

Investigating nexus between family composition and women's participation in labour force or domestic activities: Recent evidences from India

Highlights

- Education is key driver of women's labour force participation and weaken the patriarchal and social norms
- Each household composition provide supportive environment for graduate and more educated women
- Gender of elderly members in the household plays an important role in women's labour force participation
- Living with younger children (under-five) restricts women to participate in labour force and engage them in domestic work, this effect disappears when they co-resided with elderly women
- Residing with school-going age children promotes their labour force participation and reduces the burden of domestic work
- Living in households with elderly men restrict work participation, this effect disappear for women graduate women

Abstract

Despite a remarkable increase in girls' educational enrolment and a significant decline in fertility over the last few decades, India witnessed a large decline in women's labour force participation. Our paper investigates the nexus between family composition and women's participation in domestic work and the labour force. Using unit-level data from the national Employment-Unemployment survey (2011-12) and Periodic labour force survey (2017-18), we find a notable increase in women's domestic work participation and an enormous fall in women's labour force participation over time. Domestic work participation of women with secondary and middle education has increased; however, it has declined among women holding higher or graduate degrees. Residing with at least one young child (under-five) in the family reduces women's chance to participate in the labour force and increases domestic activity; however, if they co-reside with either school-going age children (5-14) or elderly person (64-79), it increases their labour force participation. Further, women living in households with school-going age (5-14 years) children have higher tendency to engaged in labour force rather than domestic activity. The association between co-residence with conventionally dependent persons and women work participation is consistent in both rounds. We find evidences that the presence of the elderly women, not the elderly men, encourage

other adult women's engagement in labour force participation rather their domestic participation.

Keywords: Family Composition; Labour Force Participation; Domestic Work; Gender

1. Introduction

For the last few decades, female labour force participation has been receiving huge attention due to its puzzling nature in India. The linkage of female work and economic development pioneered by Easter Boserup and Claudia Goldin theorised a new stylised debate in the late twentieth century focusing on women's participation and their status in the labour market. Their work theorised that as economies transform from agrarian to industrialist economy, the labour market opportunities for women especially semiskilled and unskilled women reduces, which leads to their withdrawal from labour market (Boserup 1970; Goldin, 1995). However, this economic transition also supports women to attain high enrolment in secondary and higher education, to acquire modern skilled education and training, less desire for childbearing, and better job opportunities in labour market (Boserup 1970; Goldin, 1995; Mammen & Paxson, 2000).

The consequences of this rapid economic transition vary from country to country as female labour force participation in developed and industrialist countries has increased in the last several decades while developing countries like India have been experiencing a rapid and continuous fall in female participation in labour market (Abraham, 2013; Verick, 2018; Lahoti & Swaminathan, 2016; Klasen and Pieters 2015). Female labour force participation in India has been continuously declining since 1980s except 2004-05 (Mehrotra and Parida, 2017; PLFS, 2019); even though India has achieved high enrolment of girls in secondary and higher education, rapid economic growth, better opportunity to work, replacement level of fertility, and better health care facility for women and girls (Mehrotra & Sinha, 2017; Neff et al. 2012; Kannan and Raveendran 2012; Himanshu 2011; Bloom et al., 2009). This trend of female labour force participation is a great puzzle with the structural transition in the economy. It led economists and policymakers to call for policy intervention to increase female participation in the labour market through improving employment opportunities as well as a shift in social and cultural attitude and norms. In the 1990s, India implemented liberal economic reforms and became a much integrated and inclusive economy with the rest of the world. This rapid economic growth accompanied by structural change in the economy

and change in demographic scenario especially rapid decline in fertility and mortality, high enrolment in female education, and transforming social and cultural norms lead to reduce female labour force participation (Gaddis & Klasen 2014; Bloom et al., 2009).

Female work participation in the labour market is influenced by the micro-level factors such as household composition, family status, the male's earning, labour demand condition at the local level, regional mobility, marriage and family care, childbearing and rearing, social and cultural norm, unemployment, safety at workplace and gender equality in pay (Klasen and Pieters, 2015; Sorsa et al., 2015; Siddiqui et al., 2017; Afridi et al., 2017;). The structural issues in the labour market, lack of skills, gender discrimination, high pay gap, social stigma, cultural norms, male-dominated industries, mechanisation of agriculture, and occupational segregation insist women withdraw from labour market (Seneviratne, 2018). The review of literature acknowledges that social, cultural and traditional norms such as family, social group and religion restrict women's decisions and behaviour inside and outside the household.

In this paper, we assessed the changes in the female labour force participation and domestic activity over the recent period (2011-2017). Then, we attempted to answer the question of whether residing with other family members restricts women to enter in the labour force and enforce them to do domestic work or vice versa? which is further investigated over period and across rural-urban. Thus, the study examined the nexus of co-residence with younger children under 5-year, school-going children, and elderly people and how it impacts women's domestic work and labour force participation. We also attempted to assess the gender role of elderly members on women's labour force participation.

The following section of the study discusses briefly the mechanisms through which major socio-economic factors affect female labour force participation and domestic work. It presents an overview of the literature and section-3 describes briefly the data and methods used in the study. This is followed by, sections on results, discussion and, conclusions.

2. Literature Review

2.1 Labour force and development

Recently, the stylised U-shape hypothesis on the relationship between female labour force and the development (Goldin, 1995; Mammen & Paxson, 2000; Gaddis & Klasen 2014; Mehrotra and Parida, 2017) became more prominent to portray the full development trajectory of a country at the macro level masking the important micro-level factors at the regional and state level. Furthermore, female work participation in the labour market is influenced by the micro-level and contextual factors such as household composition, family

status, male family member's earning, labour demand condition at the local level, regional mobility, marriage and family care, childbearing and rearing, social and cultural norm, unemployment, safety at workplace and gender equality in pay (Siddiqui et al., 2017; Afridi et al., 2017; Klasen and Pieters, 2015; Sorsa et al., 2015).

2.2 Women's work participation: Indian Scenario

Historically, more female workers are engaged in rural India as compared to urban which has declined from 34.2% in 1983 to 19.2% in 2017-18. During the same period, female labour force participation rate (FLFPR) in an urban area has been showing a stagnant trend as it declined marginally from 15.9% in 1983 to 15.6 % in 2017-18 (Mehrotra and Parida, 2017; PLFS, 2019). The huge drop in female FLFPR in the rural area is the result of mechanisation of the agriculture sector, rising income of households, and the gradual transformation of the economy, from an agrarian one, where women used to work as secondary and marginal workers, to an industrial one (Mehrotra and Parida, 2017). On the other hand, girls' high enrolment in secondary and tertiary education also fails to increase women's work participation in the labour market in India. Evidence suggests that women's work participation decreases with additional schooling as transition from primary to secondary education level in India (Bhalla & Kaur, 2011; Kannan & Ravindran, 2012). Several studies found that the continuous decline in women's participation in economic activity indicates a persistent increment in female participation in domestic and household work (Neetha, 2009a; Neetha, 2009b; Mukharjee, 2011).

2.3 Domestic activities as gender roles in Patriarchal society

Since the past, patriarchal characteristics in Indian society such as patrilocal residence, patrilineal descent, male-owned household, and hierarchical position restrict women to work outside the home, expecting them to perform domestic duties and, bearing and nurturing of the child.

The concurrent review of the literature shows that cultural issues are often neglected in India which produces more hurdles in the way of women's participation. The culture of India is largely gender and caste stratified characterised by patriarchy and the low status of women in the society. The patriarchy system characterised by patrilineal descent, patrilocal residence, inheritance and succession practices that exclude women from parents' property, and hierarchical relation in which male members have authority over family members compel women to stay at home (Jejebhoy and Sathar, 2001). This patriarch system constrains women to opt-out from labour market and stay at home. However, women are not getting leisure time at home due to their domestic work. In India, more than half of the women are completely

engaged in domestic activities, and the remaining do domestic duties with their other professional and education duties (PLFS, 2019). Domestic duties are nearly universal for women and often they have to fill the double burden of work. However, the Indian classification of occupation does not count their domestic work in labour force participation. Several studies pointed out that there is a need to resolve the definitional issues that exist in domestic work and labour force participation and consider domestic work in the labour force (Neetha, 2009; Mazumdar and Neetha, 2011; Lahoti and Swaminathan, 2013; Kapsos et al., 2014).

Studies attribute these patterns to cultural norms and social stigmas associated with the female worker in India where caste and societal structure play a crucial role to define women's work participation (Rao, 2014; Eswaran et al., 2013; Munshi & Rosenzweig; 2006). In India, patriarchal and conservative society considered men as breadwinners, and women as family caregivers (Mammen & Paxson, 2000). Goldin (1995) in her pioneering research documented that gender norm plays a key factor in low women work participation. In this type of society, even though a woman can work in paid manual work during economic distress when there is an employment crisis for men but societal norms raise questions about her husband's ability to provide her financial support and degrade her husband's social status (Goldin, 1995). Furthermore, this social stigma increases when a woman attains higher education and gains social status, raising a question on her utility cost of engaging in manual or low skilled work, forcing woman to withdraw from labour market (Klasen & Pieters, 2015; Olsen & Mehta, 2006).

2.4 Household status and women's participation in domestic work

Another strand of the literature suggests that if a household income increases especially male family members' income, women withdraw themselves from the workforce to appear higher social status and upward mobility. If a woman resides in a joint family, any family member's income increase, they tend to perform domestic duties to maintain household social status rather than working outside. Thus, the income effect plays a major role in women's work participation, especially in rural areas. Literature show that performing domestic duties deemed to be high status in the society for upper-caste females (Eswaran et al., 2013), and working outside the home to be considered for lower caste thus showing performance of domestic duties as a symbol of social status (Rao, 2014; Carswell, 2016). Historically, due to the economic crisis, lower caste women are allowed to work outside the home in manual jobs like agriculture, and as daily wage labourers.

A concurrent preview of the literature suggests two main aspects of this large decline in female labour force participation in India. First, it is the result of the increment in household income especially male income in India (Rangarajan et al., 2011; Afridi et al., 2012; Mehrotra and Parida, 2017). Due to the high earning of their family members, low wages compared to men, less opportunity in the high skilled job, and gender discrimination, most of the women withdrawal themselves from the job market (Ghose, 2009). Furthermore, due to the income effect, women had the choice to withdraw themselves from labour market; and young girls prefer higher education, and married women prefer to take care of family and childcare. Second, several studies found that 'status' producing activity in India is very high, and to maintain family and household status, most of the women engage themselves in domestic work unpaid and unaccounted (Abraham 2009; Himanshu 2011; Srivastava and Srivastava 2010). However, many researchers criticised and argued the definitions of work that exclude domestic work from economic activities (Hirway 2012; Kapsos et al 2014). Further, several researchers argued that women's work participation in India is a subject of under-reporting and underestimation (Lahoti and Swaminathan, 2013; Mazumdar and Neetha, 2011).

2.5 Family composition, family size, and women engagement

Literature suggests that a woman is considered as a primary caregiver in the family. They have to look after child care, elderly people, and ill person in the family which is resulted in the withdrawing of women from the workforce and reduce labour supply (Lilly et al., 2007; Maurer-Fazio et al., 2011; Arpino, 2014). Another viewpoint of literature suggests the important role of co-residing with another family members such as parents, parents in law, child, sisters in law, and brothers in law. In joint family settings and large households, the decision of females to go for work outside depends on other senior members, and, women withdraw from workforce despite having education and willing to work to perform the domestic duties. Dhanraj and Mahambare, 2019 found that joint family restricted married women to work outside especially among younger and upper-caste woman. However, if the household head is a female, there is more flexibility in these restrictions (Randive-Deshmukh, 2005). In India, within household, a woman's status does not only depend on her male partner but also on other senior family members.

Historically, in India, most of the families live in a joint family having more than four members as women stay with their in-laws. In a patriarchal society, decision-making power vests among older/senior family members, and younger women have the least power (Subaiya & Vanneman, 2016; Arpino et al, 2014). In such a family setting, household income

gets more weight than individual income, and all the decision of household expenditure mostly vests on the household head or senior family member. Hence, if the income of other family members increases, younger women start experiencing resistance to working outside the home (Mookerjee, 2017). Additionally, increased unpaid household work discourage woman's entry into low skilled and manual work. Here, education and skill play a crucial role through improving intra-household bargaining power, especially in decision making by raising women's earning and it reduces the wage gap comparatively other household working members (Klasen & Lamanna, 2009). The outcome of decision-making capacity may favour women to participate in the labour market, as the older members provide childcare support and share unpaid household work (Arpino, 2014; Dhanaraj & Mahambare, 2019). However, there is a lack of studies that can track the behaviour of women over time who change their working behaviour with changes in family co-residence status.

Debnath (2015) assessed the role of household structure on women's autonomy and work and found that women residing in the nuclear family have greater decision-making power. The decision regarding co-residence, domestic work, and labour force participation can be taken simultaneously, which arises an endogeneity issue. First, these cases can be understood as women who are more pertinent to participate in labour market may prefer to not co-reside into a joint family, if that family is expected to restrict women to participate in labour market. Second, if a joint family is likely to provide opportunity and support in terms of domestic responsibilities and child care, women who apt to work may prefer to co-reside with a joint family. However, there are other factors that can affect both decisions of women to withdraw from labour market and do child and elderly care to support to reduce the domestic work burden of the family (Debnath, 2015; Dhanaraj and Mambhare, 2019). Further, Dhanaraj and Mambhare (2019) examine the role of family structure and education women's work and found that education has a large impact on women's decision power through reducing cultural and traditional norms. They also suggested that co-residing in joint family reduces women's work participation in India.

There is empirical evidence that government intervention in child development and employment generation through Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) (Pankaj & Tankha, 2010; Pellissery & Jalan, 2011; Desai & Joshi, 2019) and integrated child development scheme (ICDS) (Davis et al., 2018) enables lower strata women to enter in labour force. In this paper, we focus on different mechanism through which co-residing with family affect's women's domestic and labour force participation.

3. Data and Methods

3.1.1 Data source

The study used unit-level data from the national Employment-Unemployment survey (EUS) conducted in 2011-12 and the Periodic labour Force survey (PLFS) conducted in 2017-18. The EUS and PLFS are stratified random sampling survey which represents national population (NSSO, 2014a; PLFS, 2019).

The survey provides data on individual and household characteristics such as household composition, education, consumption expenditure religion, social group, landholding, participation, and earnings in the labour market. In our analysis, we measure an individual's labour force participation using the "Usual Principal and Subsidiary Status (UPSS)" in the NSS and PLFS which classifies a respondent as working or not working during the reference period of 365 days preceding the date of the survey.

The analytical sample of the study is 150,047 in 2011-12 and 150,133 in 2017-18 working-age of 15 to 64 years women.

3.1.3 Outcome variables

In this study, the **female labour force participation rate (FLFPR)** is defined as employed and unemployed (seeking for work but currently not working) women aged 15-64 years during the 365 days preceding the date of the survey. **Domestic work participation rate** is defined as women aged 15-64 years who were engaged in 'domestic work only' and 'domestic and allied work' during the reference period of 365 days preceding the date of the survey.

3.1.4 Explanatory variables

This study also used several potential socio-demographic covariates to understand the determinants of female FLFPR and domestic work participation rate, which are age-group in years (15-24, 25-34, 35-49, 50-64), place of residence (rural, urban), education (illiterate, up to primary, middle, secondary, higher secondary, diploma/certificate, graduate and above), marital status (never married, ever married), social group (scheduled tribe, scheduled caste, other backward class, others), religion (Hindu, Muslim, Christian, Sikhism, others), Household size (≤ 4 members, more than 4 members), Household type based on main source of household income (self-employed in agriculture, self-employed in non-agriculture, regular wages/salary earnings, casual labour in agriculture, casual labour in non-agriculture, others), MPCE (1st, 2nd, 3rd, 4th, 5th) quintiles.

3.1.5 Co-residence status

To examine the co-residence behaviour, we construct six variables including households with 0-4 years' children (0,1, 2 and more), households with 5-14 years' children (0,1, 2 and more)), households with 65-79 years elderly (0,1, 2 and more), households with 80 years and above elderly (0,1and more), households with elderly female (65years and above) only (0,1 and more), and households with elderly (65years and above) male (0,1 and more). It is to note that these variables were constructed using complete member file and then restricted to only analytical sample that is, working aged women.

3.2 Analytical approach

For this study, first, we assessed the levels of domestic work and labour force participation across all selected background factors. It is worth remarking that these estimates were used using analytical weight. Second, binary logistic regression was performed to understand the association of family composition and other explanatory variables with both outcome variables that is, domestic and labour force participation which is adjusted for other socio-economic variables described in the list. Lastly, we ran binary logistic regression separate models to understand the interaction effect of different co-residence with dual dependent members on domestic work and labour force participation. For each model, co-residence variables are mutually exclusive and, we controlled all the above-mentioned explanatory variables. We have five models for both outcome variables including household with 0-4 years' children #household with 65-79 years elderly), (household with 5-14 years' children #household with 0-4 years' children), (household with 5-14 years' children #household with 65-79 years elderly), (household with 0-4 years' children #household with elderly female only), and (household with 0-4 years' children #household with elderly male only). In interaction effect, we have excluded 80 years and above elderly due to insufficient sample size. The regression estimates are reported in the form of an odds ratio at a 95% confidence interval. Lastly, we also investigated the co-residence effect on domestic work and labour force participation by urban-rural.

4. Results

4.1 Recent changes in female LFPR and domestic work participation rate

Trends Women's domestic and labour force participation for 2011-12 and 2017-18 across the selected socio-economic group in India is presented in Table 1. The findings reveal that female LFPR declined with a 24% of rate between 2011-12 and 2017-18 and reached to only a quarter of women (24.8%) in 2017-18, during the same time, with an increment rate of 9.7%, their participation in domestic activities reached to 59.9%. While a gigantic decline

(30% rate) in LFPR among rural women was observed, their participation in domestic activities increased to 59.9% in 2017-18 (16% rate).

Female LFPR declined across all age groups with the highest pace of about 41% among young (15-24 years) women, followed by, 25% in old (50-64 years) women. Domestic work participation across all age groups increased during the period. Female LFPR dropped across all educational groups except those who had any diploma or certificate course and had a graduate or above degree. While, a higher percentage of women who had primary or middle education, engaged in domestic duties, which again increased during the inter-survey period. However, women who had higher, or graduate and above degree had lower participation in the domestic duties, and their participation further declined during 2011-18. About one-fourth of never-married women were engaged in domestic work which increased by 9.5% rate during the period.

Across all the social groups, LFPR declined, however, a significant proportion of the women belonging to Scheduled Caste (29%) and Scheduled Tribe (27%) withdrawn from the labour force during 2011-18. Women from scheduled tribe had a low participation in domestic work, however, it increased by 27% rate during the period. Domestic work participation increased across all religions. Muslim (32%) and Sikh (49%) women's LFPR had extremely a sharp dipped during the period, and only 15% of Muslim and 16% of Sikh women were engaged in labour market in 2017-18. About three-fourths of Muslim women were engaged in domestic work in 2017-18, followed by, Sikh who also reported an increment of 25% during the period.

Women who belong to casual labour in non-agriculture and self-employed in agriculture were mostly withdrawn from labour market during the period. Although, domestic work participation increased among women from different household types, the maximum increment was observed in women from the households headed by casual labour in non-agriculture, followed by, self-employed in agriculture. The rate of withdrawing from labour force was the highest (about 33%) among women residing in the lowest quintile households, while, it was lower among women from the rich households. Across all MPCE groups, domestic work participation increased over time.

A higher percentage of women who live in households with larger family (more than four members) or with children under age five had withdrawn from the labour force and continue or started doing domestic duties over time. A higher percentage of women from the households having one or more children were engaged in domestic duties as compared to women from households with school-going children. Further, in contrast to women who were

living with one or more elderly men, a lower percentage of women who were living with elderly women, withdrawn from labour force and engaged in domestic duties.

4.2 Association of co-residence with children and elderly with women's engagement in labour force and domestic duties

Table 2 presents the estimate of logistic regression models applied on women's labour force participation outcome for 2011-12 and 2017-18. We found that residing in a larger family reduced women's chances of engagement in the labour force. The likelihood of women engagement in labour force was significantly lower for women living in households with at least one child, this propensity further reduced during the period. Further, likelihood of women engagement in labour force was consistently and significantly higher for those who were living with one or more elderly.

Women aged 25-34 years were about four (AOR:3.61, CI:3.42,3.80) times, and aged 35-49 years were about five (AOR:4.71, CI:4.45,4.97) times more likely to engaged in labour force in 2017-18 than younger cohort (age 15-24). Further, the likelihood of being in labour force increased over time among older women as compare to younger cohort. As compare to illiterate women, the chances of participating in labour force were significantly lower among educated women except among those who had a diploma or certificate. In 2017-18, women with a diploma were about four (OR:3.81, CI:3.36, 4.32) times more likely to participate in labour force as compared to illiterate. However, married women had significantly lower chance of engaging in labour force.

Table 3 presents the estimates of logistic regression analysis performed on the women's domestic work participation outcome for 2011-12 and 2017-18. In the fully adjusted model, estimates show that women from the larger families (more than 4 members) were more (adjusted odds ratio (AOR):1.30; CI:1.27,1.34) likely to do domestic work than from who lived in smaller families (less than 4 members), the odds of engagement in domestic work was significantly higher among women living in households with one or more children (under age 5 years) as compare to who were living in households with no child (under age 5 years). However, the odds of engagement in domestic work among women who resided with one or more school-going age children (5-14 years) was significantly lower than who lived with no such child for both survey periods. Further, odds of domestic work participation of women living with one or more elderly was significantly lower.

With increasing age, women are less likely to engage in domestic work. Compare to illiterate women, the odds of domestic work participation were significantly higher for

educated women except for those who had diploma or certificate. Compare to illiterates, women with diploma/certificate were about half time (AOR:0.47, CI:0.41,0.53; AOR:0.33, CI:0.64, 0.71) less likely to do domestic work. Married women were about 12 times (AOR:12.16, CI:11.60-12.74) more likely to do domestic work as compared to never-married women.

4.3 Association of co-residence with dual dependent members with women's engagement in labour force and domestic activities

As compare to women from the households with no young child and elderly, the likelihood of participating in the labour force was significantly higher among women from households with elderly members irrespective of residence status with young children (model-1 in table 4). In contrast to women living with no child, who resided with school-going aged (5-14 years) children were significantly more likely to engaged in the labour force, and who lived in households with young children only (under-five) were less likely to participate in labour force (model II in table 4). Similarly, women from the household consisting school-going aged children and elderly aged 65-79 years, were significantly more likely to participate in labour force. The findings reveal that women from the households having two or more school going aged children and elderly aged 65-79 years were about two times (AOR:2.01, 95% CI) more likely to work than who lived in households with no such members (Model III in table-4). Subsequently as shown in model IV (table-4), propensity to participate in labour force increased among women if they resided in the households having one or more elderly women only even though they co-resided with young children (under-five). However, this association is just opposite if women resided with elderly men only and young children (model V in table-4).

Women living with young children with no elderly members in the household had higher chance of doing domestic work which reduced if they live with at least one elderly aged 65-79 years (model I in table-5). Model II in this table suggested that women who were living with at least one school going age child had significantly lower probability of doing domestic work than those who live with no child under 15. Model III showed that co-residing with school-going age children or elderly aged 65-79 reduced domestic work participation of women as compare to who reside with none of them. Furthermore, women who live with young children (under-five) had higher likelihood of doing domestic duties which reduced if they co-reside with elderly women only (model IV in table-5) and increased if they co-reside with elderly men only (model V in table-5).

4.4 Association of co-residence with dependent members in selected socio-economic settings with women's participation in labour force

Irrespective of their socio-economic condition, women living with young children were less likely to participate in labour force; however, women from urban area, Other Backward Caste and Scheduled Tribes had lowest probability to join labour force if they had one child less than five years. Subsequently findings revealed that women have more probability to participate in labour force if they were residing with two or more children aged between 5-14 years. Furthermore, male elderly (only) in household reduced women's participation in labour force except those who had graduate or above level education. However, residing with female elderly members significantly increases the probability of women's participation in labour force in every socio-economic setting. Education became key driver of women's participation in labour force as findings in Table 6 show if women were graduate level or more education had significantly higher probability to join labour force.

5. Discussion

Female labour force participation has significantly declined across all the socio-economic groups overtime. It reveals that educational achievement and economic development is not able to increase the labour force participation of women. However, female labour force participation is constant in urban, which indicates this drop is mainly the outcome of rural women withdrawal from the labour force, and which is mainly due to increasing conventional education and household income in the rural area. Our findings suggest that women with the middle, secondary or higher secondary have mostly withdrawn from the workforce and engaged in domestic chores. This is in line with other studies such as Bhalla & Kaur, 2011; Kannan & Ravindran; 2012 who shows that attaining conventional education with conservative societies reduces women's work participation (Debnath, 2015; Dhanaraj and Mambhare, 2019).

First, the findings show that women's domestic work participation across socioeconomic groups is substantial higher and more than half of the women are exclusively engaged in domestic duties which have increased over time. Although, due to data limitation, the study could not assess the domestic work participation of women who were engaged in the labour force. Strategies to recognize the unpaid domestic work of women and reduce the burden of domestic work are critical and discussed recently (Singh & Pattanaik, 2020).

In India, caste is a significant factor that affects the individuals through the life course, and individual always want to experience upward mobility by maintaining their social

and economic status. Here, we found that women from the upper and other backward castes including lower-caste withdrawing themselves from labour force and engage in domestic chores to boast their upward mobility. This is in line with other studies which emphasise the caste effect on women's work participation (Rao, 2014; Eswaran et al., 2013; Munshi & Rosenzweig; 2006). Subsequently, we found that religion also plays an important role in women's life as it implies gender and social norms at large scale in India. In India, Historically, Muslim women are restricted to work outside from home, and most deprived, less educated, and experience various social and gender norms (Mammen & Paxson, 2000; Goldin, 1995). Hence, they have low participation in labour force and are mostly engaged in domestic chores. Additionally, we also observe a large decline in female labour force participation among Sikh women, and it may be the result of cultural factors and rising household income.

The paper finds that co-residing in the large family reduces women participation in labour force and increases domestic work participation. Other studies suggest that women from the large household are less likely to join the labour force as they have to perform domestic chores and other family responsibilities (Neetha, 2009b; Mukharjee, 2011). The age of family members as well gender also has large impact on women's participation in domestic work and labour force. Our findings suggest that women residing with at least one young child (under-five) have less participation in labour force as they are the primary caregiver of their children. Subsequently, as children grow, and join the school, they tend to more participate in labour force as they saved their time from child care. Women who reside with elderly (64-79) persons have significantly higher propensity to engage in labour force than in domestic work. However, this association is in different direction by rural-urban setting. In a rural area, women residing in household with elderly person have higher chance of doing domestic work than engaging in the labour force. However, in an urban area, the presence of the elderly may lead to women's work participation and reduces their burden of domestic chores (Table A2 & Table A3).

We further investigated interaction effect of co-residence of dual dependency age members on women's domestic work and labour force participation. The presence of school-going (5-14 years) age children with young children in the household, encourage women's labour force participation. Elder sons or daughters may take care of their younger siblings when their parents work outside the home particularly in Indian context. Most elder daughters tend to perform domestic chores such as cooking, cleaning, and take off their

younger siblings and boys mostly performs work related to domestic chores outside the home (Kambhampati & Rajan, 2008).

Results suggest that women living with young children (under-five) and elderly age between 65-79 years are significantly more likely to participate in the labour force, and their probability to join labour force increases if household consists two or more elderly persons. In such setting, the presence of elderly persons may reduce the burden of domestic chores and child care as they are available to perform domestic duties and take care of child. This result is in line with Bewdekar & Ladusingh, 2012; Ladusingh, 2013; Arpino, 2014; Dhanaraj & Mahambare, 2019. Findings suggest that women living with elderly women and under five children are more likely to participate in labour force as older women may help in domestic chores such as child caring, cooking, cleaning, and staying at home to look after. On the other hand, residing with elderly men along with young children reduces the labour force participation of women which may be due to the prevailing social and cultural norms which restrict young women to work outside the home and engaging in child and elderly care (Randive-Deshmukh, 2005; Subaiya & Vanneman, 2016; Mookerji, 2017).

We further assessed how living with dependent members in different socio-economic settings affects women's participation in labour force. Findings suggest that living with young children (under-five) significantly reduced probability of women's participation in labour force irrespective of their socio-economic condition. Further, findings also suggest that living with children (5-14 years) increases the women's labour force participation as they can take care of their younger siblings and helps in domestic chores. Subsequently our findings suggest that residing with elderly men restrict women to join labour force, which demonstrate the effect of patriarchal setting. However, this patriarchal effect disappears as women get higher education such as graduate and above level of degree. In each selected socio-economic environment, our findings reveal supportive evidence of female elderly in women's participation in labour force participation. Similarly, results suggest that education is a key factor as a driver of women's labour force participation irrespective of their family composition.

6. Conclusions

Across all socioeconomic groups, female LFPR has further dipped between 2011-12 and 2017-18 which is partially explained with the increment in the unpaid domestic work participation of women. The greater decline in female LFPR in the rural area is observed. Further, women with higher and secondary education, younger and unmarried females

experienced the most decline in LFPR. Interestingly, this study finds that vocational training such as a diploma or certificate course may be the key to increase female LFPR, and if women are going for higher education, there will be more work opportunities for them.

In India, debate on female labour force participation mostly neglected cultural factors such as family size, age, and gender composition of family members in the household. In this study, we focus on one of the most common culture i.e., the effect of co-residence and gender composition of elderly members on women's domestic and labour force participation. We find that residing in a large family may increase the burden of domestic chores and subsequently decrease the labour force participation of women. Women who reside with under-five children and male elderly in the family are more likely to do household work which reduces their participation in labour force. However, residing in the households with school-going age (5-14 years) children, or with older person (age 65-79 years) reduces the burden of women's domestic work and increase their labour force participation. This familial support seems more true when they reside with elderly women, as women who live with young children and elderly women, have higher likelihood of engaging in labour force. The study present evidence that women who co-resident with elderly members is encouraging their labour force participation in urban setting not in rural areas. This study reveals that education can mitigate the adverse effect of family care and provide supportive environment for women's participation in labour force. Finally, this study present strong evidence of gender role on women's labour force participation in India. This study suggests that education can weaken the effect of patriarchal and socio-cultural norms in the way of women empowerment. This study presents salient findings of co-residence behaviour that are highly relevant for policy discussions focussed on women's domestic work and labour force participation in India. Recognition of the unpaid domestic work done by women needs more attention by policymakers. Elderly persons should not only consider as burden to the family rather they may be providing intergenerational support to the family. Female labour force participation may increase in India with the support of elderly members of the families, if persons are able to break the work-related gender norms. Further the rural society requires more attention in this regard.

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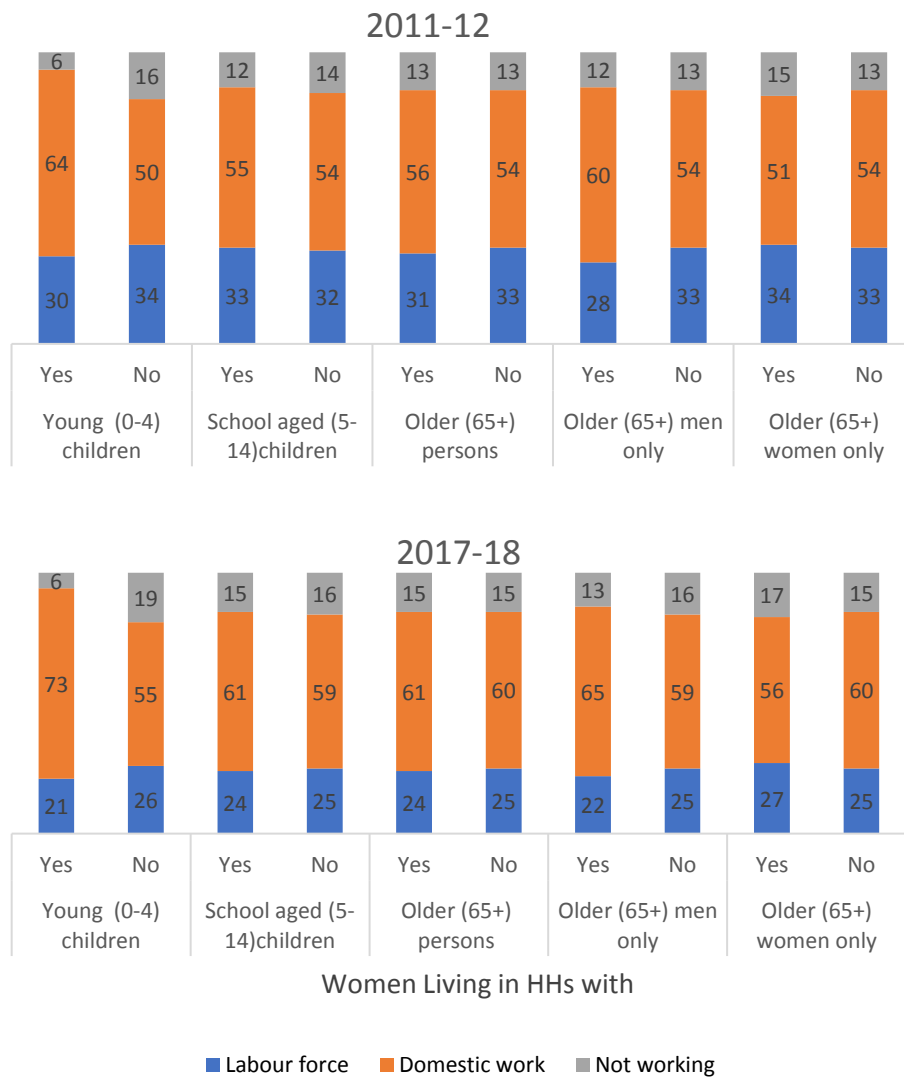
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Figures:

Figure 1: Women’s participation in labour force and domestic work (exclusively) by their co-residence status in India



Tables:

Table 1: Percentage of women engaged in domestic work and labour force participation in India, NSS (2011-12) and PLFS (2017-18)

Background Characteristics	Domestic work participation			Labour force participation		
	2011-12	2017-18	% change	2011-12	2017-18	% change
Sector						
Rural	51.1	59.5	16.4	37.5	26.1	-30.4
Urban	62.6	60.9	-2.7	21.7	21.7	0.0
Age						
15-24	41.9	43.8	4.5	20.3	11.9	-41.4
25-34	63.2	69.5	10.0	35.5	28.1	-20.8
35-49	57.1	64.2	12.4	41.9	33.7	-19.6
50-64	57.8	63.9	10.6	32.7	24.6	-24.8
Education						
Illiterate	53.0	61.7	16.4	43.0	32.1	-25.3
Up to primary	60.8	68.0	11.8	34.1	26.3	-22.9
Middle	55.9	64.2	14.8	24.8	18.0	-27.4
Secondary	52.8	53.5	1.3	18.8	14.9	-20.7
higher secondary	49.0	48.4	-1.2	15.6	13.5	-13.5
diploma/certificate	31.7	34.4	8.5	44.2	47.7	7.9
graduate and above	53.4	52.6	-1.5	33.6	34.1	1.5
Marital Status						
Never Married	23.1	25.3	9.5	20.8	14.9	-28.4
Ever Married	61.8	68.6	11.0	35.5	27.3	-23.1
Social Group						
Scheduled Tribe	37.9	48.3	27.4	52.3	38.2	-27.0
Scheduled Caste	51.4	59.5	15.8	36.9	26.2	-29.0
Other Backward Class	55.3	60.0	8.5	32.4	24.3	-25.0
Others	60.4	63.6	5.3	25.0	20.2	-19.2
Religion						
Hindu	53.1	58.6	10.4	34.3	26.1	-23.9
Muslim	66.4	70.2	5.7	21.7	14.7	-32.3
Christian	42.8	50.0	16.8	41.6	32.1	-22.8
Sikhism	54.5	68.0	24.8	31.3	16.0	-48.9
Others	47.2	52.8	11.9	37.6	31.9	-15.2
Household size						
<= 4 member	53.1	57.4	8.1	36.4	28.6	-21.4
more than 4 members	55.8	62.1	11.3	30.0	21.4	-28.7
Household type						
Self-employed in agriculture	53.4	60.7	13.7	33.7	25.2	-25.2
Self-employed in non-agriculture	60.7	62.2	2.5	26.2	23.5	-10.3
Regular wages/Salary earning	56.4	60.1	6.6	31.3	26.2	-16.3
Casual labour in agriculture	44.1	47.5	7.7	47.9	42.1	-12.1
Casual labour in non-agriculture	53.6	64.9	21.1	37.1	22.9	-38.3
Others	62.6	55.2	-11.8	7.1	7.0	-1.4
MPCE						
1 st quintile	54.1	60.7	12.2	36.0	25.0	-30.6
2 nd quintile	54.8	61.9	13.0	34.5	23.7	-31.3

3 rd quintile		52.9	61.0	15.3	35.2	24.6	-30.1
4 th quintile		54.1	59.3	9.6	33.2	25.9	-22.0
5 th quintile		56.9	57.3	0.7	26.1	24.9	-4.6
Household with child (0-4)							
	0	50.4	55.0	9.2	33.9	26.4	-22.3
	1	63.6	71.7	12.8	30.3	20.8	-31.2
2 and more		64.6	74.5	15.2	29.7	20.1	-32.5
Household with child (5-14)							
	0	54.2	58.8	8.6	32.3	25.0	-22.4
	1	55.1	59.7	8.3	31.3	23.9	-23.8
2 and more		54.8	62.5	13.9	34.6	25.1	-27.6
Household with elderly (65-79)							
	0	54.3	59.5	9.6	33.0	24.9	-24.5
	1	56.4	61.8	9.7	31.6	24.6	-22.2
2 and more		53.0	61.0	15.0	31.3	22.0	-29.7
Household with elderly (80 and above)							
0		54.5	60.0	10.1	33.3	24.7	-25.9
1 and more		56.7	55.7	-1.9	32.8	27.7	-15.5
Household with elderly women (65 and above) only							
0		54.9	60.3	9.9	32.6	24.5	-24.8
1 and more		51.2	55.8	8.9	34.2	27.1	-20.7
Household with elderly men (65 and above) only							
0		53.9	59.2	9.7	32.9	25.2	-23.5
1 and more		59.6	64.9	8.9	28.7	22.1	-22.9
Total		54.6	59.9	9.7	32.8	24.8	-24.4

Note: % change [(2017-18) -(2011-12)]/(2011-12)

Table 2: Association of household size, composition and socioeconomic variables with women's domestic work participation in India, NSS (2011-12) and PLFS (2017-18)

Background variables	2011-12		2017-18		change
	OR	CI	OR	CI	
Household with child (0-4)					
0 [®]					
1	1.14***	(1.11-1.18)	1.24***	(1.20-1.28)	0.92
2 and more	1.13***	(1.08-1.17)	1.25***	(1.18-1.31)	0.90
Household with child (5-14)					
0 [®]					
1	0.86***	(0.83-0.88)	0.84***	(0.82-0.87)	1.02
2 and more	0.80***	(0.77-0.82)	0.78***	(0.75-0.80)	1.03
Household with elderly (65-79)					
0 [®]					
1	0.97	(0.94-1.01)	1.01	(0.97-1.04)	0.97
2 and more	0.89***	(0.83-0.96)	0.95	(0.88-1.02)	0.94
Household with elderly (80 and above)					
0 [®]					
1 and more	0.89***	(0.83-0.95)	0.91**	(0.85-0.97)	0.97
Household size					
<= 4 member [®]					
more than 4 members	1.30***	(1.27-1.34)	1.30***	(1.26-1.34)	1.00
Sector					

Rural®					
Urban	1.72***	(1.67-1.76)	1.31***	(1.27-1.34)	1.31
Age					
15-24®					
25-34	0.96*	(0.92-1.01)	1.01	(0.97-1.06)	0.95
35-49	0.75***	(0.72-0.79)	0.66***	(0.63-0.69)	1.14
50-64	0.71***	(0.68-0.75)	0.64***	(0.61-0.68)	1.11
Education					
Illiterate®					
Up to primary	1.53***	(1.48-1.58)	1.35***	(1.30-1.40)	1.13
Middle	1.65***	(1.59-1.71)	1.67***	(1.61-1.73)	0.99
Secondary	1.57***	(1.51-1.64)	1.13***	(1.09-1.18)	1.39
higher secondary	1.37***	(1.31-1.44)	0.97	(0.92-1.02)	1.42
diploma/certificate	0.47***	(0.41-0.53)	0.33***	(0.29-0.38)	1.42
graduate and above	0.99	(0.94-1.04)	0.68***	(0.64-0.71)	1.46
Marital Status					
Never Married®					
Ever Married	10.66***	(10.19-11.16)	12.16***	11.60-12.74)	0.88
Religion					
Hindu®					
Muslim	1.61***	(1.55-1.66)	1.67***	(1.61-1.73)	0.96
Christian	0.75***	(0.71-0.79)	0.93**	(0.88-0.98)	0.80
Sikhism	1.05	(0.97-1.13)	1.70***	(1.56-1.85)	0.62
Others	0.69***	(0.64-0.75)	0.79***	(0.73-0.85)	0.88
Social Group					
Scheduled Tribe ®					
Scheduled Caste	1.52***	(1.59-1.60)	1.33***	(1.27-1.39)	1.14
Other Backward Class	1.53***	(1.47-1.60)	1.28***	(1.22-1.33)	1.20
Others	1.75***	(1.68-1.83)	1.46***	(1.40-1.53)	1.20
Household type					
Self-employed in agriculture®					
Self-employed in non-agriculture	1.13***	(1.10-1.16)	1.00	(0.97-1.03)	1.14
Regular wages/Salary earning	1.00	(0.96-1.03)	0.90***	(0.86-0.93)	1.11
Casual labour in agriculture	0.74***	(0.70-0.78)	0.54***	(0.51-0.57)	1.37
Casual labour in non-agriculture	0.97	(0.93-1.02)	1.01	(0.96-1.06)	0.96
Others	1.57***	(1.49-1.66)	0.87***	(0.83-0.91)	1.81
MPCE					
1 st quintile®					
2 nd quintile	0.88***	(0.84-0.92)	0.94***	(0.90-0.98)	0.94
3 rd quintile	0.79***	(0.75-0.82)	0.85***	(0.82-0.89)	0.92
4 th quintile	0.78***	(0.75-0.82)	0.84***	(0.81-0.88)	0.93
5 th quintile	0.79***	(0.75-0.82)	0.84***	(0.81-0.88)	0.93

Note: change [(2011-12)/(2017-18)];significance level: ***p<0.01, **<0.05, *p<0.1

Table 3 Association of household size, composition and socioeconomic variables with women's labour force participation in India, NSS (2011-12) and PLFS (2017-18)

Background variables	2011-12		2017-18		change
	OR	CI	OR	CI	
Household with child (0-4)					
0 [®]					
1	0.95***	(0.92-0.98)	0.84***	(0.81-0.87)	1.13
2 and more	0.95**	(0.91-0.99)	0.84***	(0.80-0.89)	1.12
Household with child (5-14)					
0 [®]					
1	0.92***	(0.89-0.95)	0.87***	(0.84-0.90)	1.06
2 and more	1.00	(0.97-1.03)	0.94***	(0.91-0.97)	1.06
Household with elderly (65-79)					
0 [®]					
1	1.09***	(1.05-1.12)	1.10***	(1.06-1.14)	0.99
2 and more	1.20***	(1.12-1.29)	1.16***	(1.06-1.26)	1.04
Household with elderly (80 and above)					
0 [®]					
1 and more	1.21***	(1.13-1.29)	1.18***	(1.10-1.27)	1.02
Household size					
<= 4 member [®]					
more than 4 members	0.71***	(0.69-0.74)	0.77***	(0.75-0.80)	0.93
Sector					
Rural [®]					
Urban	0.55***	(0.53-0.56)	0.71***	(0.68-0.73)	0.78
Age					
15-24 [®]					
25-34	2.38***	(2.28-2.48)	3.61***	(3.42-3.80)	0.66
35-49	2.72***	(2.60-2.85)	4.71***	(4.45-4.97)	0.58
50-64	1.81***	(1.72-1.91)	3.05***	(2.87-3.24)	0.60
Education					
Illiterate [®]					
Up to primary	0.77***	(0.75-0.80)	0.87***	(0.84-0.91)	0.88
Middle	0.58***	(0.55-0.60)	0.62***	(0.59-0.65)	0.93
Secondary	0.46***	(0.44-0.48)	0.65***	(0.62-0.68)	0.72
higher secondary	0.48***	(0.45-0.50)	0.75***	(0.71-0.79)	0.64
diploma/certificate	2.26***	(2.01-2.53)	3.81***	(3.36-4.32)	0.59
graduate and above	1.26***	(1.20-1.32)	2.28***	(2.17-2.40)	0.55
Marital Status					
Never Married [®]					
Ever Married	0.80***	(0.77-0.84)	0.60***	(0.57-0.63)	1.35
Religion					
Hindu [®]					
Muslim	0.66***	(0.63-0.68)	0.66***	(0.63-0.69)	0.99
Christian	1.42***	(1.35-1.49)	1.13***	(1.07-1.20)	1.25
Sikhism	1.11**	(1.02-1.20)	0.59***	(0.54-0.65)	1.87
Others	1.32***	(1.22-1.43)	1.32***	(1.22-1.42)	1.00
Social Group					
Scheduled Tribe [®]					

Scheduled Caste	0.68***	(0.65-0.71)	0.76***	(0.73-0.80)	0.89
Other Backward Class	0.64***	(0.62-0.67)	0.75***	(0.71-0.78)	0.86
Others	0.54***	(0.52-0.57)	0.61***	(0.59-0.64)	0.88
Household type					
Self-employed in agriculture®					
Self-employed in non-agriculture	0.86***	(0.84-0.89)	0.98	(0.95-1.02)	0.88
Regular wages/Salary earning	0.98	(0.94-1.01)	1.09***	(1.05-1.13)	0.90
Casual labour in agriculture	1.38***	(1.30-1.46)	1.92***	(1.82-2.03)	0.72
Casual labour in non-agriculture	1.01	(0.96-1.05)	0.95*	(0.90-1.01)	1.06
Others	0.24***	(0.22-0.26)	0.28***	(0.26-0.30)	0.86
MPCE					
1 st quintile®					
2 nd quintile	1.09***	(1.04-1.13)	1.02	(1.07-1.16)	1.06
3 rd quintile	1.16***	(1.11-1.21)	1.11***	(1.16-1.16)	1.04
4 th quintile	1.09***	(1.04-1.14)	1.07***	(1.12-1.16)	1.02
5 th quintile	0.98	(0.94-1.03)	0.95**	(1.00-1.16)	1.03

Note: change [(2011-12)/(2017-18)];significance level: ***p<0.01, **<0.05, *p<0.1

Table 4: Effect of presence of dual dependent members in household on domestic work participation of women in India, NSS (2011-12) and PLFS (2017-18)

	2011-12		2017-18		change
	OR	CI	OR	CI	
Model I					
Household with child (0-4) #elderly (65-79) member					
0*0®					
0* 1	1.00	(0.96-1.04)	1.05**	(1.01-1.09)	0.95
0* 2	0.80***	(0.73-0.88)	0.84***	(0.77-0.92)	0.95
1 *0	1.19***	(1.16-1.23)	1.33***	(1.28-1.38)	0.90
1* 1	1.13***	(1.06-1.20)	1.20***	(1.11-1.29)	0.94
1 *2	1.11	(0.95-1.29)	1.21**	(1.02-1.44)	0.91
2 *0	1.16***	(1.11-1.21)	1.28***	(1.21-1.35)	0.91
2 *1	0.95	(0.87-1.04)	1.10*	(0.98-1.24)	0.86
2* 2	0.87	(0.72-1.05)	1.06	(0.83-1.37)	0.82
Model II					
Household with child (5-14) #child (0-4) member					
0*0®					
0* 1	1.19***	(1.14-1.25)	1.32***	(1.26-1.38)	0.90
0* 2	1.03	(0.97-1.10)	1.14***	(1.07-1.22)	0.91
1 *0	0.83***	(0.80-0.86)	0.80***	(0.78-0.83)	1.04
1* 1	1.00	(0.95-1.05)	1.02	(0.96-1.07)	0.98
1 *2	0.87***	(0.80-0.94)	0.92	(0.84-1.02)	0.94
2 *0	0.77***	(0.74-0.80)	0.74***	(0.71-0.76)	1.05
2 *1	0.78***	(0.73-0.82)	0.76***	(0.71-0.82)	1.02
2* 2	0.70***	(0.64-0.76)	0.59***	(0.52-0.66)	1.19
Model III					
Household with child (5-14) #elderly (65-79) member					

0*0 [®]					
0* 1	1.03	(0.98-1.08)	1.06***	(1.01-1.11)	0.97
0* 2	0.87**	(0.77-0.99)	0.82**	(0.73-0.92)	1.07
1 *0	0.86***	(0.83-0.88)	0.81***	(0.78-0.83)	1.06
1* 1	0.75***	(0.70-0.80)	0.77***	(0.72-0.82)	0.97
1 *2	0.66***	(0.57-0.76)	0.66***	(0.57-0.76)	1.01
2 *0	0.74***	(0.72-0.77)	0.69***	(0.67-0.72)	1.07
2 *1	0.66***	(0.62-0.70)	0.56***	(0.52-0.60)	1.17
2* 2	0.53***	(0.47-0.60)	0.50***	(0.43-0.57)	1.07

Model IV

Household with child (0-4) # elderly (65 and above) women only

0*0 [®]					
0*1	0.77***	(0.74-0.81)	0.75***	(0.71-0.78)	1.04
1*0	1.17***	(1.14-1.21)	1.28***	(1.23-1.32)	0.92
1*1	0.94	(0.87-1.02)	1.03	(0.94-1.13)	0.92
2*0	1.11***	(1.06-1.16)	1.20***	(1.14-1.26)	0.93
2*1	0.79***	(0.71-0.89)	0.94	(0.82-1.09)	0.84

Model V

Household with child (0-4) # elderly (65 and above) men only

0*0 [®]					
0*1	1.13***	(1.08-1.18)	1.23***	(1.18-1.28)	0.92
1*0	1.20***	(1.17-1.24)	1.34***	(1.29-1.39)	0.90
1*1	1.26***	(1.17-1.35)	1.37***	(1.26-1.47)	0.92
2*0	1.18***	(1.13-1.24)	1.31***	(1.24-1.38)	0.90
2*1	1.01	(0.92-1.11)	1.19**	(1.05-1.33)	0.85

Note: change [(2011-12)/(2017-18)];significance level: ***p<0.01, **<0.05, *p<0.1; all other variables are controlled for this model.

Table 5: Effect of presence of dual dependent members in the household on women labour force participation in India, NSS (2011-12) and PLFS (2017-18)

	2011-12		2017-18		Change
	OR	CI	OR	CI	
Model I					
Household with child (0-4) #elderly (65-79) member					
0*0 [®]					
0* 1	1.07***	(1.03-1.12)	1.09***	(1.04-1.13)	0.98
0* 2	1.45***	(1.32-1.59)	1.43***	(1.30-1.58)	1.01
1 *0	0.88***	(0.85-0.91)	0.78***	(0.75-0.81)	1.14
1* 1	0.96	(0.89-1.03)	0.87***	(0.80-0.94)	1.10
1 *2	1.15*	(0.98-1.35)	1.10	(0.92-1.32)	1.04
2 *0	0.93**	(0.89-0.98)	0.85***	(0.80-0.90)	1.10
2 *1	1.13**	(1.02-1.24)	1.02	(0.90-1.15)	1.11
2* 2	1.48***	(1.22-1.80)	1.27*	(0.97-1.67)	1.17
Model II					
Household with child (5-14) #child (0-4) member					
0*0 [®]					

0* 1	0.81***	(0.77-0.84)	0.70***	(0.66-0.73)	1.16
0* 2	0.91***	(0.85-0.97)	0.80***	(0.74-0.86)	1.14
1 *0	0.98	(0.95-1.02)	0.96**	(0.92-0.99)	1.03
1* 1	0.96	(0.91-1.02)	0.86***	(0.81-0.91)	1.12
1 *2	1.11**	(1.02-1.20)	0.96	(0.86-1.06)	1.16
2 *0	1.17***	(1.13-1.21)	1.13***	(1.08-1.17)	1.04
2 *1	1.20***	(1.13-1.27)	1.08*	(1.00-1.16)	1.11
2* 2	1.40***	(1.28-1.52)	1.40***	(1.24-1.59)	1.00
Model III					
Household with child (5-14) #elderly (65-79) member					
0*0®					
0* 1	1.07**	(1.01-1.12)	1.07**	(1.02-1.12)	1.00
0* 2	1.42***	(1.25-1.61)	1.48***	(1.31-1.68)	0.96
1 *0	1.03*	(1.00-1.07)	1.02	(0.98-1.05)	1.01
1* 1	1.22***	(1.14-1.30)	1.18***	(1.10-1.27)	1.03
1 *2	1.46***	(1.26-1.68)	1.51***	(1.30-1.77)	0.96
2 *0	1.26***	(1.22-1.30)	1.25***	(1.21-1.30)	1.00
2 *1	1.40***	(1.32-1.49)	1.54***	(1.43-1.67)	0.91
2* 2	2.01***	(1.79-2.26)	2.01***	(1.73-2.34)	1.00
Model IV					
Household with child (0-4) # elderly (65 and above) women only					
0*0®					
0*1	1.42***	(1.36-1.49)	1.49***	(1.43-1.56)	0.95
1*0	0.89***	(0.86-0.92)	0.80***	(0.77-0.83)	1.11
1*1	1.30***	(1.20-1.42)	1.12**	(1.02-1.24)	1.16
2*0	0.96	(0.92-1.01)	0.89***	(0.84-0.94)	1.09
2*1	1.56***	(1.39-1.74)	1.32***	(1.13-1.54)	1.18
Model V					
Household with child (0-4) # elderly (65 and above) men only					
0*0®					
0*1	0.95***	(0.91-0.99)	0.94**	(0.89-0.98)	1.01
1*0	0.88***	(0.85-0.90)	0.77***	(0.74-0.80)	1.14
1*1	0.83***	(0.77-0.89)	0.77***	(0.71-0.84)	1.07
2*0	0.91***	(0.87-0.95)	0.82***	(0.78-0.87)	1.10
2*1	1.07	(0.97-1.18)	0.91	(0.80-1.04)	1.17

Note: change [(2011-12)/(2017-18)];significance level: ***p<0.01, **<0.05, *p<0.1; all other variables are controlled for this model.

Table 6: Effect of dependent members in the selected socio-economic settings in the household on women labour force participation in India, PLFS (2017-18)

Background	Rural	Urban	Poor est	Riche st	illiter ate	Graduate or more	SC	ST	OBC	Othe rs
	OR(C I)	OR(CI)	OR(CI)	OR(CI)	OR(CI)	OR(CI)	OR(CI)	OR(C I)	OR(CI)	OR(CI)
Household with child (0-4)										
0®										
								0.78*		
1	0.85* ** (0.82, 0.89)	0.78*** (0.74, 0.83)	0.87* ** (0.81, 0.94)	0.85* ** (0.79, 0.93)	0.80* ** (0.75, 0.86)	0.97 (0.87, 1.07)	0.93 (0.86, 1.02)	** (0.71, 0.85)	0.77* ** (0.72, 0.82)	0.88* ** (0.82, 0.95)
2 or more	0.96 (0.90, 1.03)	0.92(0.83, 1.03)	1.02 (0.92, 1.13)	1.10 (0.92, 1.32)	0.92 (0.84, 1.02)	1.07 (0.89, 1.27)	1.16* (1.01, 1.33)	* (0.83, 1.08)	0.94 (0.83, 1.00)	0.96 (0.85, 1.09)
Household with child (5-14)										
0®										
1	1.08* ** (1.03, 1.12)	1.00 (0.95, 1.05)	1.10* * (1.02, 1.18)	1.01 (0.94, 1.08)	0.99 (0.93, 1.05)	1.13*** (1.04, 1.24)	0.96 (0.89, 1.04)	1.02 (0.95, 1.11)	1.07* ** (1.02, 1.13)	1.04 (0.98, 1.10)
2 or more	1.32* ** (1.26, 1.38)	1.19*** (1.11, 1.26)	1.33* ** (1.23, 1.43)	1.37* ** (1.25, 1.50)	0.99 (0.92, 1.06)	1.24*** (1.10, 1.27)	** (1.09, 1.30)	** (1.18, 1.41)	** (1.14, 1.29)	** (1.27, 1.47)
Household with elderly men only (65 or more)										
0®										
1 or more	0.85* ** (0.80, 0.89)	1.05 (0.99, 1.12)	0.92* (0.84, 1.00)	0.95 (0.88, 1.04)	0.83* ** (0.76, 0.89)	1.27*** (1.15, 1.40)	0.86* ** (0.77, 0.96)	0.91* (0.82, 1.01)	** (0.85, 0.97)	0.98 (0.91, 1.05)
Household with elderly women only (65 or more)										
0®										
1 or more	1.62* ** (1.53, 1.71)	1.44*** (1.35, 1.54)	1.62* ** (1.48, 1.78)	1.60* ** (1.47, 1.76)	1.74* ** (1.59, 1.91)	1.39*** (1.25, 1.54)	1.66* ** (1.47, 1.87)	1.53* ** (1.37, 1.70)	1.48* ** (1.38, 1.58)	1.56* ** (1.45, 1.68)

Note: significance level: ***p<0.01, **<0.05, *p<0.1; all other variables are controlled for this model.