

Discouraged Worker Effect and Labor Market Behavior of Urban Married Women

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The study investigates the importance of poor local labor market conditions in explaining the labor market behavior of married women in urban India. Using nationally representative employment data, we empirically test for the existence of a discouraged worker effect arising from either of two mechanisms: (i) unexplained gender wage gap, or (ii) degree of underemployment. A three-stage, district-level analysis of female labor market behavior was undertaken, and selectivity bias was controlled for by using censored probit in the second stage and trivariate probit with Geweke–Hajivassiliou–Keane smooth recursive simulator technique in the third stage of this multilevel framework. We find evidence that the wage gap discourages women from participating in the labor market and the prevalence of underemployment, in terms of overqualification by occupation, discourages them from exploring better job opportunities by making on-job search efforts.

Keywords: discouraged worker effect, female labor force participation, gender-based wage discrimination, local labor market conditions, overqualification, underemployment

JEL codes: J16, J31, J64, J71, R23, R41, R58, Z22

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I. Introduction

A distressing feature of India's female labor market has been the low and stagnant labor force participation rate of women. Studies on the issue have cited an array of complex and interconnected factors like increased education enrollment, rising household incomes, domestic constraints, sociocultural norms, and lack of job opportunities, among others, as possible explanations for the observed trend (Afridi, Dinkelman, and Mahajan 2018; Fletcher, Pande, and Troyer Moore 2017; Klasen and Pieters 2015). Against this background, this paper empirically explores the importance of the discouraged worker effect arising from poor local labor market conditions in explaining the labor market behavior of married women in urban India.

Discouraged workers are individuals who refrain from entering the labor force due to their anticipation of poor labor market conditions. Conventionally, the discouraged worker effect has been related to the phase of recession in the business cycle, primarily influencing women or the secondary wage earners in a family (Benati 2001). Women residing in regions with high unemployment rates are less likely to enter the labor market and engage in a job search than those living in areas with low unemployment rates (Bičáková 2016; Dagsvik, Kornstad, and Skjerpen 2013). Gender discrimination in the labor market, particularly the wage gap, has an adverse impact on women's labor market activity (Cavalcanti and Tavares 2016).

In India, several papers have supported the presence of a gender gap in wages (Duraisamy and Duraisamy 2016; Deshpande, Goel, and Khanna 2018) and unemployment (Ghose 2004; Chen and Raveendran 2012). Mathew (2015), in a study on urban Kerala, concluded that it was the worsening of the female-to-male wage ratio between 2004 and 2012 that discouraged women from entering the labor market. In general, the unemployment rate tends to increase with education level, but it is relatively higher for women than men, irrespective of the educational category (Bairagya 2015). In the presence of high unemployment rates, women, particularly better educated ones, may either remain unemployed until suitable opportunities arise or withdraw from the labor market (Chaudhary and Verick 2014). While the literature has recognized the discouraging effect of poor labor market conditions on women, there is little empirical research to the best of our knowledge. Our paper aims to fill this research gap by undertaking a three-stage, district-level analysis of female labor market behavior and examine the existence of the discouraged worker effect in each of the stages. The three stages—(i) decision to enter the labor force, (ii) employed–unemployed status in the labor market, and (iii) decision to engage in job search—may all be negatively influenced by poor local labor market conditions arising from the

gender wage gap and underemployment. We define underemployed as either unemployed, overqualified for the current job, or working on a part-time basis (McKee-Ryan et al. 2005).

In this multistage framework, the methodology suffers from the problem of selectivity bias. This necessitates the use of separate estimation models in each stage. Though we control for the individual, household, district, and geographic characteristics in every stage, a slight variation in this set of independent variables was required to identify the models. We theoretically justify the exclusion restrictions in the methodology section. The childcare responsibilities of women, the presence of elderly women in the family to help in domestic duties, family income, and the geographic dimension of urbanization are the crucial factors influencing the decision to join the labor market (Sudarshan and Bhattacharya 2009, Compton and Pollak 2014). However, these variables are excluded from the other two models. Women's technical education may affect their employment status but have little influence on their labor force participation rate or job search efforts. The job characteristics of employed women (Böckerman and Ilmakunnas 2009) and the presence of working women in the family (Nicoletti, Salvanes, and Tominey 2018) are assumed to be excluded variables in identifying the job search models.

We focus on adverse local labor market conditions as an important source of discouragement for married women. As married women are spatially restricted in terms of time and distance to the workplace, their labor market behavior can be best explained by the limited employment opportunities in the regional or district level labor markets (Matas, Raymond, and Roig 2010; Parks 2004). We use unit-level employment data of the National Sample Survey (NSS) for 1987/88, 1999/2000, 2004/05, 2009/10, and 2011/12, along with census and election data.¹ The district-level variables generated from the three data sources form the basis of the analysis.²

The results provide support to the underlying hypothesis. The unexplained gender wage gap discourages women from entering the labor force as well as making on-job search efforts. The discouraged worker effect of the wage gap on the probability of labor force participation was 2.6% in 2011/12. These findings for India exceed those for the Republic of Korea and Japan, where despite much higher female labor force participation rates, the negative impact of the gender wage gap stood at

¹The National Sample Survey Office conducts the field surveys in four subrounds (seasons) comprising 3 months each and spreading over a 1-year period from July to June of the following year. For example, 2004/05 refers to the period from July 2004 to June 2005.

²The NSS sample size at the district level does not permit us to infer about a particular district. However, we may use district-level estimation to draw inferences for India (Kingdon and Unni 2001, Drèze and Murthi 2001).

1.4 percentage points and 0.3 percentage points, respectively (Kinoshita and Guo 2015). Higher underemployment at the district level also discourages women from making job search efforts.

However, our empirical framework's limitation stems from the omitted variable bias generated by the presence of unobserved differences in the characteristics of married women and men (Chevalier 2007). Unlike men, women's motivation, and expectations behind their labor force participation and job search decisions may be linked with their stereotypical roles in society (Polachek and Xiang 2014). This also influences local labor market factors like women's relative wages compared to men's and access to suitable job opportunities, capturing the discouraged worker effect.

The study contributes to the current understanding of the female labor market problem in India in several ways.³ First, it analyzes the impact of macrolevel labor market conditions, which are external to the individual, on the labor market behavior of married women. It thus adds a spatial dimension to the microeconomic approaches emphasizing idiosyncratic characteristics in determining the labor force participation rates of women. Second, it provides empirical support to the presence of the discouraged worker effect arising from poor local labor market conditions. Third, utilizing a three-stage framework offers a deeper understanding of female labor market behavior by extending it beyond the labor force entry decisions to employed and unemployed women's job search behavior.

The rest of the paper is organized as follows. We explain the variables generated from the three data sources and present summary statistics in Section II. Section III describes the methodology used for testing the underlying hypothesis. Section IV analyzes the results and includes a discussion of key findings. The final section concludes the paper.

II. Data and Variables

We use NSS employment and unemployment data from five quinquennial rounds: 43rd (1987/88), 55th (1999/2000), 61st (2004/05), 66th (2009/10), and 68th (2011/12). In addition, data from the Census of India (1991, 2001, and 2011) and the Election Commission of India (general elections in 1989, 1999, 2004, 2009, and 2014)

³An overview of female labor market in India is provided in the Online Appendix A at https://web.iitd.ac.in/~sbpaul/online_appendix/ADR2021/ADR2021_OnlineAppendix.pdf.

are used. We generate a common district-level dataset by merging NSS, census, and election data.⁴

The NSS is a comprehensive source of employment data comparable across rounds and can provide long-term insight into changes in the Indian labor market. It makes available household- and individual-level information on variables like age, education level, marital status, labor force participation, employment status, occupation, industry, and wage or salary. We generate three district-level variables using the above data source: (i) the average share of the working age (15–55 years) population with at least a secondary education, (ii) unexplained gender wage gap, and (iii) degree of underemployment. The last two variables capture the discouraged worker effect due to poor labor market conditions in a district.

To obtain the gender wage gap, we estimate the men's and women's Mincerian semilogarithmic wage equations separately for every district:

$$\widehat{W}_m = X^m \widehat{\beta}^m, \quad (1)$$

$$\widehat{W}_f = X^f \widehat{\beta}^f, \quad (2)$$

where m and f denote male and female, respectively, and X includes a set of characteristics like age, marital status, social group, education, technical education, occupation, and industry.

Following the Blinder–Oaxaca decomposition technique (Blinder 1973, Oaxaca 1973), we estimate counterfactual wages of women if they were remunerated as per the men's wage function

$$\widehat{W}_f^* = X^f \widehat{\beta}^m, \quad (3)$$

$$\widehat{W}_f^* - \widehat{W}_f = (\widehat{\beta}^m - \widehat{\beta}^f) X^f. \quad (4)$$

This gives the gender wage gap, which is unexplained by the differences in men's and women's characteristics, and may be due to labor market discrimination. The variable generated is termed as the unexplained gender wage gap in the rest of the paper.

The underemployed individual is defined as someone who is either unemployed, currently working on a part-time basis, or overqualified for the current job. Correspondingly, we generate three variables at the district level: (i) proportion of

⁴The merging process is explained in the Online Appendix B.

unemployed, (ii) proportion of employed working for less than or equal to half of the regular working hours, and (iii) proportion of employed who are overeducated by occupation.⁵

Overqualification by occupation is empirically measured using the realized matches method (Flisi et al. 2017). The mean of years of education is obtained for each occupation. A worker is considered overqualified if the education level exceeds 1 standard deviation from the mean for the given occupation.

We use Census of India data for measuring the urbanization of a district by the percentage of the urban population in the total population and by the total number of census and statutory towns.⁶ The former is the demographic measure and the latter is the geographic measure of urbanization. The urbanization variable is used as a proxy for the job opportunities in the local labor market.

The information on parliamentary elections in India is available from the Election Commission of India. We estimate the percentage of female electorates who cast their votes and the percentage of females among the total electoral candidates in a district. The variable aims to capture the political empowerment of women and its impact on their economic participation (Ghani, Kerr, and O'Connell 2012).

We focus on urban married women between the ages of 15 and 55 years old (working age). The sample size varies from around 33,000 in 1987/88 to 37,000 in 2011/12. Table 1 provides summary statistics. The labor force participation rate of married women increased from 15% in 1987/88 to 26% in 2004/05.⁷ Subsequently, it declined and then stagnated at around 20%. The unemployment rate of women increased from 1% in 1987/88 to 6% in 2004/05 and, thereafter, stagnated at 4%.

The off-job search rate for unemployed women increased from 79% in 1999/2000 to 88% in 2011/12. On average, the on-job search rate for employed women increased marginally from 7% in 1999/2000 to 9% in 2009/10, but then declined to 6% in 2011/12.

The average age of married women increased marginally from 33 years to 36 years. The share of illiterate women declined significantly from 49% in 1987/88 to

⁵Labor force constitutes persons categorized as either employed or unemployed. Unemployment rate is the percentage of persons unemployed to the total persons in the labor force. Unemployed constitutes persons who are not working but are seeking or available for work.

⁶Census towns are defined in terms of population size, nonagricultural workers, and population density. Statutory towns are places with a municipality, corporation, cantonment board, or notified town area committee (Registrar General Census Commissioner 2011).

⁷The labor force participation rate of women has been calculated by taking together their principal and subsidiary activity status.

Table 1. Summary Statistics

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Working-age population (15–55 years)	33,655	44,564	39,475	37,274	36,980
Labor force participation rate	0.15	0.21	0.26	0.20	0.21
Unemployment rate	0.01	0.03	0.06	0.04	0.04
On-job search rate	NA	0.07	0.08	0.09	0.06
Off-job search rate	NA	0.79	0.78	0.83	0.88
Individual Attributes					
Age (years)	33.00	34.61	34.94	35.75	35.97
Age group					
15–24	0.22	0.15	0.14	0.12	0.11
25–34	0.36	0.36	0.36	0.35	0.34
35–44	0.25	0.30	0.30	0.32	0.32
45–55	0.17	0.19	0.20	0.22	0.23
Completed education level					
Illiterate	0.49	0.37	0.36	0.28	0.27
Primary and middle	0.29	0.28	0.31	0.29	0.28
Secondary and higher secondary	0.15	0.23	0.22	0.28	0.29
Graduate and above	0.07	0.12	0.11	0.15	0.16
Technical education	0.02	0.03	0.03	0.02	0.02
Household Characteristics					
Social group					
Others (General)	0.85	0.52	0.42	0.42	0.39
Scheduled tribe	0.04	0.07	0.07	0.07	0.08
Scheduled caste	0.11	0.12	0.14	0.13	0.13
Other backward caste	NA	0.29	0.37	0.38	0.40
Household size	6.12	5.76	5.63	5.30	5.21
Presence of children below 5 years old	0.50	0.40	0.41	0.34	0.34
Presence of elderly women in the family (50 years or above and not disabled)	0.07	0.08	0.09	0.09	0.10
Partner employed	0.96	0.95	0.95	0.95	0.95
Log (MPCE)	1.67	6.53	6.70	7.19	7.50
Presence of married working women in the family (18 years or above)	0.17	0.25	0.29	0.23	0.24
Job Characteristics					
Permanent nature of employment	NA	0.63	0.67	0.65	0.71
Union membership	NA	0.19	0.16	0.18	0.17
Written job contract	NA	NA	0.13	0.15	0.15
Social security benefit	NA	0.21	0.15	0.19	0.19
Employed regularly	NA	0.87	0.87	0.88	0.89
District Characteristics					
Average education level of district					
Percentage of individuals with at least a secondary education	0.33	0.44	0.42	0.52	0.54
Level of urbanization of district					
Percentage of urban population	42.60	42.61	37.30	41.87	42.48
Number of census and statutory towns	16.20	14.35	14.21	20.49	20.39
Political participation of women in district					
Percentage of women voters	57.63	55.64	54.81	57.58	63.49

Continued.

Table 1. *Continued.*

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Percentage of women electoral candidates	3.63	6.94	6.82	7.18	7.22
Discouraged Worker Effect (district)					
Unexplained gender wage gap (log)^a	0.37	0.58	0.55	0.53	0.45
Underemployment					
Proportion of part-time employees	0.11	0.08	0.08	0.06	0.05
Proportion of unemployed individuals	0.01	0.05	0.06	0.04	0.05
Proportion of overqualified employees	0.09	0.09	0.09	0.10	0.10

MPCE = monthly per capita consumption expenditure, NA = not available.

^aUnexplained gender wage gap is measured as the log of the relative wage of the male in terms of female wage.

Notes: Summary statistics are based on the merged data used for the analysis. Comparable district-level statistics based on unmerged data are provided in the Online Appendix Table B2. Summary statistics for 1987/88 do not include job characteristics due to a lack of clear and consistent data. Other backward caste information is not available for 1987/88.

Source: Authors' calculations.

27% in 2011/12, while the proportion of women with secondary or above education increased from 22% to 45% over the same period.

The labor market behavior of married women is influenced by several household characteristics like family size, presence of small children, presence of an elderly woman to share domestic responsibilities, partner's employment status, other working women in the family, and total household income. We proxy household income by monthly per capita consumption expenditure (MPCE). NSS unit-level data do not identify couples. To overcome this limitation, we utilize the relation to the head of the household information. We carefully generate the couples' dataset through a repeated exercise of ranking and match-making the male and female family members.⁸

Table 1 also reports some estimates related to job characteristics of employed women. Over-time trends indicate that an increasing proportion of women are employed permanently (from 63% in 1999/2000 to 71% in 2011/12). Only a small and stagnant percentage of women are formally employed through a job contract (from 13% in 1999/2000 to 15% in 2011/12). Access to social security benefits declined from 21% in 1999/2000 to 19% in 2011/12.

The proportion of individuals with at least a secondary education increased from 33% in 1987/88 to 54% in 2011/12. The political participation of women and the level of urbanization also increased over the study period. The unexplained gender wage gap widened from 37% in 1987/88 to 58% in 1999/2000, before declining to 45% in

⁸A detailed description of the operationalization of the variables is available in the Online Appendix B.

2011/12. This implies that a man received a 37% higher wage than a woman with similar characteristics in 1987/88, with the gap increasing to 45% in 2011/12.

There is a decline in the district-level proportion of part-time workers. The percentage of unemployed individuals increased from 1% in 1987/88 to 5% in 2011/12, whereas the proportion of overqualified individuals remained nearly stagnant at around 10%.

III. Methodology

The labor market behavior of married women is analyzed within a three-stage framework comprising labor supply decision, employment status, and job search efforts.⁹ In each stage, we aim at finding the presence of the discouraged worker effect arising from the unexplained gender wage gap and underemployment in the local labor market.¹⁰

In the first stage, married women's labor market entry decision may be negatively influenced by the gender wage gap. However, the extent of underemployment may not be a significant factor in this phase.

The dependent variable Y_i takes the value 1 if the i th woman is in the labor force and 0 otherwise. We regress the following probit model:

$$P[Y_i = 1] = \varphi(\beta_0 + \beta_1 \text{ Discouraged Worker Effect} + X\gamma + u). \quad (5)$$

where the unexplained gender wage gap is the main explanatory variable. We control several factors like age, education level, social group, family size, presence of small children and elderly women, partner's employment, and MPCE. Equation (5) also includes district-specific variables of political participation of women, urbanization, and state fixed effects.

In the second stage, the dependent variable is employment status, taking the value of 1 if unemployed and 0 otherwise. We assume that individual attributes like age and education are the key factors, but the gender wage gap and underemployment have little influence on the probability of being employed. Nevertheless, this model suffers from selectivity bias, and the discouraged worker effect of the wage gap may enter indirectly from the first stage.

⁹A graphical depiction of the multistage framework is available in the Online Appendix Figure C1.

¹⁰In a similar three-stage framework, [Van Ham, Mulder, and Hooimeijer \(2001\)](#) analyzed the effect of underemployment on the job search decisions of men and women based on Netherlands Labor Force Surveys 1994–1997.

To overcome this problem, we use a bivariate probit model composed of: (i) a selection equation from the first stage and (ii) an outcome equation of the probability of unemployment. The identification of this model is subject to the fulfillment of exclusion restriction, which requires that the selection equation contain at least one independent variable that has no direct effect on the dependent variable in the outcome equation. The presence of elderly women to share domestic work is assumed to satisfy this restriction because it may not directly influence the labor market status of working-age women. Studies have shown that coresidence of the elderly increases the labor force participation rate of younger married women (Das and Žumbyté 2017, Compton and Pollak 2014). We include technical education as an important determinant of employment status, but we exclude small children, MPCE, and the number of towns from the outcome equation.

In the third stage, we model job search efforts in a trivariate probit framework. The employed women are deemed to be engaged in the job search process if they are looking for an alternative or additional employment opportunity. This job search decision may be negatively influenced by the wage gap and the extent of overqualified individuals in the local labor market. On the other hand, unemployed women are considered to be engaged in the job search process if they are actively seeking work. Women may be discouraged from making such efforts due to their anticipation of getting poor quality jobs, as observable in the high proportion of part-time workers. Part-time jobs suffer from a lack of decent working conditions. A part-time job is a nonstandard form of employment (NSFE) in which the employee lacks a proper job contract as well as benefits relating to maternity leave, pension, and social security (Landau, Mahy, and Mitchell 2015).¹¹

We model on-job and off-job search efforts separately using binary dependent variables, assuming a value of 1 if engaged in the search process and 0 otherwise. The job characteristics are added in the on-job search model because they govern employed women's switch-over efforts. Similarly, in the off-job search model, the presence of married working women in the family is included to consider the peer effect.

The models in the third stage suffer from selectivity bias arising from the problem of double sample selection. Women self-selecting themselves out of the labor force may also avoid the efforts and costs associated with the job search. Similarly, women with a higher predicted probability of being unemployed may be more

¹¹According to the International Labour Organization, NSFE includes temporary employment, contractual agency arrangements, ambiguous employment relationships, and part-time employment (International Labor Office 2015).

discouraged from engaging in the job search process. The use of a trivariate probit framework estimated through the Geweke–Hajivassiliou–Keane smooth recursive simulator technique helps us to mitigate this bias (Carreón Rodríguez, Gerardo, and García-Menéndez 2011).

Every stage is characterized by different theoretical and behavioral dynamics, which, together with selectivity bias, necessitates separate estimation models. Identifying these models requires some modifications in the common set of independent variables used in the analysis.¹²

IV. Results

A. Labor Market Participation

The results of the probit model in the first stage are provided in Table 2. The average marginal effect of the gender wage gap is negative and statistically significant in 1987/88, 2009/10, and 2011/12. With a 1 percentage point increase in the wage gap, the probability of labor force participation decreases by 1.9% in 1987/88 and 2.6% in 2011/12. This implies that if men received a wage that was 37% higher than comparable women in 1987/88, and the gap increased to 38%, then the labor force participation rate of women would decline by 1.9%.

The findings are also supported by pooled cross-sectional analysis with year dummies for taking into account any change over time (Table 3). The interaction terms of the gender wage gap with year dummies are also included in the model for controlling the time-specific effects of the wage gap.¹³

In 1999/2000 and 2004/05, the wage gap did not seem to impose a discouraging effect on the participation decision. To explore the source of this apparent anomaly, we undertake a state-level disaggregated analysis of the trends. We find that the correlation between the unexplained gender wage gap and female labor force participation rate is positive and significant for some states, while for others, it is negative and significant.¹⁴ Therefore, the aggregate effect for the country as a whole is insignificant. The positive correlation is visible for Uttar Pradesh and Andhra Pradesh in 1999 and for Karnataka, Kerala, and Uttarakhand (formerly Uttaranchal) in 2004/05. The existing literature may provide a likely explanation for this observation.

¹²A related explanation is available in the Online Appendix C.

¹³Detailed results are available in the Online Appendix Tables D1 and D2.

¹⁴Correlations are available in the Online Appendix Table D4.

Table 2. Average Marginal Effects of Explanatory Variables on the Probability of Labor Force Participation in Probit Model

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Discouraged Worker Effect					
Unexplained gender wage gap	-0.0194** (0.0098)	0.0003 (0.0132)	0.0007 (0.0040)	-0.0138** (0.0070)	-0.0259** (0.0102)
Individual Characteristics					
Age (Years)	0.0024*** (0.0002)	0.0033*** (0.0003)	0.0017*** (0.0004)	0.0052 (0.0049)	0.0003 (0.0005)
Education level (Ref: Illiterate)					
Primary and middle	-0.0757*** (0.0083)	-0.108*** (0.0086)	-0.0978*** (0.0129)	-0.0614*** (0.0089)	-0.0684*** (0.0106)
Secondary and higher secondary	-0.0141 (0.0109)	-0.0548*** (0.0108)	-0.0717*** (0.0136)	-0.0920*** (0.0131)	-0.1020*** (0.0104)
Graduate and above	0.1320*** (0.0133)	0.1480*** (0.0129)	0.1030*** (0.0199)	0.0700*** (0.0142)	0.0565*** (0.0139)
Household Characteristics					
Social group (Ref: Others)					
Scheduled tribe	0.0838*** (0.0151)	0.1390*** (0.0179)	0.1500*** (0.0254)	0.1130*** (0.0192)	0.0957*** (0.0202)
Scheduled caste	0.0756*** (0.0086)	0.1080*** (0.0118)	0.0720*** (0.0127)	0.0848*** (0.0136)	0.0446*** (0.0125)
Other backward caste	0.0918** (0.0356)	0.0584*** (0.0087)	0.0516*** (0.0118)	0.0332*** (0.0097)	0.0210* (0.0122)
Household size	-0.00936*** (0.0016)	-0.0127*** (0.0018)	-0.00755*** (0.0028)	-0.0103*** (0.0021)	-0.00860*** (0.0024)
Presence of children below 5 years old	-0.0253*** (0.0057)	-0.0444*** (0.0064)	-0.0611*** (0.0090)	-0.0581*** (0.0088)	-0.0633*** (0.0089)
Presence of elderly women	0.0349*** (0.0110)	0.0273** (0.0115)	0.0428** (0.0169)	0.0173 (0.0131)	0.0400** (0.0169)

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Partner employed					
	0.0574*** (0.0117)	0.0440*** (0.0150)	0.0411** (0.0177)	0.0404*** (0.0133)	0.0109 (0.0136)
Log (MPCE)	-0.0424*** (0.0067)	-0.0981*** (0.0089)	-0.0795*** (0.0136)	-0.0465*** (0.0113)	-0.0503*** (0.0010)
District Characteristics					
Urbanization					
Percentage of urban population	-0.0007*** (0.0002)	-0.0006*** (0.0002)	-0.0009*** (0.0003)	-0.0002 (0.0003)	0.0001 (0.0004)
Number of towns	0.0001 (0.0003)	0.0001 (0.0005)	0.0012** (0.0006)	0.0004 (0.0004)	0.0006* (0.0003)
Political participation of women					
Percentage of women voters	0.0008 (0.0006)	-0.0001 (0.0003)	0.0012 (0.0008)	0.0010 (0.0008)	0.0029*** (0.0010)
Percentage of women electoral candidates	0.0001 (0.0012)	0.0015** (0.0007)	0.0017* (0.0009)	-0.0009 (0.0012)	-0.0003 (0.0016)
Geographic Dimension (States of India) (Ref: Central India)^a					
Northern India	0.0426* (0.0220)	0.0459* (0.0258)	0.0439 (0.0305)	0.0268 (0.0301)	-0.0207 (0.0330)
Western India	0.0634*** (0.0205)	0.0948*** (0.0149)	0.1200*** (0.0232)	0.1060*** (0.0186)	0.0711*** (0.0220)
Eastern India	0.0005 (0.0218)	0.0203 (0.0250)	-0.0180 (0.0378)	-0.0053 (0.0263)	-0.0475 (0.0383)
Southern India	0.1030*** (0.0214)	0.1390*** (0.0151)	0.1320*** (0.0295)	0.1120*** (0.0257)	0.0386* (0.0302)
North Eastern India	0.1110 (0.0680)	0.0516 (0.0322)	0.0314 (0.0379)	0.0142 (0.0355)	-0.0218 (0.0437)

MPCE = monthly per capita consumption expenditure.

^aThe geographical clustering of states is available in the Online Appendix B.

Notes: The model is estimated separately for each year. *** Significant at the 1% level, ** significant at the 5% level, *

* significant at the 10% level. Standard errors in the parentheses are clustered at the district level.

Source: Authors' calculations.

Table 3. Average Marginal Effects of Gender Wage Gap on the Probability of Labor Force Participation in Pooled Cross-Sectional Analysis

Year	Unexplained Gender Wage Gap
1987/88	-0.027* (0.0137)
1999/2000	-0.003 (0.0114)
2004/05	0.001 (0.0041)
2009/10	-0.015** (0.0064)
2011/12	-0.028** (0.0098)

Notes: The marginal effects are derived from the probit regression of the female labor force participation rate on year dummies, unexplained gender wage gap, and their interactions, along with other explanatory variables, using pooled cross-sectional analysis. The test of joint significance of year dummies and interaction terms is available in the Online Appendix Table D3. *** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Standard errors in the parentheses are clustered at the district level.

Source: Authors' calculations.

Gender disparity in the southern states has traditionally remained lower than in the northern states (Munro et al. 2014, Esteve-Volart 2004). Jayachandran (2015) attributes this regional difference to the strong presence of the patrilocal system in northern India. The female labor force participation rates in the southern states are relatively higher than the national average. In contrast, the rates in the northern states are lower than the national average (Sorsa et al. 2015). For example, compared to the all-India average of 21% in 1999/2000, the participation rate was 25% in Andhra Pradesh and 14% in Uttar Pradesh.

Similarly, the rate in Kerala (42%) was much higher than the national average (26%) in 2011/12, whereas the rate in Uttarakhand (formerly Uttaranchal) was only 21%. The higher rates in the southern region are driven mainly by better educated women who prefer white collar jobs (Mathew 2015). While in the northern part, these rates are driven largely by women from lower-income families who are casually employed in less-skilled jobs (Kumari and Pandey 2012). Given the dissimilarities in the two regions of India, an explanation of the observed positive correlation between

the female labor force participation rate and the gender wage gap will require a detailed examination that is outside the purview of the paper.

The probability of labor force participation is consistently positive and significant for women with higher education. When the education level increases from illiterate to graduate, the probability of labor market entry increases by 13.2 percentage points in 1987/88 and 5.7 percentage points in 2011/12.

Domestic responsibilities, which are assessed in terms of family size and the presence of small children, have a negative impact on our dependent variable. The household work burden of women is found to be the primary reason for their quitting jobs after marriage or for not entering the labor market (Sudarshan and Bhattacharya 2009). However, the presence of an elderly woman to take care of the children and share other domestic responsibilities increases the labor force participation rate of married women. In consonance with the existing literature, an increase in family income negatively influences the labor supply decision (Sarkar, Sahoo, and Klasen 2019; Andres et al. 2017).

Compared to the general category of women, Scheduled Tribe, Scheduled Caste, and Other Backward Caste women are more likely to enter the labor market. This is because women from the upper caste are better educated but restricted from working outside the home. Sociocultural norms that govern women's autonomy to participate in the labor market are a manifestation of the patriarchal controls traditionally imposed on them, and it is linked with class and caste (Eswaran, Ramaswami, and Wadhwa 2013).

Geographically, women in the western and southern states have a significantly higher probability of participating in the labor market than those in central India. Urbanization, in terms of demographic expansion, has a negative association with the labor supply decision of women. However, it became insignificant in the later years of the review period (from 2009/10).

B. Employment Status

In the second stage, we begin with a probit model for estimating the probability of women's unemployment without correcting for the selectivity bias. The results depict that in each of the study years, the average marginal effect of the unexplained gender wage gap is statistically insignificant. The pooled cross-sectional analysis also gives similar results.¹⁵

¹⁵Detailed results are available in the Online Appendix Tables D5–D9.

To overcome the selectivity bias, we reestimate the outcome equation along with the selection equation from the first stage in a bivariate probit framework. In this model, we first include the gender wage gap in the outcome equation to examine its direct effect on the outcome variable. Its marginal effect on the unemployment probability is insignificant in all years except 1999/2000.¹⁶ This preliminary finding supports our intuitive assumption that there is no direct negative effect of the wage gap on women's employment status.

We reestimate the bivariate probit model without the unexplained wage gap in the outcome equation. This captures the discouraging effect of the wage gap on the probability of unemployment, indirectly through the probability of labor force participation. The results depict that its marginal effect is negative and statistically significant in 1987/88, 2009/10, and 2011/12 (Table 4). This implies that women are less likely to enter the labor force in districts with a bigger gender wage gap. However, the smaller share of women entering the labor force is more likely to be employed. The Wald test statistic ($\rho = 0$) rejects the null hypothesis of the absence of the sample selection problem and upholds the censored probit model's relevance in this second-stage analysis.

The discouraging effect of the wage gap on the probability of women's unemployment increased between 1987/88 and 2011/12. With a 1 percentage point increase in the wage gap, the probability of being employed decreased by 0.16% in 1987/88 and 0.29% in 2011/12. Since the wage gap did not have a discouraging effect on labor force participation in 1999/2000 and 2004/05, its indirect effect on employment status is insignificant.

We confirm the findings using a pooled cross-sectional analysis.¹⁷ The average marginal effect of the wage gap on the probability of unemployment is statistically significant in 1987/88, 2009/10, and 2011/12 (Table 5). The discouraging effect of the gender wage gap decreased from 1987/88 to 2011/12.

The association between women's age and unemployment is negative and significant. However, as the education level increases from illiterate to graduate, the probability of unemployment increases by 4.8 percentage points in 1987/88 and 6.1 percentage points in 2011/12. This finding supports the literature that the prevalence of unemployment is higher among better educated women in India (Motiram and Naraparaju 2018; Bairagya 2018). The marginal effects of MPCE, spousal employment, and the presence of small children are negative and significant. Married women from higher-income families and those with childcare responsibilities are less

¹⁶Results are not included in this paper, but will be shared if requested.

¹⁷Detailed results are available in the Online Appendix Tables D10 and D11.

Table 4. Average Marginal Effects of Explanatory Variables on the Probability of Unemployment in Bivariate Model

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Discouraged Worker Effect					
Unexplained gender wage gap	-0.0016* (0.0010)	-0.0001 (0.0014)	0.0001 (0.0007)	-0.0024* (0.0015)	-0.0029* (0.0017)
Selectivity Bias					
Wald test of independent equations ($\rho = 0$)	0.020	0.006	0.000	0.004	0.003
Probability $> \chi^2$	-0.0023*** (0.0005)	-0.0049*** (0.0007)	-0.0047*** (0.0006)	-0.0483*** (0.0074)	-0.0041*** (0.0007)
Individual Characteristics					
Age (years)					
Education level (Ref: Illiterate)					
Primary and middle	0.0047 (0.0037)	0.0244*** (0.0068)	0.0227*** (0.0067)	0.0107** (0.0051)	-0.0040 (0.0046)
Secondary and higher secondary	0.0335*** (0.0081)	0.0686*** (0.0129)	0.0863*** (0.0145)	0.0598*** (0.0117)	0.0262*** (0.0076)
Graduate and above	0.0476*** (0.0139)	0.0947*** (0.0136)	0.1106*** (0.0149)	0.0795*** (0.0157)	0.0609*** (0.0124)
Technical education	-0.0064 (0.0085)	0.0231*** (0.0069)	0.0181** (0.0091)	0.0110 (0.0104)	-0.0047 (0.0078)
Household Characteristics					
Social group (Ref: Others)					
Scheduled tribe	-0.0004 (0.0114)	-0.0195** (0.0088)	-0.0252* (0.0141)	-0.0220 (0.0147)	-0.0170* (0.0097)
Scheduled caste	0.0047 (0.0065)	-0.0076 (0.0106)	-0.0066 (0.0117)	-0.0218* (0.0125)	0.0091 (0.0126)
Other backward caste	0.0874 (0.0719)	0.0022 (0.0057)	0.0156 (0.0116)	-0.0068 (0.0098)	0.0026 (0.0080)
Household size	-0.0001 (0.0008)	0.0039*** (0.0011)	0.0010 (0.0013)	0.0010 (0.0016)	0.0041*** (0.0001)

Continued.

Table 4. *Continued.*

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Presence of children below 5 years old					
	-0.0022** (0.0011)	-0.0045*** (0.0019)	-0.0106*** (0.0027)	-0.0093** (0.0031)	-0.0071** (0.0028)
Presence of elderly women					
	0.0029** (0.0014)	0.0029 (0.0018)	0.0091* (0.0046)	0.0027 (0.0025)	0.0047 (0.0031)
Partner employed					
	-0.0410*** (0.0120)	-0.0364*** (0.0090)	-0.0462*** (0.0092)	-0.0206** (0.0084)	-0.0108 (0.0141)
Log (MPCE)					
	-0.0036** (0.0018)	-0.0101** (0.0044)	-0.0149*** (0.0042)	-0.0076** (0.0030)	-0.0057** (0.0021)
District Characteristics					
Average education level					
Percentage of individuals with at least a secondary education	0.0724** (0.0338)	-0.0367 (0.0499)	0.1753* (0.0915)	-0.0491 (0.0539)	0.0041 (0.0410)
Urbanization					
Percentage of urban population	-0.0001 (0.0001)	0.0001 (0.0001)	-0.0009*** (0.0002)	0.0002 (0.0002)	-0.0001 (0.0001)
Number of towns	0.00001 (0.00003)	0.00002 (0.0001)	0.0002* (0.0001)	0.0001 (0.0001)	0.0001 (0.0001)
Political participation of women					
Percentage of women voters	0.0003 (0.0003)	0.0006** (0.0003)	-0.0002 (0.0007)	0.0006 (0.0005)	0.0013** (0.0006)
Percentage of women electoral candidates	0.0009* (0.0005)	0.0005 (0.0004)	0.0012 (0.0008)	0.0007 (0.0010)	-0.0011 (0.0009)
Geographic Dimension (Ref: Central India)					
Northern India	-0.0056 (0.0104)	0.0068 (0.0101)	0.0329** (0.0143)	-0.0062 (0.0209)	0.0077 (0.0281)
Western India	-0.0111 (0.0082)	0.0073 (0.0067)	0.0194** (0.0074)	0.0052 (0.0150)	-0.0171 (0.0210)
Eastern India	0.0196	0.0305*	0.1209*	-0.0173	-0.0367

Variables	1987/88	1999/2000	2004/05	2009/10	2011/12
Southern India	(0.0174) 0.0083 (0.0119)	(0.0180) 0.0382*** (0.0102)	(0.0639) 0.0669*** (0.0196)	(0.0210) 0.0095 (0.0196)	(0.0254) -0.0079 (0.0290)
North Eastern India	-0.0061 (0.0125)	0.0273 (0.0166)	0.0902 (0.0645)	0.0551 (0.0592)	0.0997 (0.0814)

MPCE = monthly per capita consumption expenditure.

Notes: *** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Standard errors in the parentheses are clustered at the district level.

Source: Authors' calculations.

Table 5. Average Marginal Effects of Gender Wage Gap on the Probability of Unemployment in Pooled Cross-Sectional Analysis

Year	Unexplained Gender Wage Gap
1987/88	−0.0061* (0.0033)
1999/2000	−0.0010 (0.0021)
2004/05	0.0001 (0.0008)
2009/10	−0.0028** (0.0014)
2011/12	−0.0052** (0.0021)

Notes: The marginal effects are derived from the bivariate probit regression of the unemployment rate on year dummies, unexplained gender wage gap, and their interactions, along with other explanatory variables, using pooled cross-sectional analysis. The test of joint significance of year dummies and interaction terms is available in the Online Appendix Table D12. *** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Standard errors in the parentheses are clustered at the district level.

Source: Authors' calculations.

likely to enter the labor force. However, the smaller section entering the labor market with the above attributes are more likely to be employed.

C. Job Search

In the third stage, depending on women's employment status, we obtain results for two types of job search models.

1. On-Job Search

We first estimate the probability of on-job search using a probit model that does not take into account selectivity bias. The findings indicate that the marginal effects of the wage gap and the proportion of overqualified individuals are not statistically significant. The pooled cross-sectional analysis also gives supporting results.¹⁸

¹⁸Detailed results are available in the Online Appendix Tables D13–D17.

We reestimate the job search probability using trivariate probit, taking into account selectivity bias from stage one and two (Table 6). The likelihood ratio test confirms the presence of sample selection bias from the two previous stages. The negative coefficients for the unemployment probability imply that women with lower chances of being employed are less likely to undertake job search efforts. On the other hand, women with a higher probability of labor force participation are more likely to make job search efforts.

Table 6. Probability of On-Job Search in Triprobit Model

Variables	1999/2000	2004/05	2009/10	2011/12
Discouraged Worker Effect				
Unexplained gender wage gap	-0.185** (0.0869)	-0.016 (0.0199)	-0.162*** (0.0587)	-0.133*** (0.0455)
Proportion of overqualified employees	-9.074** (3.5680)	-1.383*** (0.5340)	-1.811* (0.9270)	-0.002 (1.2540)
Selectivity Bias				
Probability of unemployment	-5.390*** (1.0570)	-3.957*** (0.1170)	-5.822*** (0.2470)	-5.738*** (0.1670)
Probability of labor force participation	2.502*** (0.2200)	0.372*** (0.0676)	2.388*** (0.2920)	2.732*** (0.1750)
Likelihood Ratio Test				
Probability > χ^2	0.000	0.000	0.000	0.000
Individual Characteristics				
Age (years)	-0.024*** (0.0034)	-0.009*** (0.0017)	-0.039*** (0.0040)	-0.037*** (0.0040)
Education level	-0.009 (0.0316)	-0.036* (0.0204)	-0.0004 (0.0334)	0.090** (0.0353)
Job Characteristics				
Employed regularly (base = no)	-0.315*** (0.0753)	-0.259*** (0.0449)	-0.513*** (0.0886)	-0.298*** (0.0774)
Union membership (base = no)	0.034 (0.1150)	-0.194** (0.0958)	-0.071 (0.0957)	-0.250** (0.1270)
Written job contact (base = no)	NA	-0.100 (0.1040)	-0.086 (0.1380)	-0.296** (0.1410)
Employment nature (base = temporary)	-0.593*** (0.0603)	-0.283*** (0.0387)	-0.257*** (0.0654)	-0.471*** (0.0723)
SS benefit or paid leave (base = no)	-0.403*** (0.1550)	-0.362*** (0.1100)	-0.437*** (0.1380)	-0.439*** (0.1660)
Household Characteristics				
Household size	-0.051*** (0.0144)	-0.041*** (0.0067)	-0.061*** (0.0119)	-0.046*** (0.0157)
Partner employed	-0.615*** (0.0726)	-0.344*** (0.0432)	-0.403*** (0.0576)	-0.839*** (0.0780)

Continued.

Table 6. *Continued.*

Variables	1999/2000	2004/05	2009/10	2011/12
District Characteristics				
Average education level				
Percentage of individuals with at least secondary education	-1.599*** (0.3000)	-0.527*** (0.1740)	-1.387*** (0.3250)	-2.096*** (0.4990)
Urbanization				
Percentage of urban population	-0.0004 (0.0018)	-0.0019* (0.0012)	-0.0007 (0.0018)	-0.0002 (0.0010)
Political participation of women				
Percentage of women voters	-0.0148*** (0.0032)	0.00178 (0.0018)	-0.0034 (0.0037)	-0.0046 (0.0049)
Geographic dimension				
	-0.0065 (0.0288)	-0.0068 (0.0193)	-0.0115 (0.0296)	0.0437 (0.0364)

NA = not available.

Notes: The figures in the table are estimated coefficients in the trivariate probit model (not marginal effects). The results for the 43rd round of the NSS employment survey (1987/88) are not available due to nonavailability of clear information on job characteristics of employed women. *** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Standard errors in the parentheses are clustered at the district level.

Source: Authors' calculations.

Once we control for the selectivity bias, the negative influence of the poor labor market conditions on job search efforts becomes statistically significant, depicting the discouraged worker effect. In 1999/2000, 2004/05, and 2009/10, the extent of overqualified individuals in the local labor market had a negative association with on-job search efforts. The gender wage gap also had a negative effect in 1999/2000, 2009/10, and 2011/12.

The pooled cross-sectional analysis is also performed for the triprobit framework, and it confirms the presence of the discouraged worker effect. However, the magnitude of the effect decreases over time.¹⁹

With an increase in age, women are less likely to be engaged in the job search process. This may be due to a decline in their potential benefits from alternative employment opportunities (Pissarides and Wadsworth 1994). Such women may also be less willing to take on the risks of job switch-over.

The current job characteristics are the key factors for the on-job search efforts (Deluna and Berdos 2015). Women working under informal conditions—such as having no written job contract or the temporary nature of employment—are more

¹⁹Detailed results are available in the Online Appendix Tables D18–D20.

likely to invest resources in a job search. Our results show that the lack of job permanency and social security benefits reduces employed women's job search efforts.

With a rise in family size, women are less likely to engage in on-job search because of higher search costs and domestic responsibilities. If the partner is employed, women are less likely to explore alternative employment opportunities. This finding supports the literature on women's secondary earner status, where the husband is considered the "breadwinner." During uncertainty or crisis, women are expected to enter the labor market and provide monetary support to the family (Kohara 2008; Attanasio, Low, and Sánchez-Marcos 2005). A higher proportion of better educated individuals in a district is also negatively associated with on-job search efforts. This may be linked with the crowding-out effect of supply-side competition in the local labor market (Verhaest et al. 2016).

2. Off-Job Search

We begin by using a probit model for estimating the probability of off-job search without bias correction from the previous two stages. The marginal effect of the proportion of part-time employees indicates an absence of the discouraged worker effect, and the pooled cross-sectional analysis supports the results.²⁰

We reestimate the probability using trivariate probit correcting for the selectivity biases. The result confirms the presence of selectivity bias from the previous two stages (Table 7). The positive coefficient of the probability of unemployment indicates that women having a higher probability of unemployment are also more likely to make off-job search efforts. On the contrary, women with a higher probability of labor force participation are less likely to engage in an off-job search.

Once we control for the selectivity bias, the discouraged worker effect becomes visible. The coefficient of the proportion of part-time employees is negative and statistically significant in all years. This implies that unemployed women are less likely to invest their resources in a job search if they reside in districts where there is a high prevalence of NSFEE. The pooled cross-sectional analysis shows that the magnitude of the discouraged worker effect declined between 1999/2000 and 2011/12.²¹

The age of women is negatively correlated with off-job search efforts. Women with an employed partner are also less likely to incur job search costs. Local labor market competition from the rising share of better educated individuals has a negative

²⁰Detailed results are available in the Online Appendix Tables D21–D25.

²¹Detailed results are available in the Online Appendix Tables D26–D28.

Table 7. Probability of Off-Job Search in Triprobit Model

Variables	1999/2000	2004/05	2009/10	2011/12
Discouraged Worker Effect				
Proportion of part-time employees	-4.765* (2.8220)	-5.889*** (1.3750)	-4.993* (2.9500)	-4.446** (2.1230)
Selectivity Bias				
Probability of unemployment	9.845*** (0.4710)	5.933*** (1.2740)	6.946*** (1.8850)	7.363*** (1.6540)
Probability of labor force participation	-2.511*** (0.5290)	-0.777* (0.8870)	-1.681* (1.6020)	-2.464* (1.4070)
Likelihood Ratio Test				
Probability > χ^2	0.000	0.000	0.000	0.000
Individual Characteristics				
Age (years)	-0.024 (0.0146)	-0.043** (0.0169)	-0.075*** (0.0214)	-0.046** (0.0186)
Education level	-0.266** (0.1340)	0.171 (0.1160)	0.141 (0.1300)	0.307** (0.1350)
Household Characteristics				
Household size	0.013 (0.0593)	-0.007 (0.0343)	-0.082** (0.0362)	-0.005 (0.0217)
Partner employed	-0.355 (0.4280)	-0.597* (0.3060)	-0.350* (0.1830)	-1.408*** (0.3150)
Presence of married working women in family	0.416 (0.3770)	0.022 (0.2410)	0.056 (0.2780)	-0.287* (0.1540)
District Characteristics				
Average education level				
Percentage of individuals with at least secondary education	-2.445** (1.0410)	-1.186** (0.5850)	-4.530*** (1.0380)	-2.421*** (0.7380)
Urbanization				
Percentage of urban population	-0.017*** (0.0057)	-0.011** (0.0047)	-0.005* (0.0045)	-0.010** (0.0041)
Political participation of women				
Percentage of women voters	-0.047*** (0.0141)	-0.022** (0.0098)	0.009 (0.0095)	-0.006 (0.0088)
Geographic dimension				
	0.304*** (0.1110)	-0.084 (0.0936)	-0.048 (0.0959)	-0.007 (0.0855)

Notes: The figures are estimated coefficients in the trivariate probit model (not marginal effects). The results for 1987/88 are not available for the job search models due to the nonavailability of clear information on job characteristics of employed women in this initial round of NSS employment survey. *** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Standard errors in the parentheses are clustered at the district level.

Source: Authors' calculations.

effect (Blank and Gelbach 2002). Similarly, an increase in the percentage of a district's urban population tends to lower job search efforts. This may be due to the commuting problems arising from overcrowding and congestion in rapidly urbanizing areas (Alam and Ahmed 2013, Sridhar 2016).

In summary, there is clear evidence of the discouraging effect of the gender wage gap and underemployment in the local labor market on married women's job search efforts. The gender wage gap reduces on-job search efforts, whereas a rise in the proportion of overqualified workers negatively influences on-job search efforts, and an increase in part-time employment reduces off-job search efforts.

V. Discussion

The results support our underlying hypothesis that the discouraged worker effect imposed by poor local labor market conditions has a significantly negative influence on the labor supply and job search decisions of urban married women.

The unexplained gender wage gap discourages women from entering the labor force. It also has a negative impact on the job search efforts of employed women. Thus, the low and stagnant labor force participation rate of married women in India may partly be explained by their anticipation of gender bias in the local labor market.

However, this unexplained component of the wage gap may be overestimated or underestimated due to the omission of the variables (or characteristics) that differ between married women and men but are not observable (Chevalier 2007). Unlike men, women's motivation and expectations behind their labor force participation and job search efforts are linked with their secondary-earner status and the gendered division of labor at home (Polachek and Xiang 2014). Their choice of job and occupation, effort and time devoted to paid employment, and search process may all be driven by compatibility with family and childcare responsibilities. They often drop out of the labor force for childbearing or other domestic constraints, resulting in intermittent periods of work and nonwork over their lifetime (Blau and Kahn 2017). This discontinuity may influence the gender wage gap.

The prevalence of underemployment in the form of overqualified individuals in the local labor market is also an important factor that is found to discourage employed women from making job change efforts. Another key finding is that unemployed women are less likely to invest their resources in a job search if they are residing in districts where a large section of individuals are underemployed.

The presence of selectivity bias in our models helps us to conclude that at the very initial stage, women may anticipate a gender wage gap and underemployment in the local labor market, and therefore restrict themselves from entering the labor force, thus avoiding the subsequent risks of unemployment and job search efforts.

Moreover, an increase in age reduces the likelihood of women being unemployed and searching for jobs. But a rise in education level enhances the probability of unemployment for women. On the domestic front, women from higher-income families and better sociocultural status continue to face patriarchal restrictions in their labor force participation. Due to the same reason, women with an employed spouse are less likely to incur job search costs.

Besides, district-level characteristics also have a significant influence on the labor market behavior of women. The increase in competition due to a rise in the percentage of the working-age population with at least a secondary education adversely affects the probability of on-job and off-job search efforts among married women. Similarly, an increase in the proportion of the urban population has a negative influence on the labor supply as well as the job search decisions of unemployed women.

VI. Conclusion

In this paper, we tried to extend our understanding of the factors associated with the low and stagnant female labor force participation rate in India by exploring the importance of local labor market conditions in influencing women's labor market behavior. Spatial restrictions on the mobility of married women limit their labor supply and job search decisions to the opportunities available in the district or regional labor market. Hence, macrolevel factors, in addition to individual and household characteristics, may better explain female labor force trends.

Given limited access to job opportunities, poor local labor market conditions may discourage women from entering the labor force, making job search efforts, or taking the risk of switching to better jobs. This paper provides empirical support to the phenomenon by testing for the presence of a discouraged worker effect arising from the gender wage gap and underemployment in the local labor market.

We may conclude that the possibility of discriminatory treatment against female employees, particularly in terms of remuneration and wages paid to them, is a significant factor negatively influencing their labor supply decisions. Besides, a shortage of appropriate job opportunities in the local labor market, visible in the form

of overqualified employees and nonstandard employment, has a discouraging impact on female labor market behavior.

From a policy perspective, efforts aimed at enhancing the mobility of urban women through the availability of affordable, safe, and fast means of public transport may help reduce their spatial restrictions in accessing labor market opportunities. Removing gender bias in the labor market and generating secure formal jobs suitable for optimally utilizing educated women's skills and expertise constitutes a long-term sustainable solution to India's female labor market problems.

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