged in self-employment (see Table 1).

**Subsistence entrepreneurship and development.** The paper builds on work distinguishing subsistence from transformational entrepreneurship (Schoar 2010) and on occupational-choice models in which individuals select into entrepreneurship based on their labor-market prospects (Poschke 2013). The persistence of small businesses and self-employment is a focus of literature on productivity differences between rich and poor countries because subsistence entrepreneurs are thought to have low growth potential. Explanations for why these work arrangements are so prevalent include delegation efficiency (Akcigit, Alp, and Peters 2021), aggregate productivity (Gollin 2008), and information frictions (Bloom et al. 2013). Akcigit, Alp, and Peters (2021) find through their calibrated model of the Indian economy that there is a high share of small enterprises with little growth potential. My complementary contribution is to introduce a household margin: wives provide unpaid labor in household enterprises, effectively subsidizing such businesses, which would otherwise cease to be profitable. Through this channel, women's labor-market barriers can affect men's occupational choices by changing the availability of unpaid spousal labor in household enterprises.

**Household labor supply and family business.** Finally, this paper relates to the literature on the impact of spouses on own labor outcomes. Much of this literature has focused on rich-country settings and has not considered the role of household entrepreneurship. The mechanisms considered typically relate to home production. For example, Calvo, Lindenlaub, and Reynoso (2024) study how labor market and marriage market sorting interact, but focus on the complementarity of non-work time.

A notable exception is Galindo da Fonseca and Bérubé (2023), who study how the family influences the decision to become an entrepreneur in Canada. However, they abstract from the

ability of spouses to contribute in each other's businesses, focusing instead on income fluctuations and risk. In contrast, this paper focuses explicitly on the unpaid labor supplied by one spouse to the business of the other spouse and aims to quantify the implications of this mechanism. This work arrangement is more prevalent at low levels of development and, to the best of my knowledge, this has not been formally modeled. Ngai, Olivetti, and Petrongolo (2024) show using novel time use diaries that historically in the U.S., women's unpaid cost-saving work in supporting family businesses—mostly farms—was undercounted. In their model and analysis, they do not study how this relates to the entry into entrepreneurship.

## 2 Data and Descriptive Evidence

Two data sets are used for the descriptive evidence and model calibration: five waves of the PLFS from 2017–2018 through 2021–2022 and the Indian TUS from 2019. The PLFS is a nationally representative survey that collects income, consumption and employment information for urban and rural households. New urban and rural households are added each quarter. However, rural households are only visited once, while urban households are revisited quarterly for a total of four quarters. For the analysis in this paper, I keep only the first visit for each household, converting the data into a representative repeated cross-section.

The TUS is a cross-sectional data set with 24-hour time use diaries for individuals over age 6 in a random representative sample of Indian households. Activities are recorded according to the International Classification of Activities for Time-Use Statistics (ICATUS) 2016. To measure time spent providing unpaid labor in family-run enterprises, I use activities under divisions 12 and 13: "Employment in household enterprises to produce goods" and "Employment in households and household enterprises to provide services", respectively.

In both data sets, I keep household heads and spouses who are aged 18 to 65. This yields a sample of 468,573 households in the PLFS and 128,888 in the TUS.

Both data sets include a variable indicating principal activity status at the individual level. These codes allow me to classify individuals as entrepreneurs (own-account or employer), unpaid family workers, wage earners (regular or casual), job seekers, as well as out of the labor force (in school, retired, disabled, attending domestic duties, or other). While own-account and employer are described as self-employment in the surveys, I interpret these categories as entrepreneurship and will refer to them as such throughout the paper.

### Fact 1: Unpaid Wife Labor is Prevalent in Household Enterprises

Restricting the PLFS data to heterosexual married household heads and spouses in which the husband is not in school, retired, or disabled, I report in Table 1 the wife's employment status by husband's employment status. The rows correspond to the type of work performed by the husband and the columns to that performed by the wife. The shares reported in the table correspond to the share of households across wife work arrangements, by husband work arrangement (i.e., the rows

sum to 1).

Table 1: Wife's Activity by Husband's Employment Type

| | $N$ | Entrepreneur | Wage worker | Family helper | Job seeker | OLF |
|---|---|---|---|---|---|---|
| Own-account | 165,328 | 0.057 | 0.050 | 0.216 | 0.001 | 0.676 |
| Employer | 11,438 | 0.076 | 0.063 | 0.132 | 0.006 | 0.723 |
| Wage worker | 149,718 | 0.060 | 0.218 | 0.010 | 0.006 | 0.707 |
| Family helper | 775 | 0.255 | 0.018 | 0.101 | 0.001 | 0.625 |
| Job seeker | 1,882 | 0.060 | 0.184 | 0.009 | 0.028 | 0.718 |
| Not working | 1,655 | 0.042 | 0.152 | 0.003 | 0.000 | 0.803 |

**Notes:** The rows are husbands while the columns are wives. Sample is married couples (male head + female spouse, both age 18–65) from pooled PLFS first-visit data, 2017–2022, dropping couples in which the husband is in education, receiving rent/pension, disabled, or other. All rates are weighted shares and each row sums to 1. I combine regular and casual wage work under wage work. For wives, I combine own-account work and employer as self-employment. OLF (out of the labor force) comprises domestic duties, education, retired/pension, disability, and other. For men, not working captures only domestic duties.

Overall, the patterns in Table 1 reveal a correlation in the work arrangement of husbands and wives. Among households in which the husband is an own-account worker, 21.6% have wives who help in the family business as their principal activity. Interestingly, if the husband is an employer, this share is lower: 13.2%. This may reflect substitutability between unpaid spousal labor and hiring an employee from outside the family. While it is very uncommon for husbands to report being an unpaid helper, in these couples the wife is disproportionately likely to be an entrepreneur, suggesting that unpaid spousal labor can operate in theory in both directions.

The share of married women working for wages is very low in India. Among the wives of wage-earning husbands, about 22% are also wage earners. However, in couples in which the husband is an entrepreneur, wives are only about a quarter as likely to earn a wage. This may reflect assortative matching on ability in the labor market, which the model presented in Section 3 takes into account.

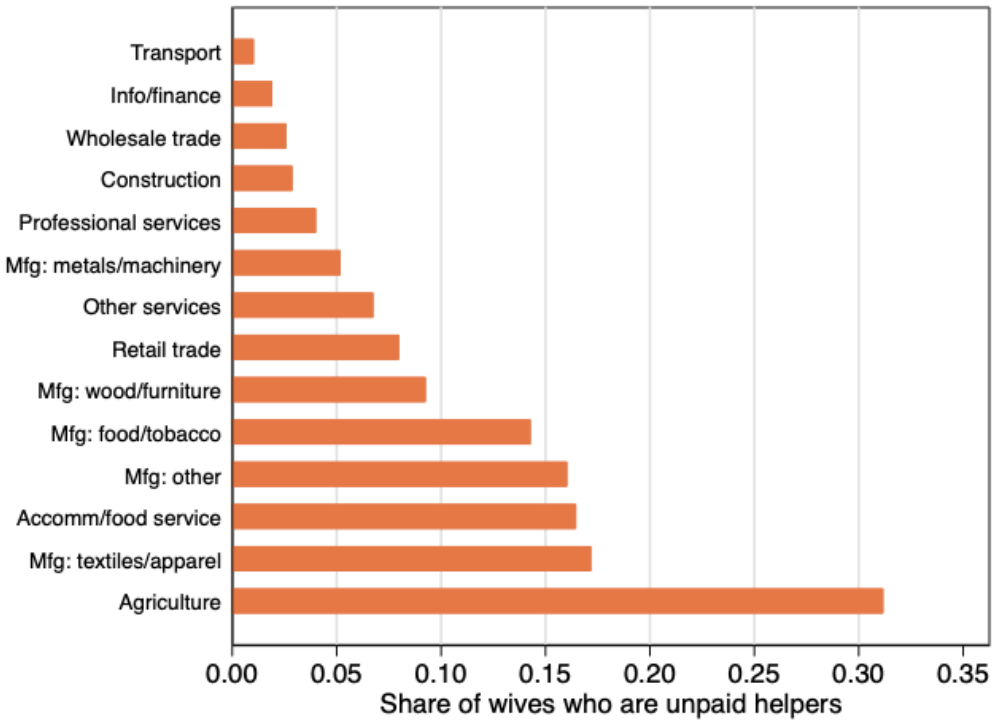
### Fact 2: Helper Wife Rates Differ by Sector of Enterprise

There is sectoral variation in the propensity of wives of male entrepreneurs to provide unpaid helper labor. Figure 1 shows the share of male entrepreneurs whose wives help, by sector of work. While agriculture has the highest "helper wife rate," there is substantial variation across sectors, with some manufacturing and food service/accommodation sectors also having high helper wife rates. Such differences may stem from differences in women's skills or social norms regarding which types of job tasks are acceptable for women.

### Fact 3: Married Male Entrepreneurs are More Likely to Enter High Helper Wife Rate Sectors

Having established that wives frequently supply unpaid helper labor to their husbands' enterprises and that there are sectoral differences in the propensity of wives to help, I next provide evidence

Figure 1: Helper Wife Rate by Entrepreneur Husband's Sector




**Notes:** Sample is married couples (male head + female spouse, both age 18–65) from pooled PLFS first-visit data, 2017–2022, restricted to entrepreneur husbands (own-account or employer) with a valid industry code. Each bar is the weighted share of wives whose principal activity is unpaid family helper, by the husband's industry (2-digit NIC, grouped).

that the availability of unpaid family labor may shape the entrepreneurial decision of husbands. In particular, I investigate whether married male entrepreneurs are more likely to work in sectors that feature a high helper wife rate, compared to single male entrepreneurs. The underlying logic is that having a wife's labor available may tilt the decision of a husband to become an entrepreneur in a sector where she is able to help, relative to entrepreneurs who cannot rely on unpaid spousal labor.

A natural concern with this comparison is that married men and single men differ in ability across sectors, and this explains any observed difference in their sectoral sorting. To mitigate this concern, I compare the sector of work of married and single male entrepreneurs, relative to married and single wage workers. The assumption is that if married and single men differ in their sector-specific ability, this should apply to both entrepreneurs and to wage workers.

Using as the outcome $Y_i$ either the aggregate helper wife rate of individual $i$'s sector or an indicator for above or below median sector helper wife rate based on the ordering of sectors in Figure 1, I run the regression specified below:

$$Y_i = \alpha + \beta_1 \text{Married}_i + \beta_2 \text{Entrepreneur}_i + \beta_3 (\text{Married}_i \times \text{Entrepreneur}_i) + X_i' \gamma + \varepsilon_i \qquad (1)$$

The coefficient $\beta_1$ captures sectoral sorting differences between married and single men, while $\beta_2$ allows for entrepreneurship to be more prevalent in certain sectors. The coefficient $\beta_3$ captures differences across married vs. single entrepreneurs; the hypothesis is that $\beta_3 > 0$, meaning that marriage shifts men toward high helper wife rate sectors, but only when they have an enterprise where a wife can contribute.

Controls include dummies for age bin (18–24, 25–34, 35–44, 45–54, 55–65) and education (below primary, primary, middle, secondary, higher secondary, graduate and above), as well as an indicator for rural status. The results are displayed in Table 2. Panel A includes all sectors, whereas Panel B restricts the sample of entrepreneurs and wage-earning men to those working outside of agriculture only.

Table 2: Married × Entrepreneur: Industry Sorting Toward High Helper Wife Rate Sectors

| | Sector Helper Wife Rate | | | High Helper Wife Rate Sector | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *Panel A: All industries* | | | | | | |
| Married | 0.017*** | −0.003*** | −0.010*** | 0.003 | −0.041*** | −0.053*** |
| | (0.001) | (0.001) | (0.001) | (0.002) | (0.003) | (0.003) |
| Entrepreneur | 0.044*** | 0.042*** | 0.034*** | 0.215*** | 0.210*** | 0.195*** |
| | (0.001) | (0.001) | (0.001) | (0.004) | (0.004) | (0.004) |
| Married × Entrepreneur | 0.053*** | 0.047*** | 0.044*** | 0.202*** | 0.182*** | 0.176*** |
| | (0.001) | (0.001) | (0.001) | (0.004) | (0.004) | (0.004) |
| Dep. var. mean | | 0.148 | | | 0.557 | |
| *N* | | 493,345 | | | 493,345 | |
| *Panel B: Excluding agriculture* | | | | | | |
| Married | −0.003*** | −0.003*** | −0.003*** | −0.065*** | −0.061*** | −0.053*** |
| | (0.000) | (0.000) | (0.000) | (0.002) | (0.003) | (0.003) |
| Entrepreneur | 0.005*** | 0.005*** | 0.005*** | 0.138*** | 0.137*** | 0.139*** |
| | (0.000) | (0.000) | (0.000) | (0.004) | (0.004) | (0.004) |
| Married × Entrepreneur | 0.010*** | 0.009*** | 0.009*** | 0.169*** | 0.161*** | 0.159*** |
| | (0.000) | (0.000) | (0.000) | (0.005) | (0.005) | (0.005) |
| Dep. var. mean | | 0.059 | | | 0.318 | |
| *N* | | 356,062 | | | 356,062 | |
| Age bins | | ✓ | ✓ | | ✓ | ✓ |
| Education | | ✓ | ✓ | | ✓ | ✓ |
| Rural | | | ✓ | | | ✓ |

**Notes:** Sample is all working men (entrepreneurs or wage workers), currently married or never-married, age 18–65, from pooled PLFS first-visit data (2017–2022). Each column reports WLS estimates weighted by the survey multiplier. "Sector Helper Wife Rate" assigns each man the share of male entrepreneurs whose wives are unpaid helpers in his industry (computed from the couple sample). "High Helper Wife Rate Sector" equals one if the man's industry has an above-median helper wife rate. Standard errors in parentheses. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

The same qualitative patterns emerge for both outcome variables in Panel A. Focusing the interpretation on columns (3) and (6), which include the full set of controls, for brevity, I find that married men are in general less likely than single men to work in high helper wife rate sectors. Entrepreneurship is more likely to be in a high helper wife rate sector. The positive and significant coefficient on the Married × Entrepreneur interaction term is consistent with the hypothesis: relative to single entrepreneurs, married male entrepreneurs are more likely to operate in sectors in which wives are likely to provide unpaid labor. One interpretation of this result is that, on the margin, the availability of unpaid spousal labor draws married men into entrepreneurship and shapes the type of enterprise they form.

The results in Panel B show that the qualitative patterns are not driven only by agriculture, which is the sector with the highest helper wife rate.

### Fact 4: Unpaid Helpers Work Fewer Hours Than Wage Workers

For the final motivating fact, I use the TUS to document differences in the typical hours worked for helper wives compared to wives who work for wages independently of their husbands. I identify married male entrepreneurs (own-account or employer) using principal activity status. For wives of these men, I measure the typical daily hours of unpaid work in family businesses (ICATUS divisions 12–13), conditional on positive helper hours. I compare this to the daily hours worked for wages among all wives who report positive wage-work hours.[1]

Figure 2 plots the distribution of daily work hours for the two groups. Helper wives work fewer hours on average (a weighted mean of 4.3 versus 5.7 hours per day), and their hours are less concentrated around the standard working day of 6–8 hours that characterizes wage work, with more mass at shorter, part-time hours. This suggests that one advantage of being an unpaid family helper is that it affords some flexibility in hours worked and is thus more compatible with home production. I build this feature into the model, which follows.

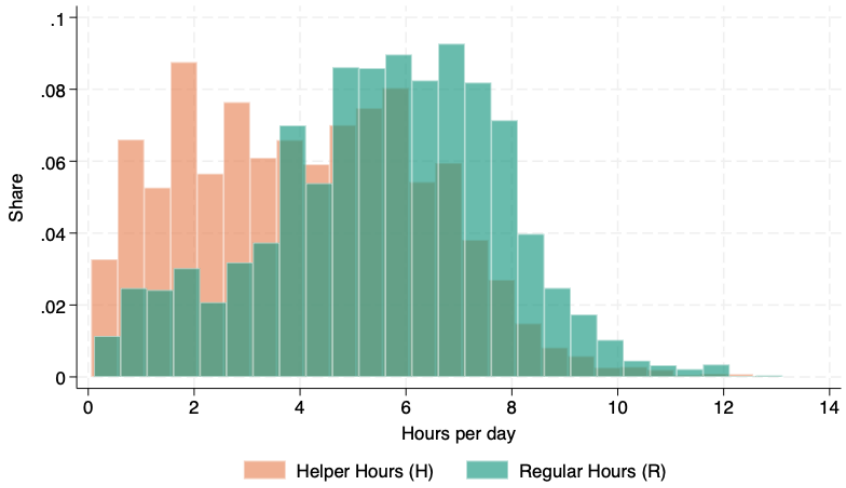
## 3 Model

### 3.1 Environment

There is a measure of married households consisting of a husband and a wife. Households are heterogeneous in their skills and preferences and endowed with a vector $(\epsilon_R^m, \epsilon_R^w, b)$, which corresponds to husband regular wage skill, wife regular wage skill, and preference for home production. In the calibrated model, described below in Section 4, I assume these are drawn from a joint lognormal distribution and allow for non-zero correlation between $\epsilon_R^m$ and $\epsilon_R^w$, to capture assortative matching in the marriage market.

[1] Wage work hours come from ICATUS division 11: "Employment in corporations, government and non-profit institutions".

Figure 2: Distribution of Wives' Daily Work Hours for Wage Workers and Helpers




**Notes:** TUS 2019. Helper hours ($H$) are daily hours in household-enterprise work (ICATUS divisions 12–13) for wives of entrepreneur husbands (own-account or employer), conditional on positive helper hours ($N = 8{,}428$). Wage-work hours ($R$) are daily hours in employment (ICATUS division 11) for all wives with positive wage hours ($N = 7{,}178$). Both distributions are weighted by the TUS multiplier.

Households are unitary and have preferences defined as:

$$U = I^m + I^w + bh \tag{2}$$

where $I^m$ and $I^w$ denote the income of the husband and wife, respectively, while $h$ denotes the home production (non-work) time of the wife. All women are endowed with one unit of time, which can be allocated to home production or work. Men do not do home production and allocate all their time to their chosen occupation.

Households choose an occupation for each spouse. The husband can work in a regular wage job ($R$) or become a subsistence entrepreneur ($E$). The wife chooses between a regular job ($R$) or being out of the labor force ($O$). Conditional on her husband becoming an entrepreneur, she can also choose to become a family helper ($H$). There are thus five possible household-level regimes for husband-wife occupation pairing: $RR$, $RO$, $ER$, $EO$, and $EH$.[2]

A husband in $R$ earns $\epsilon_R^m$. A husband in $E$ earns $A - K_0$, where $A$ is the gross return to entrepreneurship and $K_0$ is the operating cost. A wife in $R$ earns $(1-\tau)\epsilon_R^w$. Following Hsieh, Hurst, Jones, and Klenow (2019), I model barriers faced by women in the regular wage sector as a "tax", meaning women earn less than men even if they have identical skill. Women who pick $O$ or $H$ have no income of their own (i.e., $I^w = 0$).

A wife who picks $R$ forgoes all home production, meaning $h = 0$, whereas a wife who picks $O$ spends all her time on home production ($h = 1$). A wife who chooses $H$ has more flexibility in

[2]When denoting the household occupational regime, I use the convention of husband's occupation first and wife's occupation second throughout the paper.

her time: she can allocate $\ell > 0$ to her husband's business and $h \geq 0$ to home production, where $\ell + h = 1$.

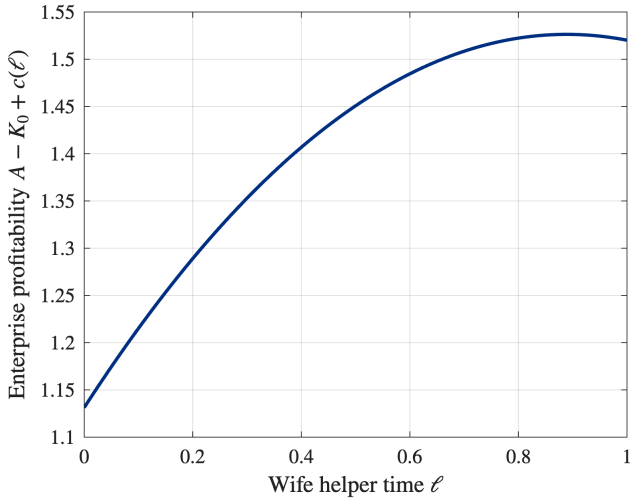
A wife who helps in her husband's business performs *cost-saving* work. The interpretation of this cost savings can be thought of in comparison to the husband's option to hire help from outside the family. By contrast, a helper wife eliminates search or hiring costs, adapts to seasonality or other fluctuations in demand, and has better incentive alignment with the entrepreneur. With this microfoundation in mind, I model the cost savings in a reduced-form way. The cost of a male entrepreneur is:

$$K = K_0 - c(\ell) \qquad \text{where} \qquad c(\ell) = \alpha\ell - \frac{\beta}{2}\ell^2 \tag{3}$$

The interpretation is that $K_0$ is the cost of an entrepreneur whose wife does not help. A wife who helps and supplies hours $\ell$ reduces the costs by $c(\ell)$, where the function $c(\cdot)$ satisfies $c(0) = 0$ and $c''(\ell) < 0$ on $\ell \in [0, 1]$, and is increasing over the range of optimal helper-time choices. These functional form assumptions imply cost savings are increasing in the helper time but at a diminishing rate. The trade-off faced by a wife in $H$ is that her time can be spent to help lower costs (and thus improve the profitability) of the husband's business, or it can be spent in home production, which carries marginal utility $b$.

Figure 3 illustrates net entrepreneurial profit, $A - K_0 + c(\ell)$, as a function of the wife's helper time $\ell$.[3]

Figure 3: Enterprise Profitability and Wife's Helper Time




**Notes:** Net entrepreneurial profitability $A - K_0 + c(\ell)$ as a function of the wife's helper time $\ell$, evaluated at the calibrated $\alpha$ and $\beta$ in Section 4. The cost-saving function $c(\ell) = \alpha\ell - \frac{\beta}{2}\ell^2$ is increasing for low $\ell$ and concave, so profitability rises in helper time at a diminishing rate.

[3]This figure uses the calibrated values from Section 4. In future versions of the paper, I will provide a more detailed theoretical micro-foundation for the cost-saving function.

### 3.2 Household Regime Choice

Denote the indirect utility of a household in regime $j \in \{RR, RO, ER, EO, EH\}$ as $V_j(\epsilon_R^m, \epsilon_R^w, b)$. Dropping the arguments for ease of exposition, this solves:

$$V_j = \max_{\ell,h} I^m(\ell) + I^w + bh \qquad \text{subject to} \qquad \ell + h = 1 \tag{4}$$

The income of the husband is written as a function of the wife's helper hours due to the cost-saving channel. The continuous hours choice applies only in the $EH$ regime. Substituting the time constraint and the cost function into the household's objective, the $EH$ problem becomes:

$$V_{EH} = A - K_0 + c(\ell) + b(1 - \ell) \tag{5}$$

The first-order condition with respect to $\ell$ is $c'(\ell^*) = b$, which yields:

$$\alpha - \beta\ell^* = b \qquad \Rightarrow \qquad \ell^* = \frac{\alpha - b}{\beta} \tag{6}$$

An interior solution requires $\alpha > b$: the marginal cost savings from the wife's first unit of helper time must exceed the value of home production. If $\alpha \leq b$, the wife does not help and the household prefers $EO$.

Substituting $\ell^*$ back into the objective, the indirect utility of each regime is:

$$V_{RR} = \epsilon_R^m + (1 - \tau)\epsilon_R^w \tag{7}$$

$$V_{RO} = \epsilon_R^m + b \tag{8}$$

$$V_{EO} = A - K_0 + b \tag{9}$$

$$V_{ER} = A - K_0 + (1 - \tau)\epsilon_R^w \tag{10}$$

$$V_{EH} = A - K_0 + \frac{(\alpha - b)^2}{2\beta} + b \tag{11}$$

where the term $\frac{(\alpha-b)^2}{2\beta}$ is the cost-saving surplus generated by the wife's help. The household picks the regime that maximizes utility: $j^* = \arg\max_j \{V_{RR}, V_{RO}, V_{EO}, V_{ER}, V_{EH}\}$.

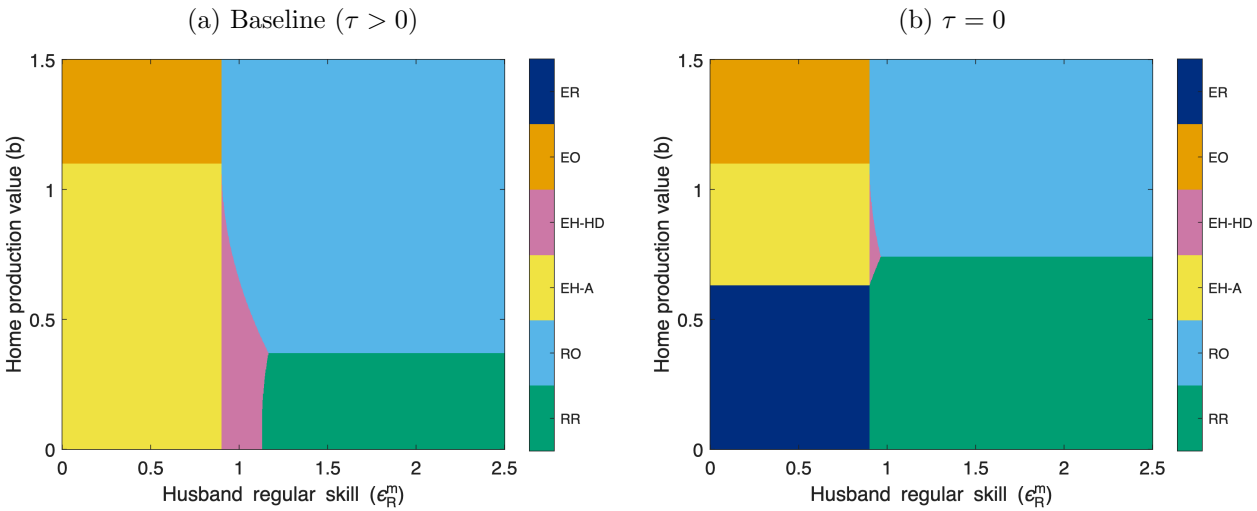
### 3.3 Implications of the Helper Spouse Channel

The availability of cost-saving labor from the wife expands the set of households who choose entrepreneurship. Without help, a husband enters $E$ only if $\epsilon_R^m < A - K_0$. But if his wife helps, the cost-saving surplus makes entrepreneurship viable for a strictly larger set of households:

$$A - K_0 \;<\; \epsilon_R^m \;<\; A - K_0 + \frac{(\alpha - b)^2}{2\beta} \tag{12}$$

I call these *helper-dependent entrepreneurs*. They would exit entrepreneurship if the wife could not help. These entrepreneurs are represented by the pink region in Figure 4a, which plots the optimal regime choice for households as a function of male ability ($\epsilon_R^m$) and preference for home production ($b$), holding wife ability fixed. This group (labeled EH-HD) is distinguished from the yellow region, which represents the always entrepreneur-helper households (EH-A).

Figure 4: Regime Map for Household Employment




**Notes:** Each panel plots the optimal household regime in $(\epsilon_R^m, b)$ space, holding $\epsilon_R^w$ fixed. The helper-dependent region (pink) shrinks when barriers are removed, as wives exit helping for regular work. Parameters: $A = 1.5$, $K_0 = 0.6$, $\alpha = 1.1$, $\beta = 1$, and $\tau = 0.5$ in the baseline.

Whether the wife helps depends on her outside options. Conditional on the husband being in $E$, the household prefers $EH$ over $ER$ iff:

$$\frac{(\alpha - b)^2}{2\beta} + b \;>\; (1 - \tau)\epsilon_R^w \tag{13}$$

Higher barriers depress the wife's regular earnings and draw more wives into helping—particularly those with low home production value $b$ and high regular wage ability $\epsilon_R^w$, who would work in the regular labor market absent barriers. I call the subset of helper-dependent entrepreneurs whose wives would choose $R$ under $\tau = 0$ *barrier-dependent entrepreneurs*. A decline in $\tau$ induces joint reallocation among these households: the wife enters regular work, removing the cost-saving subsidy, and the husband exits entrepreneurship. Barrier-dependent entrepreneurs are illustrated by the shrinkage of the pink region between Figures 4a and 4b. The latter uses identical parameter values, except that it eliminates the gender barrier.

# 4 Calibration

In order to provide a preliminary quantification of the model mechanism, I calibrate the model parameters using the method of moments. Following Erosa, Fuster, Kambourov, and Rogerson (2022), I assume that household skills and home production preferences are distributed via a joint log-normal distribution $G(\epsilon_R^m, \epsilon_R^w, b)$.

$$\begin{pmatrix} \log \epsilon_R^m \\ \log \epsilon_R^w \\ \log b \end{pmatrix} \sim \mathcal{N}\left( \begin{pmatrix} \mu_R^m \\ \mu_R^w \\ \mu_b \end{pmatrix}, \begin{pmatrix} \sigma_R^2 & \rho_{Rm,Rw}\,\sigma_R^2 & 0 \\ \rho_{Rm,Rw}\,\sigma_R^2 & \sigma_R^2 & 0 \\ 0 & 0 & \sigma_b^2 \end{pmatrix} \right) \tag{14}$$

I normalize $\mu_R^m = 0$ and $\beta = 1$, and allow non-zero correlation $\rho_{Rm,Rw}$ between $\epsilon_R^m$ and $\epsilon_R^w$. I assume home production $b$ is uncorrelated with skills.

I use the data sets described in Section 2 to construct the targeted moments, which are outlined in Table 3. The PLFS moments are computed on the couple sample from Section 2: married male household heads and their spouses, both aged 18–65, restricting to couples in which the husband works (own-account, employer, or wage earner). Regime activities are assigned from principal activity status—entrepreneurship $E$ (own-account or employer), regular work $R$ (regular or casual wage), and helper $H$ (unpaid family worker)—with the wife's outside option $O$ collecting the remaining non-employment states. The TUS moments use married couples in the same age range and condition on the wife having positive helper hours ($\ell > 0$), corresponding to regime $EH$.

I first externally set a value for $\tau$, which I obtain as the difference in mean log earnings between male and female regular wage workers in the PLFS, pooling all workers aged 18–65 with positive earnings rather than restricting to the couple sample. I set $\tau = 0.44$.[4] The remaining 7 parameters in Table 3 are jointly calibrated. While each parameter is in principle influenced by multiple moments, the mapping between parameters and moments in Table 3 gives a rough heuristic of which moment is most informative for each parameter.

I pick the parameters to minimize the sum of squared deviations between the model-generated moments and the data. Table 4 shows that the calibrated model fits the targeted moments very well.

[4]This is approximate as I do not take into account selection on skills, but I view it as part of an illustrative preliminary calibration.

Table 3: Calibrated Parameters

| Parameter | Description | Value | Target / Source |
|---|---|---|---|
| *Enterprise* | | | |
| $A - K_0$ | Net entrepreneurial productivity | 1.131 | Share of male entrepreneurs |
| $\alpha$ | Marginal productivity of wife's time | 0.889 | Mean helper hours $\ell/(\ell + h)$ |
| *Barriers* | | | |
| $\tau$ | Women's labor market barrier | 0.44 | Gender gap in regular earnings (fixed) |
| *Skill distribution (joint lognormal)* | | | |
| $\mu_R^w$ | Mean log regular skill, wife | -0.886 | Female R rate |
| $\mu_b$ | Mean log home production value | 0.498 | Female O rate |
| $\sigma_R$ | Std. dev. log regular skill | 1.252 | Variance of log R wages (men) |
| $\sigma_b$ | Std. dev. log home production value | 1.731 | Variance of helper hours |
| $\rho_{Rm,Rw}$ | Corr. husband–wife regular skill | 0.107 | Share of $RR$ couples |

**Notes:** Parameters calibrated to match moments from the PLFS (2017–2022) and TUS (2019). $\tau$ is fixed directly from the gender gap in regular earnings, while the others are jointly calibrated. TUS moments condition on positive enterprise hours ($\ell > 0$), corresponding to conditioning on regime $EH$ in the model. Helper hours defined as $\ell/(\ell + h)$, where $h$ is time in unpaid domestic services and caregiving (TUS codes 311–490).

Table 4: Model Fit: Targeted Moments

| Moment | Data | Model |
|---|---|---|
| Share of male entrepreneurs | 0.547 | 0.548 |
| Mean helper hours $\ell/(\ell + h)$ | 0.510 | 0.507 |
| Female $R$ rate | 0.126 | 0.140 |
| Female $O$ rate | 0.695 | 0.705 |
| Variance of log $R$ wages (men) | 0.541 | 0.539 |
| Variance of helper hours | 0.052 | 0.061 |
| Share of $RR$ couples | 0.098 | 0.084 |

# 5 Quantitative Exercise

While the calibration detailed in Section 4 is preliminary, it enables me to assign a quantitative magnitude to the novel mechanism proposed in this paper. Using the calibrated model, I first quantify the extent to which the spousal cost-saving labor channel influences male entry into entrepreneurship. Table 5 reports the baseline regime shares for all households. Of the entire population of households, 16% fall into the EH regime.

I calculate the share of these EH households who exit to either RO or RR under two separate counterfactuals. Under the first counterfactual, I eliminate the cost-saving channel for EH households. These EH households are the helper-dependent entrepreneurs: without the wife's helper labor, they would enter the regular labor market. Table 6 reports the share of EH households who exit under each counterfactual, as a share of EH households and as a share of all male entrepreneurs. I find that in 5.5% of all EH households, the husband would choose $R$ over $E$ if his wife could not help. Since $EH$ households are only a subset of all entrepreneurial households, this means that 1.6% of

Table 5: Regime Shares

| | Wife | | |
|---|---|---|---|
| Husband | Wage-work ($R$) | Outside ($O$) | Helper ($H$) |
| Wage-work ($R$) | 0.086 | 0.365 | — |
| Entrepreneur ($E$) | 0.055 | 0.336 | 0.158 |

**Notes:** Population regime shares from the calibrated model. Rows index the husband's activity (wage-work $R$ or entrepreneurship $E$); columns index the wife's activity (wage-work $R$, outside option $O$, or helper $H$). The husband-$R$/wife-$H$ cell is empty because there is no enterprise to help. The male entrepreneurship rate is 0.549 (the husband-$E$ row sum).

all entrepreneurial households are helper-dependent.

Under the second counterfactual, I allow the cost-saving channel to operate, but I eliminate the barrier faced by women in the regular labor market. To do so, I allow $\tau$ to drop from the baseline value of 0.44 to 0. This counterfactual enables me to determine the subset of helper-dependent entrepreneurs who are in fact barrier-dependent: the only reason the husbands in these households are entrepreneurs is because their wives are unable to work in the regular labor market, and thus instead choose to work as helpers, effectively "subsidizing" their husband's entrepreneurship. As reported in the second row of Table 6, 1.7% of total EH households would actually allocate the husband to wage work if the gender barrier were eliminated. This amounts to 31% of all helper-dependent entrepreneurs (1.7/5.5), highlighting the interaction between the cost-saving mechanism and gender barriers in the model.

Table 6: Quantifying Dependent Entrepreneurship

| Channel | % of $EH$ | % of All $E$ |
|---|---|---|
| Helper-dependent | 5.5 | 1.6 |
| Barrier-dependent | 1.7 | 0.5 |

**Notes:** Share of EH households whose husband exits entrepreneurship for wage-work under each counterfactual. Helper-dependent households exit when the wife's helper labor is removed ($\alpha = 0$); barrier-dependent households exit when the wife's gender barrier is removed ($\tau = 0$). The first column expresses the share relative to EH households; the second relative to all male entrepreneurs ($E$).

While the results in Table 6 focus on the occupational choice of the husband—whether to be an entrepreneur or to work a regular job—I can also quantify the impact of the mechanism on women. Table 7 reports male and female wage-work ($R$) participation rates in the baseline and under each counterfactual. As is to be expected, the elimination of gender barriers increases women's participation in regular wage work substantially (from 14.1% under the baseline to 22.4%). The fact that women's $R$ rate does not converge to that of men in this counterfactual stems from the fact that only women do home production, which households value, in the model, and because women are on average less skilled in wage work than men.

What is more surprising is that the elimination of the spousal cost-saving channel also increases women's entry into $R$. The results in Table 7 suggest that the option of being a helper reduces

Table 7: $R$ Participation Rates under Counterfactuals

| | Baseline | Eliminate Cost-Saving Channel | Eliminate Gender Barriers |
|---|---|---|---|
| Male $R$ rate | 0.451 | 0.460 | 0.454 |
| Female $R$ rate | 0.141 | 0.179 | 0.224 |

**Notes:** Wage-work ($R$) participation rates from the calibrated model. The male $R$ rate is the share of husbands in wage-work (regimes $RR$ and $RO$); the female $R$ rate is the share of wives in wage-work (regimes $RR$ and $ER$). Columns report the baseline, the counterfactual with no helper channel ($\alpha = 0$), and the counterfactual with no gender barrier ($\tau = 0$).

women's entry to the regular labor market from 17.9% without the option to 14.1% with it. This is due to the flexibility it affords over the allocation of time between home production and work.

# 6 Conclusion & Next Steps

This paper has provided evidence of the importance of unpaid wife labor in the operation of household businesses and the decision of husbands to be subsistence entrepreneurs. Through a Roy model of household occupational choice, I develop a novel spousal cost-saving mechanism and show how some male entrepreneurs may be sustained only because of unpaid labor supplied by their wives. Because the prevalence of these helper-dependent entrepreneurs depends on the outside options of women, barriers faced by women in the regular labor market can spill over to affect male occupational choice through the household. A preliminary calibration of the model suggests a small but non-trivial contribution of this mechanism in present-day India: 5.5% of entrepreneur-helper households are sustained through the cost-saving mechanism.

While this first draft serves to motivate and prove the concept, I plan to extend the project along two dimensions. First, I will seek exogenous variation in the demand for women's work in the regular labor market, which would provide further validation of the mechanism. Second, I will develop a richer model in which the cost-saving (or productivity-enhancing) role of spousal labor is micro-founded, allowing the framework to speak more directly to questions of misallocation and aggregate productivity. I hope to eventually speak to questions of allocative efficiency.

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