It Takes a Village: Childcare and Women's Paid Employment in India

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Why is maternal employment higher in rural than in urban India? Among the relevant supply-side factors, previous research has emphasized that rural work is more compatible with childcare. Results from the Indian Time Use Survey of 2019 show that hours of active maternal childcare are only slightly lower in rural areas, but the temporal and spatial flexibility of paid employment is much greater, making it easier for mothers to accommodate childcare responsibilities. In particular, rural women's work affords them greater access to flexible hours and the ability to work in close proximity to the home. Consequently, the negative effects of motherhood on employment are significantly greater for urban women than for rural women. This finding cannot be explained by rural–urban differences in household structure or resource constraints. These results redirect attention from average levels of time use towards a more nuanced analysis of sequence, timing, and opportunities for joint production or multitasking.

Introduction

Previous research has highlighted how lower fertility in urban contexts can be attributed to the greater cost of raising children in urban relative to rural settings (Martine, Alves, and Cavenaghi 2013). However, the lack of suitable data has made it difficult to ascertain the specific factors contributing to differences in this cost. The Indian Time Use Survey of 2019 provides a unique opportunity to address this issue. I use these newly available data to investigate an important aspect of the cost of raising children: the trade-off between women's paid work and unpaid childcare responsibilities after motherhood. I show that rural women's work, concentrated in informal sector employment and unpaid production for household use, affords them a greater ability to work flexible hours and to work at (or in close proximity to) their home or in their own production units, allowing for the joint production of paid work and childcare. I then demonstrate that children have

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greater negative effects on the employment of urban women, compared to rural women. Importantly, rural–urban differences in household resource constraints or the availability of nonmaternal care (such as the incidence of extended households) do not explain the greater extent to which rural mothers combine employment and childcare.

Work–family conflicts carry important implications for women's decisions to participate in marriage or childbearing. While establishing a causal relation between the employment costs of children and fertility behavior is beyond the scope of this paper, the effect of gender inequity in family institutions—when combined with labor market institutions that reward market production over unpaid care—has been argued to reduce fertility in various developed and developing countries (Folbre 1983; McDonald 2000; Brinton and Oh 2019). This paper offers a new interpretation of the "maternal role incompatibility" theory advanced decades ago, with implications for the design of work–family policy in both developing and affluent nations.

Early sociological research on "maternal role incompatibility" framed the conflict between women's employment and raising children as central to understanding variations in employment–fertility relationships (Jaffe and Azumi 1960; Stycos and Weller 1967; Weller 1968). In the absence of reliable time use data, these claims remained speculative and difficult to substantiate. This paper builds on Donahoe's (1999) recognition that time use data could help reveal the specific mechanisms underlying differences in the cost of children. I show that rural employment is characterized by greater compatibility with childcare in two dimensions: temporal (as measured by the incidence of reduced hours and part-time work) and spatial (working at, or in proximity to, the home or at one's own unit). The ability to interrupt or reduce work hours allows mothers to perform active childcare tasks (such as feeding, bathing, or accompanying children) during the working day. On the other hand, supervising or being "responsible" for children while engaging in paid work is possible only if mothers work at home or can bring their children to the workplace.

Through a comparison of married childless women and married women who have just had their first child, I demonstrate that children have greater negative effects on participation and time spent in paid work for urban women, compared to rural women. In particular, if motherhood had the same impact on urban women's participation that it does on rural women, participation among urban mothers would be roughly 35 percent higher than it currently is. A substantial portion of this difference can be explained by the fact that urban women are more likely to be in formal sector jobs, where motherhood has the greatest disruptive effect, and less likely to be in informal sector employment or engage in unpaid production of goods for household use.

At first glance, time use patterns of active childcare do not seem to support the role incompatibility hypothesis: differences in active childcare

time between nonemployed and employed mothers during working hours are small, in both rural and urban contexts. However, building on time use research that shows that overseeing children consumes far more time and has stronger associations with declines in maternal employment than direct care activities (Bianchi 2000; Folbre and Yoon 2007), I argue that the ability to combine supervisory childcare with paid work is central to explaining why rural women are able to continue in paid employment after the birth of children. My focus on the availability of home-based work for rural women and its implications for maternal employment in this paper demonstrates the usefulness of attention to circumstances that facilitate the joint performance of paid work and childcare.

Combining childcare and paid work

An extensive demographic literature documents systematic rural–urban fertility differentials: in particular, urbanization is associated with fertility decline (Martine, Alves, and Cavenaghi 2013; Lerch 2019). While the direct role of urbanization in fertility decline is debated, early sociological research advanced the maternal role incompatibility hypothesis as an explanation for rural–urban variations in employment–fertility relationships (Jaffe and Azumi 1960; Stycos and Weller 1967; Weller 1968).[1] Key determinants of the conflict between female employment and raising children include the social organization of production—the possibility of incorporating childcare tasks with a paid job (such as work in a household enterprise)—and the social organization of childcare—the availability of parental surrogates in the form of relatives or friends, or domestic servants (Stycos and Weller 1967). With associated declines in household-based employment and extended-kin households, urbanization arguably intensifies trade-offs between paid work participation and raising children along both dimensions: the rural–urban dichotomy is often used as a proxy for role incompatibility (Concepcion 1974). Newer research has focused on the apparent reversal of employment–fertility relationships: countries that have adopted work–family policies see greater fertility and higher levels of women's employment (Brewster and Rindfuss 2000; Engelhardt and Prskawetz 2004; Billingsley and Ferrarini 2014). However, much of this research has focused on wealthy, industrialized, countries, with limited relevance to developing countries such as India where concerns over maternal employment are less likely to guide policy (Palriwala and Neetha 2011).[2]

Critiques of the early role compatibility literature emphasized the incomplete measurement of women's productive lives (Donahoe 1999), the absence of empirical analysis of the mechanisms connecting fertility and maternal employment (Isvan 1991), and a lack of attention to causality—in particular, that continuing maternal employment among poorer families reflects household resource constraints (Mason and Palan 1981; Korinek

2004) or low female autonomy (Isvan 1991) rather than "role compatibility." However, they echoed the broader argument that urban wage work intensifies trade-offs between paid work and unpaid childcare, compared to rural household-based employment: Short et al. (2002) demonstrate that, for mothers in China, wage work is the least compatible with childcare. More recently, Bongaarts, Blanc, and McCarthy (2019) find that the negative relationship between employment and children at home is the greatest for modern occupations and the smallest for traditional occupations.

Many of the studies discussed earlier use traditional labor force surveys to measure employment and work, which account very poorly for women's economic lives. In the case of India, Hirway and Jose (2011) argue that time use surveys lead to improved estimates of women's work relative to labor force surveys, particularly in terms of capturing informal employment and subsistence production. The importance of accounting fully for women's economic contributions is demonstrated by Donahoe (1999), who uses time use data to extend the category of productive work (beyond conventionally defined labor participation), thereby revealing new aspects to the relationship between women's work and fertility decisions. However, a limitation to using time diary surveys to understand connections between maternal employment and childcare is that they typically focus on activities rather than constraints on responsibilities; care, in particular, often involves joint production or "multitasking" and entails responsibilities such as being "on-call" or supervising a child (Budig and Folbre 2004). Studies find that maternal employment is associated with a relatively small reduction in active childcare time (Bianchi 2000). Further, the extent of differences in active childcare time across employment and nonemployment, or types of employment, is often used to infer the degree of compatibility between employment and childrearing (Ho 1979; Desai and Jain 1994; Short et al. 2002). This approach is incomplete. Folbre and Yoon (2007) highlight the importance of supervisory care for maternal employment—however, the lack of consensus regarding ways to measure such constraints also means that few have examined the role of supervisory childcare requirements in inhibiting maternal employment.

The extent of compatibility between women's employment and childcare has also been a central theme in the demographic literature concerned with variations in fertility in postindustrial countries. As expressed in gender equity theory, if institutions that open up new education and employment opportunities for women are not combined with (family-oriented) institutions that support these women when they become mothers, many women may opt to forego marriage and childbearing (McDonald 2000). In particular, the incompatibility between paid work and childcare is reduced by greater gender equity within households and greater contributions by men to household labor. However, very little research on household gender

equity and fertility has studied the role of labor market structures in mediating work–family conflicts in developing countries.

Despite empirical findings that highlight that motherhood effects on employment differ systematically across developed and developing countries (Aaronson et al. 2017), recent work on workplace flexibility for mothers in developing countries is scarce. The relationship between the work environment and women's labor market outcomes has been an increasingly important avenue of investigation in the applied microeconomic literature (see Cortés and Pan 2020 for a review), but existing studies are located primarily in developed countries. Moreover, while these microeconometric studies have stressed the role of temporal constraints (the lack of access to part-time employment, as well as the inability to work nonstandard hours) in mediating motherhood employment effects (Herr and Wolfram 2012; Goldin 2014; Cubas, Juhn, and Silos 2019), studies examining the importance of home-based work or self-employment are fewer (Edwards and Field-Hendrey 2002; Lim 2019).

Researchers have argued that motherhood is associated with a greater likelihood of informal sector work, resulting in low wages and fewer social protections (Villanueva and Lin 2020; Berniell et al. 2021). However, none have studied the specific mechanisms by which informal work allows mothers to combine childcare with income-earning activity. Rural–urban heterogeneity in trade-offs between women's employment and childcare in developing countries has been mentioned in passing, but has not been systematically investigated in recent empirical work. For example, Jia and Dong (2013) restrict their estimation of the wage penalty associated with motherhood exclusively to urban women in China, stating that "most married women in rural villages work primarily on family farms and it is easier for mothers to combine work with childcare under self-employment than under wage employment" (Jia and Dong 2013, p. 825). Of the few studies focusing on children's and women's employment market outcomes in India, Sudarshan and Bhattacharya (2009) and Das and Zumbyte (2017) also restrict their analysis to urban areas. My paper contributes to this small but growing literature by investigating the employment costs of children across rural and urban contexts in India. I use time use data to examine how these costs are mediated by differences in the type of work, redirecting attention from average levels of active childcare time, towards an analysis of sequence, timing, and opportunities for the joint production of paid work and child supervision.

Data and measures

India's first nationally representative time use survey (ITUS) in 2019 surveyed all persons aged 6 or above in 138,799 households (447,250 individuals), following a time diary approach covering the 24 hours before 4 AM

on the day of the interview (MOSPI 2020).[3] Activities were recorded for 30-minute slots and were later coded into 165 distinct categories, following the three-digit codes specified in the 2016 International Classification of Activities for Time Use Statistics (ICATUS). In the case of multiple activities in the same slot, all activities that were performed for at least 10 minutes were recorded, and respondents were instructed to pick the "major" activity.[4] The survey report suggests two criteria to calculate time spent: the first allots the entire duration of time in a slot to the major activity, while the second allots the duration of a time slot equally among the different activities performed in that slot. I use the first (more conservative) method for my main results, but show that time spent on paid and unpaid work is similar using the second criteria (online Appendix Tables A.2 and B.1) and that my main results are not changed (and are in fact strengthened) by the use of the second method (online Appendix Table B.2): the main secondary activity reported in the ITUS was "socializing," and this is the only category that registers any increase when secondary activities are included. Further details on the treatment of the data can be found in online Appendix A in the Supporting Information.

System of National Accounts work. Following the 2008 System of National Accounts (SNA) production boundary, I define the broad category of SNA work as the production of goods and services for the market, as well as the production of goods for their own final use (henceforth referred to as own-use production for brevity). This is more restrictive than the recent redefinition of work which includes the production of services for own consumption (housework) (International Conference of Labour Statisticians [ICLS] 2013) but is also more expansive than Indian labor force statistics which mostly exclude own-use production in their definition of labor force participation (Hirway 2009). I therefore estimate all my results separately for paid work and own-use production.

Time spent on SNA work is measured as the total hours spent on all activities classified under the major divisions of "employment and related activities" and "production of goods for own final use," on the diary day (detailed codes listed in online Appendix Table A.1). I divide SNA work into three broad categories: "own-use production," "informal sector employment," and "formal sector employment." The latter comprises all time spent in employment in corporations, government, and nonprofit institutions.[5] "Informal sector employment" consists of activities related to employment in household enterprises to produce goods or provide services.[6] Breaks and commuting related to paid employment are work-related time costs and so rather than treating them as a separate analytical category, I assign time spent in these activities to either the formal or informal sector employment time, depending on which of the two categories an individual spends the most time on. Own-use production includes activities such as growing crops

or gathering wild products for household consumption and making or processing household goods, and travel related to these activities.

SNA work participation. I define participation in SNA work as a dummy variable that equals one if an individual spends nonzero time in SNA work during the diary day. Participation in formal and informal sector employment and own-use production are defined analogously.

Domestic services, childcare, and unpaid work. My categories of unpaid domestic services (housework) and childcare broadly follow the ICATUS divisions (online Appendix Table A.1). Domestic services include preparing meals, cleaning, laundry, shopping, and household management. Childcare includes the physical care of children (feeding, cleaning), medical care, instruction (teaching, training, talking with, reading to, or playing with children), minding children, meetings with schools and childcare providers, and accompanying own children. I discuss the constraints associated with measuring supervisory childcare in the next section, showing that even though the ITUS includes the activity code "minding children," the time reported for this code is miniscule; therefore, childcare, as measured in the ITUS, is effectively *active* childcare. Unpaid work is the sum of housework, childcare, and care for other family members.

Parenthood. The ITUS does not directly indicate parent–child or spousal relationships within the household, but I follow the Integrated Public Use Microdata Series (IPUMS) algorithm to match parents to their children and spouses to each other using the "relationship to household head" variable (Sobek and Kennedy 2010) (note that while time diaries were administered only to those aged 6 or above, demographic information was collected for all members of the household). To impose conservative restrictions on the possibility of incorrect matching, when I estimate the effects of motherhood on time allocation, I restrict my sample to women who are either household heads, spouse of household heads, married children of household heads, and their spouses (they constitute 97 percent of the overall sample of women); these women can be matched with certainty to their children within the household.

Other covariates. I measure the highest educational attainment using eight dummy variables indicating no schooling, less than primary school completed, primary school completed, middle school completed, secondary school completed, higher secondary completed, college graduate, and postgraduate or higher. Caste is one of the principal categories for exclusion and differentiation in Indian society and I use the four broad administrative categories available in the dataset: scheduled castes (SC), scheduled tribes (ST), other backward classes (OBC), and "others," a residual category that roughly contains dominant/privileged castes. Household composition is roughly proxied by six binary variables indicating the presence of an adult (20–64) man or woman, elderly (65+) man or woman, and teenage (13–19) boy or girl.[7] Usual monthly household expenditure is as defined

by the ITUS: the sum of usual household purchases in a month, the imputed value of consumption from own-use production and wages in kind in a month, and annual expenditures on household durables in the previous year (divided by 12).

Paid work compatibility with childcare in India

Before turning to the estimation of the employment effects of motherhood for rural and urban women, I investigate differences in rural and urban work environments and assess their compatibility with both active and supervisory childcare, focusing on two dimensions: temporal compatibility and spatial compatibility. I examine two aspects of the temporal compatibility of work: the ability to cut hours of work or work part-time schedules, and the ability to interrupt employment with unpaid care. Spatial compatibility relates to the proximity of the workplace to the home or the ability to bring children to the workplace. Performing childcare tasks (such as feeding, bathing, or accompanying children) during the working day necessitates the ability to interrupt or reduce work hours (temporal compatibility). On the other hand, supervising or being "responsible" for children *while* engaging in paid work is possible only if mothers work at home or can bring their children to the workplace. If existing work opportunities are incompatible in either or both dimensions—and if nonmaternal substitutes for childcare do not exist—mothers may be forced to drop out of employment altogether. I examine rural–urban differences in temporal and spatial compatibility along the three broad categories of work defined in the previous section: formal sector employment, informal sector employment, and own-use production.

Temporal compatibility

To proxy for the availability of part-time work, I look at the distribution of work time among employed women and men between the ages of 18–55, using the 2019 ITUS.[8] Employment status is determined based on whether the individual was engaged in paid work for the major part of the previous year.[9] Both rural employed women and men work about an hour less than their urban counterparts, and are significantly less likely to work full-time (defined as working more than 35 hours per week, or at least 7 hours per day on weekdays): 48 percent for rural women compared to 64 percent for urban women, and 76 percent for rural men compared to 90 percent for urban men (Table 1).

The greater ability to work part-time in rural labor markets appears to be related both to the higher incidence of types of work that allow for such flexibility (such as informal sector employment and production for own final use), as well as the greater flexibility of rural work within the broad categories of formal and informal sector employment. Panels A–D of Table 1

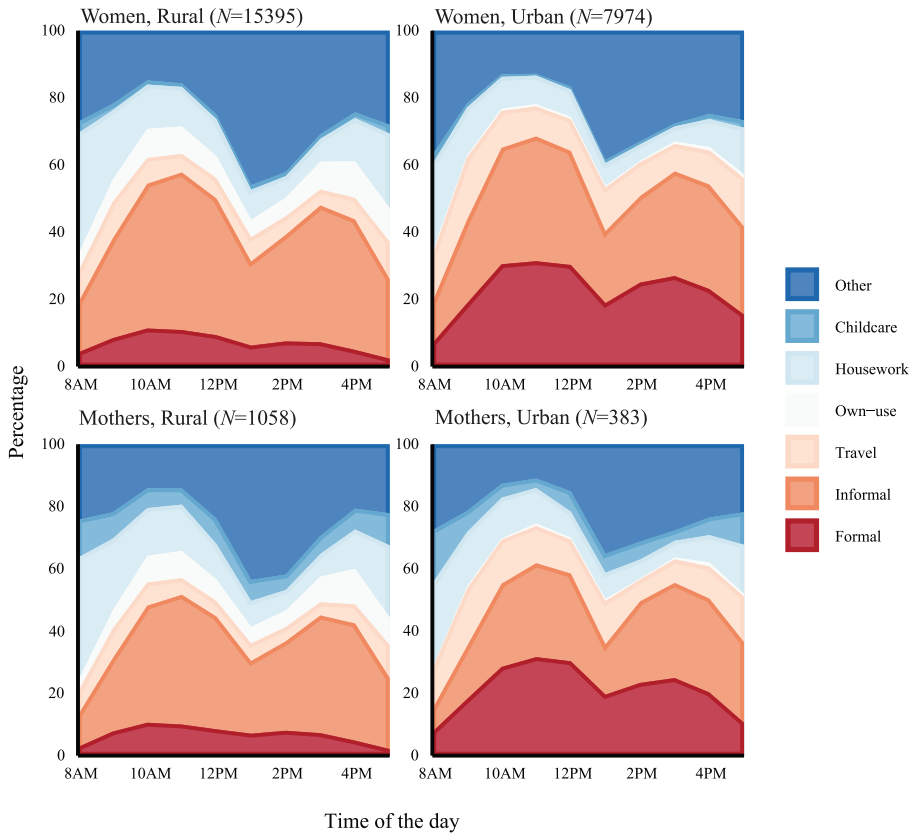
TABLE 1 Characteristics of SNA work time for employed workers

	Women		Men	
	Rural	Urban	Rural	Urban
SNA work time (hours/day)				
Mean	6.21	7.34	8.07	9.30
Fraction with SNA time				
Less than 4 hours/day	0.18	0.10	0.06	0.02
7+ hours/day	0.48	0.64	0.76	0.90
Conditional time, by category				
A. Formal (regular/salaried)				
Participation (time >0)	0.10	0.40	0.08	0.33
Mean, conditional on participation	6.87	8.15	8.84	9.51
Fraction with time >0 and <4 hours/day	0.08	0.03	0.03	0.02
Fraction with time 7+ hours/day	0.53	0.77	0.84	0.92
B. Informal (wage)				
Participation (time>0)	0.36	0.33	0.42	0.32
Mean, conditional on participation	6.17	6.99	7.30	8.21
Fraction with time >0 and <4 hours/day	0.19	0.14	0.16	0.13
Fraction with time 7+ hours/day	0.56	0.62	0.73	0.81
C. Informal (self-employed)				
Participation (time>0)	0.33	0.22	0.36	0.28
Mean, conditional on participation	5.68	5.96	7.59	9.15
Fraction with time >0 and <4 hours/day	0.23	0.22	0.07	0.02
Fraction with time 7+ hours/day	0.35	0.38	0.67	0.86
D. Own-use production				
Participation (time>0)	0.37	0.09	0.24	0.04
Mean, conditional on participation	2.61	1.24	3.67	2.64
Fraction with time >0 and <4 hours/day	0.73	0.93	0.58	0.74
Fraction with time 7+ hours/day	0.09	0.02	0.19	0.15
Observations (in thousands)	15.39	7.97	51.08	33.65
Share of sample in all 18–55 persons	0.26	0.21	0.87	0.83

SOURCE: ITUS 2019, weekday diaries of individuals aged 18–55, employed the previous year.

show the distribution of hours dedicated to particular types of work: formal, informal (wage), informal (self-employed), and own-use production, conditional on engaging in positive hours of work in that category.[10] Across groups of workers, conditional hours worked are the highest in (regular) formal sector work, followed by informal sector wage employment, and then informal sector self-employment, and the least in own-use production. This is consistent with our expectation that informal sector employment—particularly self-employment—and own-use production would allow for fewer hours of work compared to regular formal sector employment. Both urban women and men are considerably more likely to participate in (regular) formal sector work, and less likely to participate in informal sector wages or self-employment or production for their own use than their rural counterparts.

FIGURE 1 Time allocation during the working day for employed women



SOURCE: ITUS 2019, weekday diaries of all women aged 18–55, employed in the previous year. The bottom panel is further restricted to mothers (aged 18–30) with a child under 6.

Another aspect of temporal compatibility is the ability to interrupt work or to work less during standard work hours (such as the 8 AM to 5 PM window),[11] in order to provide childcare (Cubas, Juhn, and Silos 2019). Childcare provided outside of working hours may not be a perfect substitute for childcare requirements during the working day—this might be the case for certain types of active childcare such as feeding. The top panel of Figure 1 shows how rural and urban employed women allocate their day between 8 AM to 5 PM on weekdays. Employed urban women do about 12 percent more SNA work in this window (which is not surprising considering that they spend more time on SNA work, overall), and less unpaid work (1 hour vs. 1.4 hours).[12] The bottom panel of Figure 1 narrows the sample of women to young married mothers with children under six: employed rural mothers also spend less time on SNA work and more time on unpaid work. However, rural–urban differences for this subset are small. In particular, differences in childcare time (effectively *active* childcare, as time

spent "minding children" is negligible in the ITUS) are minor: employed rural mothers spend only about 4 minutes more on childcare between 8 AM to 5 PM than employed urban mothers (0.65 vs. 0.59 hours) (Table 2).[13] Disaggregating by type of employment reveals the expected gradient—mothers in formal employment do the least childcare, followed by informal wage workers, while the informal self-employed and those in own-use production do more. However, even these differences are not very large: for example, rural mothers in informal self-employment spend only about 24 minutes more on childcare between 8 AM to 5 PM than those in formal employment.

As issues of sequence are crucial to the argument, I have decomposed average hours of childcare performed from 8 AM to 5 PM on weekdays in Table 2 into the average number of episodes of childcare occurring during this window and the average duration of an episode. As we would expect, for both rural and urban mothers, the average number of childcare episodes is the highest for women in own-use production, followed by informal self-employment, informal wage employment, and finally formal employment. Driven by the differences in the composition of employment, the average number of episodes of childcare activities performed between 8 AM and 5 PM is slightly higher for employed rural women than for employed urban women (0.88 vs. 0.84). But the rural–urban difference, again, is not very large. It does not seem to be the case, therefore, that similar average hours of childcare conceal the greater ability of rural employed women to split and intersperse these hours more frequently during paid work hours.

Compounding the puzzle, *nonemployed* mothers do not perform very much more childcare than employed mothers during regular working hours: rural nonemployed mothers spend about 46 minutes more than their employed counterparts, while the difference for urban mothers is 57 minutes (Table 2).[14] These differences are consistent with our expectation that employment—particularly urban employment—reduces the possibility of performing childcare. However, the relatively small difference in childcare—urban employment reduces childcare time between 8 AM to 5 PM by about 11 minutes more than does rural employment—suggests that the ability to reduce or interrupt paid work hours in order to perform (active) childcare tasks does not play a significant role in explaining why rural mothers are better able to combine employment and childcare. Rather, as I argue in the subsequent sections, it is the ability to supervise children in the context of home-based employment that plays a key role in shaping the compatibility of rural work with childcare.

Spatial compatibility and supervisory care

Research has shown that overseeing children consumes far more time—and constrains maternal employment to a greater extent—than direct care activities (Folbre and Yoon 2007). Unfortunately, supervisory care is not

TABLE 2 Women's unpaid work between 8 AM to 5 PM on weekdays

	Unpaid work		Active childcare	
	Rural	Urban	Rural	Urban
A. All women, 18–55				
Average hours				
Employed	1.43	1.03	0.15	0.10
Formal	0.83	0.51	0.09	0.07
Informal (wage)	0.79	0.90	0.07	0.08
Informal (self-employed)	1.69	1.90	0.16	0.18
Own-use production	1.91	1.84	0.21	0.13
Not employed	3.46	3.36	0.53	0.47
Average number of episodes				
Employed	1.87	1.34	0.20	0.14
Formal	1.06	0.71	0.11	0.10
Informal (wage)	1.16	1.21	0.11	0.11
Informal (self-employed)	2.25	2.42	0.23	0.25
Own-use production	2.40	2.39	0.27	0.18
Not employed	3.91	3.78	0.61	0.55
Average episode duration				
Employed	0.78	0.78	0.76	0.74
Formal	0.76	0.73	0.79	0.77
Informal (wage)	0.70	0.76	0.66	0.73
Informal (self-employed)	0.77	0.82	0.72	0.70
Own-use production	0.81	0.81	0.80	0.78
Not employed	0.95	0.96	0.91	0.91
B. Mothers, 18–30, child under 6				
Average hours				
Employed	2.05	1.66	0.65	0.59
Formal	0.82	0.93	0.33	0.37
Informal (wage)	1.16	1.46	0.37	0.51
Informal (self-employed)	2.26	2.99	0.73	0.93
Own-use production	2.69	2.91	0.82	1.06
Not employed	4.43	4.51	1.41	1.54
Average number of episodes				
Employed	2.72	2.22	0.88	0.84
Formal	1.17	1.31	0.46	0.56
Informal (wage)	1.71	2.00	0.58	0.75
Informal (self-employed)	3.03	3.84	1.01	1.31
Own-use production	3.45	3.94	1.06	1.50
Not employed	5.08	5.14	1.62	1.76
Average episode duration				
Employed	0.77	0.77	0.75	0.70
Formal	0.73	0.75	0.74	0.69
Informal (wage)	0.70	0.72	0.68	0.66
Informal (self-employed)	0.77	0.82	0.72	0.71
Own-use production	0.80	0.71	0.80	0.75
Not employed	0.94	0.95	0.91	0.92

NOTE: Averages pertain to activities between 8 AM to 5 PM on the diary day. The number of episodes refers to the number of distinct slots of time devoted to an activity; average hours will equal the product of the average number of episodes and the average episode duration (subject to rounding error).
SOURCE: ITUS 2019, weekday diaries of women aged 18–55. Panel B is further restricted to mothers (aged 18–30) with a child under 6.

measured in the ITUS. The inclusion of "minding children" among the activity codes should ideally capture supervisory responsibilities; however, the nature of supervisory care as a background responsibility seems to result in negligible reportage of supervision as an "activity." Reported time spent on "minding children" in the ITUS, for example, is negligible, implying massive deficits in supervisory care (see online Appendix Table B.3), similar to results from time-use surveys from other developing countries (Folbre 2021).[15] Reported childcare is largely unchanged even when nonmajor/secondary activities are included (see online Appendix Tables A.2 and B.1), as again such reporting—even when related to simultaneous tasks—primes respondents to think of "activities" rather than background constraints such as supervisory care.

In general, the failure of time diaries to capture supervisory childcare in the absence of specific prompts should be understood as a problem inherent to the survey design of time diaries rather than misreporting: diaries typically focus on activities rather than constraints or responsibilities—supervision or on-call responsibility for children often takes the form of background activity, and many respondents may not construe it as an activity at all (Budig and Folbre 2004; Folbre 2021). The failure of time diaries to elicit information on supervisory care can be redressed by the inclusion of specific prompts, as the experience of the Australian and American time use surveys has shown (Folbre 2021), but this was not a feature included in the ITUS. The ITUS also does not record information on the contextual variable "with whom" (information on whom a person was with while performing an activity) that might proxy for supervision. Therefore, I rely on indirect evidence to assess how different types of paid work constrain women's ability to be "on call" or to supervise their children.

Spatial constraints may affect the ease with which women may combine paid work and childcare responsibilities: with shorter commutes, mothers may find it easier to return home to perform either regular or unforeseen childcare tasks; in the case where the workplace is the home, mothers may be able to supervise children as they engage in paid work. Urban employed women spend about 40 percent more time on commuting to work than rural employed women.[16] The Indian Census of 2011 shows that among nonagricultural, nonhousehold workers, urban women travel greater distances from their home to their workplace: about 4.7 kilometers, compared to 2.8 kilometers for rural women (detailed in online Appendix Table B.4).[17] About 55 percent of these rural women workers report that they do not have to travel to their workplace (implying that their workplace is located within, or in close proximity, to their place of residence), compared to 35 percent of urban women workers. Assuming that neither cultivators nor household industry workers travel a significant distance to work, and agricultural laborers travel similar distances to other workers in the same region, the fraction of all workers who do not travel is almost

twice as high for rural women than it is for urban women (81 percent vs. 41 percent).[18]

Commuting distance captures only one aspect of spatial compatibility. For instance, two workplaces, equally distant from an employee's home, may have different implications for her ability to supervise her child if one is a large office with multiple employees and the other is a workshop that she owns and operates herself.[19] The census tables also do not allow for disaggregation of distances by formal and informal workers. The 2011–2012 Employment and Unemployment round of the National Employment Survey allows us to get more granular information about the nature of the workplace (though, like the census, it excludes workers producing goods for their own final use, consistent with the general exclusion of production for own use from definitions of economic activity).[20] I am particularly interested in the fraction of employed whose workplace location is either their own dwelling or their own unit separate from the dwelling—such as their own enterprise, office, or shop (assuming that mothers are able to have their children with them in both locations).[21] Both categories would be amenable to supervising children or being "on-call" while engaging in other work. At the other extreme is the workplace location being the employer's enterprise, with little or no possibility of bringing children along.

Rural women are more likely to work in their own unit or dwelling (52 percent vs. 34 percent for urban women, Table 3). Differences across types of employment are striking.[22] For both rural and urban women, nearly all of the formal sector employment occurs in the employer's unit that is not located within the employer's dwelling. The workplace location for informal sector wage work varies: for rural women it does not have a fixed location (reflecting the predominance of agricultural wage labor), while for urban women it occurs either at the employers' dwelling (such as paid domestic work) or at the employer's unit (such as informal sector jobs in education, health, or personal services). However, most of the self-employed in the informal sector (in which rural women and men are heavily overrepresented) work either at their own dwelling or at their own unit away from the dwelling. The greater incidence of informal sector employment—particularly informal self-employment—among rural women, therefore, helps explain why they are more likely to engage in home-based or own-unit paid work.

A typology of work environments

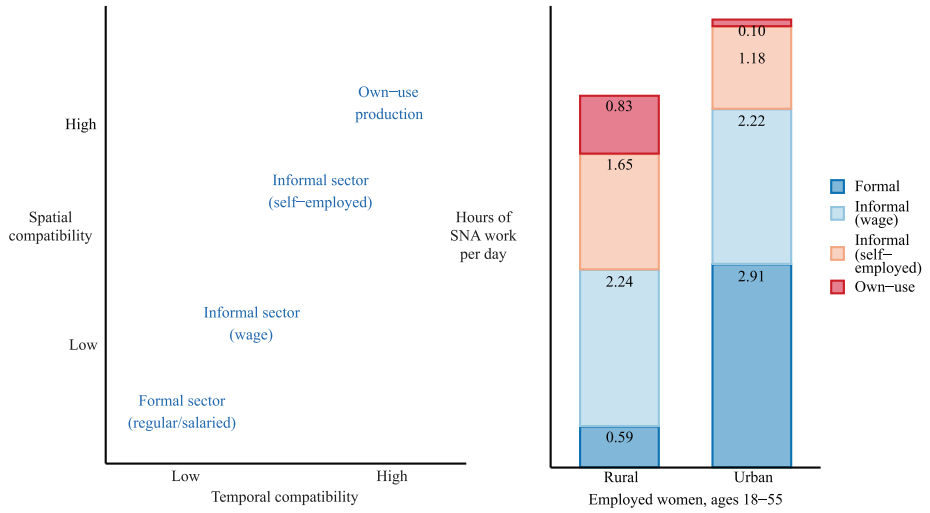
Figure 2 illustrates the temporal and spatial constraints associated with different types of work, sorting work environments on the basis of how compatible they are with active and supervisory childcare. Formal sector employment is associated with a high degree of temporal inflexibility: the incidence of part-time employment is low, and the average hours

TABLE 3 Workplace characteristics of employed workers, NSS-EUS 2012

	Women		Men	
	Rural	Urban	Rural	Urban
Location of workplace				
Own dwelling	0.12	0.25	0.06	0.10
Own unit away from dwelling	0.40	0.09	0.43	0.21
Employer's dwelling	0.01	0.13	0.01	0.03
Employer's enterprise not in dwelling	0.11	0.41	0.13	0.45
Street or construction site	0.03	0.05	0.12	0.11
No fixed location	0.32	0.07	0.25	0.12
A. Formal sector employment				
Fraction	0.07	0.26	0.07	0.24
Location of workplace				
Own dwelling	0.00	0.01	0.00	0.01
Own unit away from dwelling	0.00	0.01	0.00	0.01
Employer's dwelling	0.00	0.01	0.01	0.01
Employer's unit (not in dwelling)	0.98	0.97	0.92	0.94
Street or construction site	0.02	0.01	0.04	0.02
No fixed location	0.00	0.00	0.02	0.01
B. Informal (self-employment)				
Fraction	0.53	0.37	0.54	0.42
Location of workplace				
Own dwelling	0.22	0.66	0.11	0.22
Own unit away from dwelling	0.75	0.22	0.78	0.48
Employer's dwelling	0.00	0.01	0.00	0.01
Employer's enterprise not in dwelling	0.00	0.01	0.01	0.04
Street or construction site	0.01	0.03	0.04	0.09
No fixed location	0.02	0.07	0.06	0.17
C. Informal (wage)				
Fraction	0.40	0.38	0.39	0.34
Location of workplace				
Own dwelling	0.01	0.02	0.01	0.01
Own unit away from dwelling	0.00	0.01	0.00	0.02
Employer's dwelling	0.03	0.33	0.02	0.06
Employer's enterprise not in dwelling	0.11	0.42	0.17	0.60
Street or construction site	0.07	0.09	0.24	0.19
No fixed location	0.78	0.13	0.56	0.12
Observations (in thousands)	23.41	10.75	76.32	47.85
Agricultural share in employed	0.70	0.07	0.57	0.04
Share of sample in all 18–55 persons	0.28	0.19	0.89	0.85

NOTE: Formal workers are those working for the government, a limited liability company, or cooperative societies. Informal workers are those working in proprietary enterprises or partnerships with own or other household members, or for a private household.
SOURCE: NSS-EUS 2011–12, ages 18–55.

FIGURE 2 Work environments and compatibility with childcare



NOTE: Hours of SNA work obtained from ITUS 2019, weekday diaries of all employed women aged 18–55

worked are high. Informal sector wage employment is similar. Informal self-employment appears to have a higher degree of temporal flexibility, while own-use production has the greatest degree of such flexibility. On the other hand, neither formal sector nor informal wage employment is home based (or located in the worker's own unit), limiting the possibility of simultaneously supervising or being "on-call" for children. Workplaces for self-employed informal sector workers, however, are usually located in either their own household or in their own unit outside the household. Overall, own-use production is the most compatible with childcare and formal sector employment is the least compatible.

We, therefore, expect that the effects of motherhood are the greatest (most negative) for participation and time spent in formal sector employment, followed by informal sector employment (with heterogeneity across different types of informal employment), and then own-use production. As rural women are concentrated in informal sector self-employment and own-use production, we also expect that rural women's work is associated with a greater degree of temporal and spatial compatibility with childcare: rural women are able to work fewer hours and also work at or in close proximity to their homes. These features of rural employment make it likely that rural women, unlike urban women, would continue to be employed after motherhood.

Motherhood, work type, and urban residence

To get the effects of motherhood, I compare married mothers against married childless women.[23] To ensure that the two groups are similar in other respects, I restrict the sample of mothers to women with just one child. I call this group "first-time mothers": these women are likely to have at least one additional child—the two-child norm is pervasive across India and nearly all women have at least two children (Spoorenberg and Dommaraju 2012).[24] Simple mean comparisons from the ITUS show, that in both rural and urban areas, mothers do about four times as much childcare as their spouses (in terms of hours spent per day) and well over 10 times as much other domestic work (Table 4), confirming prior research that unpaid work responsibilities fall almost completely on women (Srivastava 2020). A comparison of childless married women and first-time mothers (who are otherwise similar in terms of their education and household caste characteristics) shows that motherhood is associated with a decline in participation and time spent in SNA work. The difference in this association across rural and urban contexts is striking: motherhood is associated with a 9 percentage point (or 35 percent) drop in work participation for urban women, compared to only a 2 percentage point (or 6 percent) drop for rural women.[25] Note that motherhood is not associated with a decline in participation in activities related to own-use production for either rural or urban women; a much larger fraction of rural women engage in this category of work than urban women (23 percent compared to 9 percent, among married childless women).

Rural–urban differences in maternal employment might be due to greater rural availability of substitutes for maternal childcare. However, rural mothers are not more likely to reside with other (nonspousal) household members than are urban mothers (online Appendix Table B.6), consistent with Breton's (2019) finding that household types among young married couples are similar across rural and urban areas in India. Rural mothers also do not see household nonparents (household members who do not themselves have a child under 6 in the household) or their spouses doing much more childcare or housework than they do in the households of urban mothers (online Appendix Table B.6). Rural–urban differences in the care of nonhousehold children or nonhousehold members are also minor (online Appendix Table B.7).

To investigate why urban motherhood appears to be associated with larger declines in SNA work, despite similarities in household structures, I employ a simple shift-share decomposition that quantifies (in an accounting sense) the relative contribution of rural–urban differences in female employment across sectors of work against the contribution of differences in within-sector effects of motherhood. If different types of work have different levels of compatibility with childcare, the first contribution would reflect the prevalence of childcare-compatible types of work in a rural setting,

TABLE 4 Sample Means for Married Childless Women and First-Time Mothers

	Rural		*Urban*	
	Childless women	**First-time mothers**	**Childless women**	**First-time mothers**
Participation				
SNA work	0.34	0.32	0.26	0.17
Formal	0.03	0.02	0.11	0.05
Informal	0.11	0.08	0.07	0.04
Own-use production	0.23	0.24	0.09	0.08
Time (unconditional hours/day)				
SNA work	1.27	0.93	1.41	0.67
Formal	0.16	0.10	0.88	0.33
Informal	0.64	0.44	0.43	0.26
Own-use production	0.46	0.39	0.10	0.08
Domestic services	6.22	5.97	5.58	5.62
Childcare	0.30	2.17	0.22	2.45
Leisure (including sleep)	16.04	14.84	16.54	15.15
SNA work	7.13	7.50	8.12	8.30
Domestic services	0.51	0.47	0.37	0.26
Childcare	0.08	0.50	0.05	0.60
Leisure (including sleep)	16.05	15.40	15.29	14.71
Demographic characteristics				
Age	23.3	24.3	24.8	25.6
Years of education	7.4	7.4	9.2	9.1
Spouse's years of education	7.7	7.7	9.3	9.1
Household's caste				
ST	0.14	0.13	0.05	0.05
SC	0.22	0.22	0.16	0.15
OBC	0.42	0.42	0.42	0.42
Whether present in the household				
Teen (13-19) girl	0.09	0.04	0.05	0.02
Teen (13-19) boy	0.09	0.04	0.05	0.03
Adult (20-64) woman	0.57	0.39	0.51	0.38
Elderly (65+) woman	0.08	0.06	0.05	0.05
Elderly (65+) man	0.11	0.08	0.09	0.07
Monthly expenditure (2019 rupees)	8040	7845	12641	12133
Observations	6040	7311	3849	4189

NOTE: The sample and variable construction are detailed in the data section.
SOURCE: ITUS 2019, married childless women and first-time mothers, ages 18–30.

while the latter would reflect the role of rural–urban effects within a particular sector of work. More precisely, the percentage effect of motherhood on participation in SNA work can be decomposed as

$$\beta = \sum_j \alpha_j \beta_j$$

where j denotes the type of work (formal sector employment, informal sector employment, and own-use production), α_j is the (average) share of type of work j in total SNA work for childless women, and β_j is the percentage effect of motherhood on participation in work j.[26] If we allow superscripts r and u to denote rural and urban residence, respectively, the difference in the percentage effect of motherhood on paid work between the two contexts can be decomposed as

$$\beta^u - \beta^r = \sum_j \left(\frac{\alpha_j^u + \alpha_j^r}{2} \right) \left(\beta_j^u - \beta_j^r \right) + \sum_j \left(\frac{\beta_j^u + \beta_j^r}{2} \right) \left(\alpha_j^u - \alpha_j^r \right)$$

where the first term on the right-hand side represents the contribution of differences in the impacts of motherhood on participation between rural and urban contexts (weighted by average shares), while the second term represents the contribution of differences in shares between rural and urban women (weighted by average effects). I use the same method to decompose urban–rural differences in the effect of motherhood on the total time spent in SNA work.

Of the 29 percentage point difference in urban–rural effects of motherhood on participation, about 14 points are due to differences in the shares of types of work between rural and urban women, while the remaining 15 points are due to differences in the effect of motherhood in a given type of work (Table 5, panel C). The breakdown for time spent on SNA work is similar: differences in shares and differences in effects have roughly equal contributions to the 25 percentage point difference in the effect of motherhood on time spent on SNA work. The decomposition, therefore, suggests that nearly half of the urban–rural difference in the effects of motherhood on paid work time and participation can be explained by differences in the broad type of work: because motherhood has smaller impacts on production for own use relative to, say, formal sector employment, and because urban women are much more likely to be in formal jobs, motherhood has a greater disruptive effect on urban women's paid work. The categories of work used are fairly broad and, as highlighted in the previous section, conceal considerable rural–urban heterogeneity; therefore, urban–rural differences in the effect of motherhood, holding the type of work constant, are also sizeable.

The employment effects of motherhood

To formally estimate the effects of motherhood on work, my main specification uses ITUS 2019 data to estimate the following model using Ordinary Least Squares (OLS) regressions, restricting the sample to married childless women and first-time mothers:

$$y_i = \beta_0 + \beta_1 C_i + X_i^{'} \gamma + u_i, \quad (1)$$

TABLE 5 Decomposition of Urban-Rural Differences in Motherhood Effects on SNA Work

	Participation		*Unconditional time*	
	Rural	**Urban**	**Rural**	**Urban**
Total SNA				
Childless	0.34	0.26	1.27	1.41
Mothers	0.32	0.17	0.93	0.67
Change	−0.02	−0.09	−0.34	−0.73
Percent effect of motherhood	−0.06	−0.35	−0.27	−0.52
Urban-rural difference in percent effect	−0.29		−0.25	
A. Shares (childless women)				
Formal	0.08	0.42	0.13	0.63
Nonformal	0.31	0.25	0.51	0.31
Own-use production	0.61	0.33	0.36	0.07
B. Percent effect of motherhood				
Formal	−0.36	−0.55	−0.35	−0.63
Nonformal	−0.23	−0.34	−0.32	−0.39
Own-use production	0.06	−0.09	−0.16	−0.15
C. Weighted contribution of differences				
Shares	−0.14 (48%)		−0.13 (49%)	
Effects	−0.15 (52%)		−0.13 (51%)	

NOTE: The percent effect of motherhood is the change, divided by the average for childless women. See text for details on decomposition.
SOURCE: ITUS 2019, married childless women and first-time mothers, ages 15–30.

where i indexes an individual woman, y_i denotes the outcome variable (employment participation or time spent), C_i is a dummy variable that takes on a value of 1 if an individual i is a first-time mother and zero if she is childless, X_i is a vector of controls that includes day, month, and region fixed effects as well as individual and household characteristics, and u_i is the error term, which I cluster at the level of the region.[27] The coefficient of interest is β_1, which captures the effect of motherhood on employment. My specification flexibly controls for individual characteristics, with age-in-year fixed effects, eight categories for educational attainment, and four categories for caste. All specifications are estimated separately for rural and urban women, and bootstrapped standard errors (500 replications), clustered at the level of the region, are used to make inferences on the difference between rural and urban coefficients for the effect of motherhood on employment.

The validity of the estimate for β_1 rests on the assumption that, after conditioning on observable characteristics, childless women are not systematically different from women who have had their first child. This is a plausible assumption: nearly all women have at least one child, due to the strong social stigma attached to childlessness in India (Dommaraju 2009). However, variation in the timing of childbearing could introduce endogeneity concerns, as unobserved factors that affect employment might also be

connected to decisions to postpone childbearing. It is here that the focus on *first* (as opposed to later order) births are important: newly married couples are subject to strong social expectations that they conceive a child within the first year of marriage. In a qualitative study of fertility decisions among young married couples in India, Crivello et al. (2018) write, for instance, that "remaining childless beyond the first year of marriage risked placing young couples 'off-track' from their socially expected fertility trajectory" (2018, p. 7). The absence of contraceptive awareness combined with social expectations to conceive meant that none of the couples in their study used contraception prior to first pregnancy. This pattern is paralleled in studies using large, nationally representative data: in 2015, only 4 percent of women between the ages of 15 and 49 reported using contraception before first birth—a figure that has not increased very much since 1992 (when it was 3 percent) (Singh et al. 2020). Demographic research confirms that first birth occurs immediately after marriage, across regions in India, and the time elapsed between marriage and first birth does not vary by the woman's education (Dommaraju 2009). After five years of marriage, roughly 90 percent of women have had their first child, irrespective of the age at which they married (Dommaraju 2011).

Married childless women are placed at a slightly earlier stage of their lifecycle than first-time mothers—that is, they are observed before they have had their first child. First-time mothers are roughly one year older than childless women (the age distribution for first-time mothers is similar to that for childless women, but displaced to the right) (online Appendix Figure B.2). Childless women and first-time mothers are very similar, both in terms of their own educational characteristics and in terms of the education of their spouses, reinforcing the assumption that first-time motherhood is exogenous (online Appendix Figure B.3). To assess similarity in observable characteristics more systematically, I estimate the probability that a woman is a first-time mother (as opposed to being childless) on a comprehensive set of controls (region, education, caste, and urban residence). A histogram of the predicted probability (propensity score) from the probit estimation outlined above offers visual proof that the distributions for first-time mothers and married childless women oerlap substantially (online Appendix Figure B4).

Mechanisms

While the exogeneity of first-time motherhood ensures that estimated effects on employment are unbiased, further investigation is needed to establish the mechanism by which urban location mediates motherhood effects. To formally assess the role of substitutes for maternal childcare, I re-estimate Equation (1) by including controls for household composition (dummies for the presence of a teenage girl or boy, an adult woman, and an elderly

woman or man in the household), interacted with first-time motherhood.[28] I estimate the model

$$y_i = \beta_0 + \beta_1 C_i + H_i^{'}.\,[C_i = 1]\,.\beta_{1H} + H_i^{'}.\,[C_i = 0]\,.\beta_{0H} + X_i^{'}\gamma + u_i, \qquad (2)$$

where H_i' is a vector of dummy variables for the presence of each type of household cohabitant and is interacted with motherhood to allow for differential effects for mothers ($C_i = 1$) and married childless women ($C_i = 0$). All other variables are as defined earlier. β_1 is now interpreted as the effect of first-time motherhood on a woman with no (nonspousal) cohabitants, while β_{1H} is the difference in this effect introduced by household cohabitants. If rural–urban differences are driven by household structure (such as greater support for rural mothers), then conditioning on household composition should eliminate that difference (that is, the β_1 estimated from Equation (2) should be similar for rural and urban samples). However, if work compatibility underlies the differential effects of motherhood, the estimates should be similar to those generated by Equation (1). Additionally, we expect the presence of household cohabitants to have minimal effects on rural mothers—as rural work is compatible with child supervision, constraints introduced by the absence of household cohabitants are not binding—but should have larger effects on urban mothers, who require substitutes for maternal childcare if they are to continue being employed.

A second possibility is that rural women are simply poorer and are less able to give up paid work, due to household pressure and/or the necessity of providing for their young children (Mason and Palan 1981; Isvan 1991; Korinek 2004); it is, therefore, possible to have urban–rural differentials in motherhood effects even if rural and urban women face a similar level of "conflict" in combining paid work and childcare. I re-estimate Equation (1), controlling for household expenditure to capture household resource constraints:

$$y_i = \beta_0 + \beta_1 C_i + \theta E_i + X_i^{'}\gamma + u_i, \qquad (3)$$

where E_i represents logged household expenditure and the vector of controls X_i' adds dummies for household size and composition (though not interact with motherhood status), in addition to those specified in Equation (1). To overcome the endogeneity of household expenditure, I instrument for it using spousal education and the presence of a male household member in salaried wage employment. The failure of the exclusion restriction is a possibility (highly educated spouses might be less likely to adhere to gender norms), but the inclusion of detailed controls for the woman's education, as well as similar results obtained by using only the salaried male worker instrument, mitigate these concerns.

A final possibility might be that it is easier to leave children unsupervised to play together in rural neighborhoods or that (older) rural children may themselves engage in caring for their younger siblings. Mason

and Palan (1981) argue that urban residence may be associated with fewer child inputs into childcare as children are integrated into formal schooling systems. Online Appendix Table B.8 offers some clues by looking at how children between the ages of 6 and 17 spend their day.[29] Differences in time spent on education and unpaid work—as well as total time spent inside the household—are minimal. While the possibility of mothers receiving help with childcare from older children is not a concern for first-time mothers,[30] I estimate Equation (1) after including mothers with two children, to assess the potential impact of care from older children.

Results

OLS regressions confirm that children have greater negative effects on the employment of urban women, compared to rural women.[31] Motherhood decreases participation in SNA work by twice as much for urban women compared to rural women (9 percentage points vs. 3 percentage points) (Table 6). The 6 point difference in the effect of motherhood is sizeable, given that base rates of participation among childless women are quite low. When scaled by initial levels of participation among married childless women, this translates to a 35 percent effect on participation for urban women, and a 9 percent effect for rural women. Consider a simple counterfactual: if motherhood had the same percentage point impact on urban women's participation that it does on rural women, participation among urban mothers would be roughly 35 percent higher than it currently is. The effect of motherhood on the total time spent on SNA work is greater by about 0.3 hours for urban women than it is for rural women (a 30 percent drop in time for rural women, compared to a 50 percent drop for urban women).

The specification that interacts the effect of motherhood by child age (divided into three categories: less than a year old, one to two years old, and three to five years old) shows that rural–urban differences for mothers with newborn infants are minor: both experience an 11 percentage point reduction in participation in paid work, relative to childless women. However, rural mothers recover faster and rural–urban differences are the largest among mothers with children older than 1. This is consistent with our expectation that the physical demands imposed by newborn children leave little room for adjustment; these constraints are eased somewhat for rural women with slightly older children.

Separate regressions with components of SNA work—formal sector, informal sector, and own-use production—as outcome variables show that the percentage effect of motherhood on participation and time spent is the least for own-use production and the greatest for formal sector employment, for both rural and urban women.[32] These effects, which are nearly the same as the raw effects computed in Table 5 that do not condition

TABLE 6 Effect of first-time motherhood on SNA work

	Participation			Unconditional hours/day		
	Rural	Urban	Difference	Rural	Urban	Difference
Coefficient on motherhood						
All	−0.03***	−0.09***	−0.06***	−0.36***	−0.73***	−0.38***
	(0.01)	(0.01)	(0.01)	(0.04)	(0.09)	(0.10)
Interacted with child age						
Under 1	−0.10***	−0.11***	−0.02	−0.72***	−0.83***	−0.11
	(0.02)	(0.02)	(0.03)	(0.07)	(0.14)	(0.15)
1–2	−0.03***	−0.10***	−0.07***	−0.38***	−0.74***	−0.36***
	(0.01)	(0.01)	(0.02)	(0.06)	(0.09)	(0.10)
3–5	−0.00	−0.08***	−0.07***	−0.23***	−0.71***	−0.47***
	(0.01)	(0.01)	(0.02)	(0.05)	(0.11)	(0.12)
By disaggregated outcome						
Formal	−0.01***	−0.06***	−0.04***	−0.06***	−0.51***	−0.45***
	(0.00)	(0.01)	(0.01)	(0.02)	(0.07)	(0.07)
Informal	−0.03***	−0.03***	0.00	−0.22***	−0.20***	0.01
	(0.01)	(0.01)	(0.01)	(0.03)	(0.05)	(0.06)
Own−use	0.00	−0.01*	−0.01	−0.08***	−0.02*	0.06**
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
Observations	13355	8038		13355	8038	
Means (childless)						
SNA work	0.34	0.26		1.27	1.41	
Formal	0.03	0.11		0.16	0.88	
Informal	0.11	0.07		0.64	0.43	
Own-use	0.23	0.09		0.46	0.10	

NOTE: Only coefficients for first-time motherhood were reported. Controls include region, month, day, and age-in-years fixed effects, own education, and caste. Bootstrapped standard errors (500 replications) clustered at the level of the region in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
SOURCE: ITUS 2019, married childless women and first-time mothers, ages 18–30.

on covariates, suggest that a substantial portion of the urban–rural difference in the effect of motherhood on work participation can be attributed to the overrepresentation of rural women (compared to urban women) in the informal sector and own-use production, instead of formal sector employment.

Table 7 rules out the possibility that household structure or resource constraints are the channels by which rural–urban location mediates employment effects. Controlling for household composition (interacted with motherhood) does not eliminate rural–urban differences in employment effects. The first row in panel A can be interpreted as the effect of first-time motherhood on a woman with no (nonspousal) household cohabitants: we continue to see a sizeable difference in this effect between rural and urban mothers. Subsequent rows represent the additional effect on the employment of mothers introduced by the presence of a household cohabitant. Unlike rural mothers, constraints on participation introduced by the lack of substitutes for maternal childcare are binding for urban mothers. The

TABLE 7 Rural–urban differences in the effect of motherhood on SNA work (mechanisms)

	Participation			Unconditional hours/day		
	Rural	Urban	Difference	Rural	Urban	Difference
A. Household structure						
Motherhood	−0.03**	−0.13***	−0.09***	−0.43***	−0.99***	−0.55***
	(0.02)	(0.01)	(0.02)	(0.07)	(0.11)	(0.12)
Motherhood interacted with cohabitants						
Teenage boy	0.01	−0.01	−0.02	−0.12	0.09	0.21
	(0.02)	(0.03)	(0.03)	(0.11)	(0.15)	(0.14)
Teenage girl	−0.01	0.01	0.02	0.15*	0.40**	0.26
	(0.02)	(0.04)	(0.03)	(0.08)	(0.20)	(0.22)
Adult woman	−0.01	0.07***	0.08***	0.20**	0.43***	0.24**
	(0.01)	(0.02)	(0.02)	(0.08)	(0.15)	(0.12)
Elderly man	−0.01	−0.02	−0.02	−0.01	−0.03	−0.02
	(0.02)	(0.02)	(0.03)	(0.11)	(0.17)	(0.21)
Elderly woman	0.02	0.08***	0.05	0.06	0.45***	0.40*
	(0.03)	(0.03)	(0.04)	(0.18)	(0.17)	(0.22)
B. Household consumption expenditure						
Motherhood	−0.03***	−0.07***	−0.04***	−0.33***	−0.56***	−0.23***
	(0.01)	(0.01)	(0.01)	(0.05)	(0.09)	(0.08)
log expenditure	−0.06***	−0.03***	0.03**	−0.19***	−0.06	0.13
	(0.01)	(0.01)	(0.01)	(0.05)	(0.07)	(0.10)
C. Household expenditure (instrumented)						
Motherhood	−0.03***	−0.08***	−0.05***	−0.37***	−0.56***	−0.19***
	(0.01)	(0.01)	(0.01)	(0.05)	(0.07)	(0.07)
log expenditure (instrumented)	−0.35***	−0.19***	0.16**	−1.70***	0.11	1.81***
	(0.04)	(0.05)	(0.06)	(0.26)	(0.40)	(0.39)

NOTE: Controls (not reported) include region, month, day, and age-in-years fixed effects, own education, caste, and household composition. Log expenditure in panel C is instrumented by spousal education and salaried household members (see text for details). Bootstrapped standard errors (500 replications) clustered at the level of the region in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
SOURCE: ITUS 2019, married childless women and first-time mothers, ages 18–30.

presence of adult and elderly women appears to substantially enable their participation: compared to urban mothers with no cohabitants, urban mothers with another adult woman in the household are 7 percentage points more likely to be employed; those with an elderly woman are 8 percentage points more likely to be employed. On the other hand, employment participation among rural mothers with household cohabitants is not significantly different from those without cohabitants. Consistent with our expectation that rural women are able to care for children while employed, the absence of cohabitants does not deter employment (and, conversely,

their presence does not significantly raise participation). Higher household expenditure is associated with lower female participation (panel C), confirming prior research (Klasen and Pieters 2015) but does not affect the rural–urban difference in the estimated employment effect of motherhood. Instrumenting for household expenditure using the detailed categories of spousal education and the presence of a salaried male worker in the household also does not alter the rural–urban difference in motherhood effects.[33]

Results are similar when I broaden my focus from first-time mothers (whose children are very young) to include mothers with two children; their children are slightly older (which in turn might allow for more negotiation with constraints against paid work and may also allow older children to care for younger siblings).[34] The estimated rural–urban difference in the employment effects of motherhood, when mothers with two children are included, is even larger (online Appendix Table B.12). This is chiefly driven by the difference in employment effects between rural and urban mothers of children over the age of 5.

The estimated impact of motherhood on the number of time women spend on housework and active childcare echoes the earlier finding of very small differences in childcare time between employed and nonemployed mothers and points to the centrality of supervisory care. Motherhood is, unsurprisingly, associated with an increase in childcare time; time spent on domestic services either does not change significantly (urban women) or registers a small fall (rural women) (online Appendix Table B.13).[35] While the increase in time spent on childcare and domestic services associated with motherhood is larger for urban women compared to rural women, the magnitude of the difference (about 0.4 hours) is disproportionately small, given that the percent effect of motherhood on SNA work participation is almost four times as large for urban women than it is for rural women. Temporal flexibility may help explain a part of this pattern—some forms of active childcare (such as feeding) may have to occur at fixed points in the day, interrupting work schedules. However, Figure 1 in the previous section shows employed rural mothers to be performing roughly about the same amount of (active) childcare as employed urban mothers during standard work hours, suggesting that the flexibility to interrupt work or work nonstandard hours is less important than the household-centered nature of rural work.

Conclusion

The conflict between motherhood and women's employment is a central theme in the early maternal role incompatibility literature. However, research studying the mechanisms by which workplace environments mediate work–family conflicts is scarce, especially in developing countries. In this paper, I examine the temporal and spatial constraints associated with

different types of work and assess the degree to which compatibility with childcare shapes the effect of motherhood on women's employment in India. Urban mothers experience a 35 percent decline in employment, relative to urban childless women; the corresponding estimate for rural mothers is about 9 percent. This differential cannot be explained by the household structure and the availability of nonmaternal care or household resource constraints. My results instead suggest that work environments and their effects on temporal and spatial flexibility play a central role: motherhood effects are stronger for formal sector work than informal sector work and negligible for the unpaid household production of goods. The fact that urban women are concentrated in formal sector work helps explain why they experience sharper falls in employment after motherhood.

My findings advance the literature on the employment costs of children and the social, economic, and institutional determinants of these costs, in several ways. First, I show that among the channels posited to influence maternal role compatibility, the social organization of childcare does not play a major role in explaining rural–urban heterogeneity, at least in the case of India. Second, previous analyses of role incompatibility using time-use data have looked only at differences in average (active) childcare time across employed and nonemployed mothers, and across various types of maternal employment, using these differences to infer the degree of compatibility between childrearing and employment. I show that this approach is misleading. For instance, employed rural mothers spend only four minutes more (per day) on active childcare during regular working hours than employed urban mothers. This is difficult to reconcile with the strikingly large difference in motherhood effects on rural and urban employment unless issues of joint production and supervision are considered. The importance of constraints imposed by child supervision requirements and differences in home-based production help explain these patterns. As much of their work takes the form of informal self-employment or unpaid household production, rural women are better able to combine child supervision with other work than urban women. The joint production of childcare, unpaid work, and paid work is therefore key to understanding patterns of maternal employment in India.

The existing family policy in India is haphazard and fragmented. On the one hand, India's Maternity Benefit Act mandates 26 weeks of paid maternity leave and the Factories Act of 1948 instructs employers to provide crèches at establishments where more than 50 women are employed; however, these laws apply to only a tiny fraction of (mainly urban) women in the formal sector, leaving the majority of urban women workers not covered by legislation (Drèze, Khera, and Somanchi 2021). Rural women have greater access to publicly provided childcare: rural childcare centers (or *anganwadis*) provide free, public preschooling to children aged 3–6 and the rural public workfare program, the National Rural Employee Guarantee

Act (NREGA), is supposed to provide free crèche facilities at worksites that employ more than five women. However, *anganwadis* provides only three hours of daycare (timings that are not generally consistent with employment needs), while crèches at NREGA worksites have, for the most part, failed to materialize. Substantive problems with implementation aside, the lack of coherence in India's family policy has been subject to extensive criticism (Palriwala and Neetha 2011; Uma and Kamath 2019; Drèze, Khera, and Somanchi 2021). My paper demonstrates that recognizing the implications of the relationship between different forms of production and childcare is crucial to designing effective policy in both rural and urban settings.

More tentatively, my paper might also speak to different effects that public childcare provision or support might have on maternal employment. While my results suggest that childcare policies are unlikely to raise *overall* rural maternal employment, they may be necessary in order to enable rural women to transition to better forms of employment. Existing debates on the falling rate of rural female labor force participation have focused primarily on gender norms as they intersect with rising household incomes and the limited availability of "good" jobs for rural women (Fletcher, Pande, and Moore 2017). However, even with an expansion of formal sector job availability, existing rural childcare policies would need to be strengthened in order for rural women to maintain their attachment to such jobs. My paper does not speak to the myriad other benefits of childcare support that are not directly related to rural women's employment, including potential reductions in rural women's time poverty, as well as possible improvements in child outcomes. In urban settings, a provisional implication of my paper is that subsidized or free public childcare may have large positive effects on overall maternal employment. My results show, for instance, that the presence of an adult or elderly woman in urban households raises urban maternal SNA participation by 7–8 log points, which suggests that childcare constraints are binding for urban women and that relieving such constraints might potentially raise urban maternal employment. Broadly, my findings illustrate the importance of understanding the implications of urbanization and modern sector employment for childcare responsibilities and women's employment in India.

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Notes

1 Mason and Palan (1981) frame the hypothesis as follows: "an inverse relationship between women's [paid] work and fertility occurs only when the roles of worker and mother conflict" (1981, p. 551).

2 Palriwala and Neetha (2011) describe India's policy regime as one of "gendered familialism:" policy is framed under the assumption that childcare is a private, female, responsibility and that it is undesirable that women with familial responsibilities work outside the home. Existing family policy is limited to the Maternity Benefits Act, amended in 2017 to provide paid 26-week maternity leave to women in the organized sector (a small fraction of employed women), and scattered, inadequate, and poorly-implemented schemes for women in non-formal work (Drèze et al. 2021).

3 The number of nonrespondents, after including individuals whose time diaries were collected by proxy from other household members, was 1,955 individuals (or about 0.0044 of the sample of eligible individuals aged 6 or above).

4 The major activity is defined as the one that the respondent considered to be the "most important activity performed during a time slot" (MOSPI 2020, paragraph 2.17). If only one activity was performed in a time slot, that activity was always considered as a major activity.

5 Note that this is distinct from the category of "formal employment:" the 17th ICLS guidelines distinguish between formal sector employment and formal employment, where the latter is defined according to job characteristics (such as the presence or absence of social protection or entitlement to employment benefits or a written contract), including formal jobs in informal sector and excluding informal jobs in formal enterprises (International Labour Organization [ILO] 2013). For practical purposes, my category of time spent in formal sector employment is likely to overstate formal employment due to the growing trend of informalization within formal sector enterprises (Sheikh and Gaurav 2020). The ITUS does not include additional information that would be necessary to distinguish between formal and informal jobs within formal sector enterprises.

6 A similar distinction between "informal sector employment" and "informal employment" applies, though the category of formal employment within household enterprises is negligibly small for India (Sheikh and Gaurav 2020). Also note that some household enterprises, even if unincorporated, may be defined as formal sector enterprises if they are large in size or are registered (ILO 2013).

7 These variables exclude the individuals themselves if they fall in the category.

8 I consider all employed women and men aged 18 to 55, rather than just employed mothers because I want to get at differences in rural and urban work in general, rather than impact that these differences have on the paid work of employed mothers. Results are similar when I look at employed married childless women instead of all employed women, but I prefer the latter sample because of the larger sample size.

9 Employment includes the following categories of workers: the self-employed, regular wage employees, and casual wage employees. The ITUS (like the NSS) only records production of goods for own use consumption as an extended category of housework ("engaged in free collection of goods (vegetables, roots, firewood, cattle feed, etc.), sewing, tailoring, weaving, etc. for household use, in addition to domestic duties"). Results from including workers from this expanded definition of employment are similar.

10 As described in the previous section, formal sector employment might include what we understand as informal employment; an example might be casual wage workers in public infrastructural projects. I therefore exclude casual wage workers from those participating in formal sector employment, to better differentiate between categories of work that have different implications for access to part-time schedules. Note that participation in different categories, defined as engaging in positive hours, can sum

up to more than a 100 percent because some individuals engage in multiple types of work on a particular day.

11 Nearly 80 percent of all SNA work is performed during 8 AM to 5 PM on weekdays (own calculations from the ITUS 2019 for employed individuals between the ages of 18–55).

12 The pattern for rural and urban employed men (shown in online Appendix Figure B.1) is similar.

13 Allowing for multiple activities does result in a slight increase the hours (and episodes) of childcare performed by mothers during paid work hours (driven primarily by informally self-employed women), but the rural–urban difference is again quite small (online Appendix Table B.1).

14 Differences in childcare time during typical paid work hours between rural or urban non-employed and employed mothers are significant at the 1% level (*t*-tests reject the null that means for both groups are equal).

15 For instance, rural households with a child under six report the total time spent by all household members in minding children to be about four minutes per day. Online Appendix Table B.3 offers an approximate measure of deficits in childcare by computing total household hours of active childcare and time spent minding children, in households with only one child under the age of six, and subtracting that from the total hours in a day (adjusted for imputed child time sleep time, by child age). The resultant difference should indicate the extent to which supervisory childcare is not measured (under the assumption that a child under six would need to be supervised throughout the day). The deficit appears to be fairly substantial: nearly nine hours per day. Certainly, some of this apparent mismeasurement may be the result of children being in paid childcare arrangements (which are not observed in the data), or genuine deficits in supervisory care. However, apparent undercounting is similar when I restrict the sample to households with only weekend diaries (when paid childcare arrangements are less likely to be operational). When I restrict the sample to households with a child under three (where the child's age makes it unlikely that he or she would be left unsupervised), undercounting is reduced, but continues to remain large (about six hours per day).

16 Urban (rural) employed women spend 35 (25) minutes commuting (own calculations from the ITUS 2019 for employed women between the ages of 18 to 55, restricted to weekday diaries). Commuting could be a short-duration activity and therefore underestimated when 30-minute bins are used. However, commuting times for urban and rural employed women are identical even when multiple activities (that are over 10 minutes in duration) are considered. But if rural women are more likely to spend less than 10 minutes on their commutes compared to urban women, the survey may understate their commuting times.

17 Of the four main categories of [paid] workers recorded in the Census—cultivators, agricultural laborers, workers in household industry, and "other" workers—travel to work is only recorded for the last category (Census of India 2011 Metadata, accessed here).

18 By definition, cultivators are working on their own fields, while household industry is located within the home. I assign the state- and gender-specific median distance travelled by "other" workers to agricultural laborers. These estimates are interpretable as an upper bound on the incidence of zero travel.

19 The ITUS records only two codes for the location in which an activity was performed: within versus outside the premises of the dwelling unit of the selected household. Both rural and urban employed women spend roughly the same fraction (87 percent) of their total SNA work time outside the household dwelling unit (online Appendix Table B.5), but it fails to distinguish between own versus employer units located outside the household, even though the two have very different implications for the possibility of supervising children while engaging in paid work.

20 Workplace location is only recorded for non-agricultural workers: I assume that the workplace (the field) is located in their own unit away from their dwelling, for the

agricultural self-employed, and the workplace has no fixed location for the agricultural casual wage workers.

21 Delecourt and Fitzpatrick (2021) report, for instance, that 37 percent of female business owners in Uganda brought an infant or toddler to their workplace.

22 To approximate the categories of formal and informal employment in the ITUS most closely, I define formal employment as workers working for the government/public sector, a public/private limited liability company, or co-operative societies/trust/other non-profit institutions. Informal workers are those working in proprietary enterprises; partnerships (with members from same household or with members from a different household); or the employer's households (that is, private households employing servants, watchmen, or cooks). While the NSS-EUS records information on the presence of a written contract or availability of benefits, I do not incorporate these characteristics into defining formal/informal for purposes of consistency with the ITUS.

23 I focus on married women as childbearing occurs overwhelmingly among married couples in India (Dommaraju 2009).

24 Note that this also means, in effect, that these "first-time mothers" are mothers of very young children. As women do not wait very long to have their second child, the child's age, for nearly all of my first-time mothers, is below 6 (I exclude the few observations with a child 6 or above). The validity of the married childless woman/first-time mother comparison is further detailed in the next subsection.

25 These effects are nearly identical to those obtained by conditioning on time (day and month), education, caste, and region (Table 6), because married childless women and first-time mothers are very similar in terms of these covariates.

26 In the case of overlapping participation in different types of work, I set participation equal to zero in the type of work that involves lesser time, thus producing mutually exclusive categories of participation.

27 I use the NSS classification of 88 regions, which are more disaggregated than states, but less disaggregated than districts. I do not use district fixed effects because the number of observations per district are very small.

28 I do not include a dummy for an adult man as nearly all women in the sample (97 percent) reside with their husbands (so this variable would equal 1 in nearly every case).

29 The ITUS does not collect time information on children under 6.

30 By definition, they have only one child, and the median age of that child is 2.

31 This difference in motherhood employment effects across rural and urban women is preserved when using the more conventional measure of participation in paid work (the "usual principal status" or participation based on major activity in the previous year) and across datasets, including the Employment and Unemployment Schedules of the National Sample Survey (see online Appendix Tables B.8 and B.9).

32 Percentage effects are the coefficients on motherhood divided by the outcome mean for married childless women.

33 First-stage regressions for rural and urban samples reported in online Appendix Table B.11 have F-statistics of 82.3 and 45.1, respectively.

34 Among the group of mothers with two children, there are both women who have just had a child and women whose youngest child is over five years old (online Appendix Figure B.5).

35 Only results for unconditional hours were estimated, as impacts on participation are not particularly meaningful (childless women in general do not participate in childcare activities, while, on the other hand, participation rates in domestic services are close to unity for both kinds of women).

References

Aaronson, Daniel, Rajeev Dehejia, Andrew Jordan, Cristian Pop-Eleches, Cyrus Samii, and Karl Schulze. 2017. "*The Effect of Fertility on Mothers' Labor Supply over the Last Two Centuries*." Working Paper 23717, National Bureau of Economic Research.

Berniell, Inés, Lucila Berniell, Dolores De la Mata, María Edo, and Mariana Marchionni. 2021. "Gender Gaps in Labor Informality: The Motherhood Effect." *Journal of Development Economics* 150: 1025–1099.

Bianchi, Suzanne M. 2000. "Maternal Employment and Time with Children: Dramatic Change or Surprising Continuity?" *Demography* 37(4): 401–414.

Billingsley, Sunnee, and Tommy Ferrarini. 2014. "Family Policy and Fertility Intentions in 21 European Countries." *Journal of Marriage and Family* 76(2): 428–445.

Bongaarts, John, Ann K Blanc, and Katharine J McCarthy. 2019. "The Links between Women's Employment and Children at Home: Variations in Low- and Middle-Income Countries by World Region." *Population Studies* 73(2): 149–163.

Breton, Etienne. 2019. "Modernization and Household Composition in India, 1983–2009." *Population and Development Review* 45(4): 739–766.

Brewster, Karin L, and Ronald R Rindfuss. 2000. "Fertility and Women's Employment in Industrialized Nations." *Annual Review of Sociology* 26(1): 271–296.

Brinton, Mary C, and Eunsil Oh. 2019. "Babies, Work, or Both? Highly Educated Women's Employment and Fertility in East Asia." *American Journal of Sociology* 125(1): 105–140.

Budig, Michelle J, and Nancy Folbre. 2004. "Activity, Proximity, or Responsibility? Measuring Parental Childcare Time." In N. Folbre and M. Bittman (Eds.), *Family Time: The Social Organization of Care*. New York: Routledge,pp. 51–68.

Concepcion, Mercedes. 1974. "Female labour force participation and fertility." *International Labour Review* 109(5): 503–517.

Cortés, Patricia, and Jessica Pan. 2020. "*Children and the Remaining Gender Gaps in the Labor Market*." Working Paper 27980, National Bureau of Economic Research.

Crivello, Gina, Jennifer Roest, Uma Vennam, Renu Singh, and Frances Winter. 2018. "*Marital and Fertility Decision-Making: The Lived Experiences of Adolescents and Young Married Couples in Andhra Pradesh and Telangana, India*." Working Paper. Young Lives, Oxford, UK.

Cubas, German, Chinhui Juhn, and Pedro Silos. 2019. "*Coordinated Work Schedules and the Gender Wage Gap*." Working Paper 26548, National Bureau of Economic Research.

Das, Maitreyi B, and Ieva Zumbyte. 2017. "*The Motherhood Penalty and Female Employment in Urban India*." Research Working Paper number 8004. World Bank.

Delecourt, Solène, and Anne Fitzpatrick. 2021. "Childcare Matters: Female Business Owners and the Baby-Profit Gap." *Management Science* 67(7): 4455–4474.

Desai, Sonalde, and Devaki Jain. 1994. "Maternal Employment and Changes in Family Dynamics: The Social Context of Women's Work in Rural South India." *Population and Development Review*, 20(1): 115–136.

Dommaraju, Premchand. 2009. "Timing of First Birth in India." *Genus* 65(1): 81–101.

Dommaraju, Premchand. 2011. "Marriage Age and Fertility Dynamics in India." *Asia-Pacific Population Journal* 26(2): 21–38.

Donahoe, Debra Anne. 1999. "Measuring Women's Work in Developing Countries." *Population and Development Review* 25(3): 543–576.

Drèze, Jean, Reetika Khera, and Anmol Somanchi. 2021. "Maternity Entitlements in India: Women's Rights Derailed." SocArXiv v5mc6. doi:10.31235/osf.io/v5mc6.

Edwards, Linda N, and Elizabeth Field-Hendrey. 2002. "Home-Based Work and Women's Labor Force Decisions." *Journal of Labor Economics* 20(1): 170–200.

Engelhardt, Henriette, and Alexia Prskawetz. 2004. "On the Changing Correlation between Fertility and Female Employment over Space and Time." *European Journal of Population* 20(1): 35–62.

Fletcher, Ellen, Rohini Pande, and Charity T. Moore. 2017. "*Women and Work in India: Descriptive Evidence and a Review of Potential Policies*." Working Paper RWP18-004. John F. Kennedy School of Government.

Folbre, Nancy. 1983. "Of Patriarchy Born: The Political Economy of Fertility Decisions." *Feminist Studies* 9(2): 261–284.

Folbre, Nancy. 2021. "*Quantifying Care: Design and Harmonization Issues in Time-Use Surveys*." Research Report, UN Women.

Folbre, Nancy, and Jayoung Yoon. 2007. "What is Child Care? Lessons from Time-Use Surveys of Major English-Speaking Countries." *Review of Economics of the Household* 5(3): 223–248.

Goldin, Claudia. 2014. "A Grand Gender Convergence: Its Last Chapter." *American Economic Review* 104(4): 1091–1119.

Government of India. 2011. *Census of India 2011* [Data set]. Office of the Registrar General and Census Commissioner, India. https://censusindia.gov.in/nada/index.php/catalog/40425.

Herr, Jane Leber, and Catherine D Wolfram. 2012. "Work Environment and Opt-Out Rates at Motherhood across High-Education Career Paths." *Industrial and Labor Relations Review* 65(4): 928–950.

Hirway, Indira. 2009. "Mainstreaming Time Use Surveys in National Statistical Systems in India." *Economic and Political Weekly* 47(37): 56–65.

Hirway, Indira, and Sunny Jose. 2011. "Understanding Women's Work Using Time-Use Statistics: The Case of India." *Feminist Economics* 17(4): 67–92.

Ho, Teresa J. 1979. "Time Costs of Child Rearing in the Rural Philippines." *Population and Development Review* 5(4): 643–662.

ILO. 2013. *Measuring Informality: A Statistical Manual on the Informal Sector and Informal Employment*. Geneva: International Labour Organization.

International Conference of Labour Statisticians (ICLS). 2013. "Resolution Concerning Statistics of Work, Employment, and Labor Underutilization." In: *19th International Conference of Labour Statisticians*. ILO Geneva.

Isvan, Nilüfer A. 1991. "Productive and Reproductive Decisions in Turkey: The Role of Domestic Bargaining." *Journal of Marriage and the Family* 53(4): 1057–1070.

Jaffe, Abram J, and Koya Azumi. 1960. "The Birth Rate and Cottage Industries in Underdeveloped Countries." *Economic Development and Cultural Change* 9(1): 52–63.

Jia, Nan, and Xiao Yuan Dong. 2013. "Economic Transition and the Motherhood Wage Penalty in Urban China: Investigation Using Panel Data." *Cambridge Journal of Economics* 37(4): 819–843.

Klasen, Stephan, and Janneke Pieters. 2015. "What Explains the Stagnation of Female Labor Force Participation in Urban India?" *World Bank Economic Review* 29(3): 449–478.

Korinek, Kim. 2004. "Maternal Employment during Northern Vietnam's Era of Market Reform." *Social Forces* 83(2): 791–822.

Lerch, Mathias. 2019. "Fertility Decline in Urban and Rural Areas of Developing Countries." *Population and Development Review* 45(2): 301–320.

Lim, Katherine. 2019. "Do American Mothers Use Self-Employment as a Flexible Work Alternative?" *Review of Economics of the Household* 17(3): 805–842.

Martine, George, Jose Eustaquio Alves, and Suzana Cavenaghi. 2013. "*Urbanization and fertility decline: Cashing in on structural change*." Working Paper, International Institute for Environment and Development.

Mason, Karen Oppenheim, and VT Palan. 1981. "Female Employment and Fertility in Peninsular Malaysia: The Maternal Role Incompatibility Hypothesis Reconsidered." *Demography* 18(4): 549–575.

McDonald, Peter. 2000. "Gender Equity in Theories of Fertility Transition." *Population and Development Review* 26(3): 427–439.

Palriwala, Rajni, and N Neetha. 2011. "Stratified Familialism: The Care Regime in India through the Lens of Childcare." *Development and Change* 42(4): 1049–1078.

Sheikh, Rayees Ahmad, and Sarthak Gaurav. 2020. "Informal Work in India: A Tale of Two Definitions." *The European Journal of Development Research* 32(13): 1105–1127.

Short, Susan E., Feinian Chen, Barbara Entwisle, and Zhai Fengying. 2002. "Maternal Work and Child Care in China: A Multi-Method Analysis." *Population and Development Review* 28(1): 31–57.

Singh, Pragya, Kaushalendra Kumar Singh, Anjali Singh, and Anjali Pandey. 2020. "The Levels and Trends of Contraceptive Use before First Birth in India (2015–2016): A Cross-Sectional Analysis." *BMC Public Health* 20: 1–9.

Sobek, Matthew, and Sheela Kennedy. 2010. "*The Development of Family Interrelationship Measures for International Census Data*." Working Paper. Institute for Social Research & Data Innovation, University of Minnesota.

Spoorenberg, Thomas, and Premchand Dommaraju. 2012. "Regional Fertility Transition in India: An Analysis Using Synthetic Parity Progression Ratios." *International Journal of Population Research* 2012: 1–20.

Srivastava, Abhilasha. 2020. "Time Use and Household Division of Labor in India – Within-Gender Dynamics." *Population and Development Review* 46(2): 249–285.

Stycos, J. Mayone, and Robert H. Weller. 1967. "Female Working Roles and Fertility." *Demography* 4(1): 210–217.

Sudarshan, Ratna M., and Shrayana Bhattacharya. 2009. "Through the Magnifying Glass: Women's Work and Labour Force Participation in Urban Delhi." *Economic and Political Weekly* 44(48): 59–66.

Uma, Saumya, and Aditya Kamath. 2019. "Gamechanger or a Trojan Horse: Some Reflections on India's Maternity Benefit Act, 1961." *Economic and Political Weekly* 55(20): 80–95.

Villanueva, Aida and Ken-Hou Lin. 2020. "Motherhood Wage Penalties in Latin America: The Significance of Labor Informality." *Social Forces* 99(1): 59–85.

Weller, Robert H. 1968. "The Employment of Wives: Role Incompatibility and Fertility." *The Milbank Memorial Fund Quarterly* 46(4): 507–526.