

The Extent of Female Unpaid Work in India: A Case of Rural Agricultural Households

Abstract

This study analyses the extent and nature of female unpaid work in the context of rural households in India. In particular, the study looks at the relationship between land ownership and the extent of domestic duties performed by females, adjusted by family size, in rural agricultural households. Further, the study considers the role of socioeconomic and socio-religious class and the engagement of women in domestic duties. The study uses the Indian National Sample Survey quinquennial round of employment and unemployment survey data for the period 2011-2012. To find out the relationship between various land ownership modalities and domestic duties performed by females, the study makes use of the fractional logit regression model. The empirical result suggests that there is a greater probability of more women workers getting involved in unpaid work as the land-ownership size of the household increases. Further, it is seen that the probability that females engaged in unpaid work is greater for those in casual agricultural households with large land cultivated than for those who are in self-employed households. The study finds that the proportion of rural women engaged in domestic duties is 34 per cent, and the majority of them want to work either on a regular or part-time basis (74 per cent) as well as be able to attend to domestic duties. These results suggest that more effective labour market policy, which will encourage women to participate in paid work, is needed. Moreover, family-friendly policies and initiatives that encourage a more equitable sharing of the burden of care and household chores between males and females are required.

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1. Introduction

The economic well-being of a country is generally measured by per capita GDP. However, levels will be underreported if there is a considerable amount of unpaid work being carried out. Additionally, gains will be over-reported if GDP growth occurs because of reductions in unpaid work and increases in paid work (Stiglitz and others, 2009). Ignoring home production

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may also bias measures of income inequality and poverty rates (Abraham and Mackie, 2005).

Unpaid work among women, though not usually recognized and accounted for in economic analysis, is an inherent component of an economy. Under Sustainable Development Goal (SDG) 5 “Achieve gender equality and empower all women and girls”, there is a target to recognize and value unpaid care and domestic work. For this purpose, the acknowledgement is to be achieved through the provision of public services, infrastructure and social protection, along with shared responsibility within households. Unpaid work is largely family work and work inside household enterprises. Furthermore, unpaid work includes outputs for sales or consumption associated with households.

In India, there are two main categories of unpaid female workers. The first are self-employed women who are mere helpers in family enterprises and do not earn any regular wages. The second are women who are out of the purview of the definition of workers but are engaged in domestic work, some of which provides economic gains to households. Attention to increased labour force participation captures only part of the changes in the two women’s work roles outline above.

In general experience shows that the dramatic shift in women’s work roles come about due to the change from primarily unpaid work at home to a combination of paid market work and traditional unpaid work (Brown and others, 1987). The dual role of women as a paid worker outside the family and an unpaid worker in the household contributes significantly, in real terms, to the productivity of a country. However, throughout the world, rural women are underrepresented in the development process (Goswami and Bordoloi, 2013, p. 2). A proper valuation of unpaid work is very difficult due to the unavailability of data on time undertaking such activities. In this context, labour force surveys and national income accounting statistics underestimate the value of unpaid work.

In spite of such shortcomings, there is substantial evidence showing that women engaged in both paid and unpaid work generally spend longer working hours than men. Additionally, on average, women spend more time in domestic work compared to men (Kulshreshtha and Singh, 2005; Frances and Russel, 2005).

India is mainly an agricultural economy, with 70 per cent of the population residing in rural areas (Census, 2011) and 50 per cent of it depending on agriculture as main source of income (NSSO 68th Round).

Women, in India mainly engage in the agricultural sector to pursue their livelihoods, and play a crucial role in various aspects of agricultural development including, main crop production, livestock production, horticulture, post-harvesting operations, agro/social forestry and fishing (Lal and Khurana, 2011).

As well as doing agricultural work, women help with household activities such as collecting fuel and water, preparing food, caring for family members and maintaining the house. However, while many of these activities are not defined as “economically active employment” in national accounts, they are essential to the well-being of rural households (Doss, 2011).

In this paper an attempt has been made to study the extent and nature of female unpaid work in rural households. The main research question is whether there is any relation between per household number of females engaged in domestic duties and family size in the rural agricultural household. In this context, the paper examines the relationship between land ownership and the extent of domestic duties performed by females adjusted by family size in the rural agricultural household.

The paper is organized as follows: section 2 presents the literature review of the study; section 3 deals with data sources and the methodology used in the study; section 4 presents the empirical results of the study; and section 5 concludes the paper.

2. Literature review

Women’s participation in the labour force can be seen as an indication of declining discrimination and increasing empowerment of women (Mammen and Paxson, 2000). Furthermore, an increase in the female labour supply can be seen as an insurance mechanism for households (Bhalotra and Aponte, 2010). The labour force participation rate for less-educated women tends to be counter-cyclical whereas for those who are highly educated, it is pro-cyclical (Bhalotra and Aponte 2009). The former situation is due to the ‘added worker effect’: more participation to compensate for household income shocks, and the latter is to protect against the ‘discouraged worker effect’ (withdrawal from the labour market).

The traditional framework for analysing the decision of women to join the labour market goes back to Mincer (1962), who considers that agents allocate their time between leisure, work at home and work in the market.

Females also make their decisions on participating in the labour market by considering time allocations, not only between leisure and labour trade-offs but also home-based production of goods and services including caring for children (Becker, 1965). The ‘collective’ household labour supply model is explicitly based on individual preferences, and control over resources influences the bargaining that occurs within the household. This model implies that women’s greater control over household resources may increase their welfare by enhancing their bargaining power. But empirical evidence on the ‘collective model’ in developing countries has hinted that women actually receive fewer productive resources within households and therefore have less bargaining power (Mammen and Paxson, 2000). Important studies also include wages as a key driver of female labour supply (Heckman and MaCurdy, 1980; Jaumotte, 2003). They find that working for a wage is chosen by women only if earnings at least make up for lost home production (and

associated costs), implying a higher elasticity of female labour supply relative to wages.

The struggle for women to reconcile care responsibilities with paid employment can lead to “occupational downgrading”, where women choose employment below their skill level and accept poorer conditions (Hegewisch and Gornick, 2011). Women and girls across all societies undertake the bulk of ‘unpaid care work’, despite substantive increases in female labour force participation (Esplen, 2009; Kabeer, 2007).

Heintz and Pickbourn (2013), in an article on the determinants of selection into non-agricultural self-employment in Ghana, using GLSS-5 (Ghana Living Standard Survey, 2005-2006), argue that participation in informal employment can also be understood as an outcome of choices made in the context of structural constraints outside the labour market. Such constraints include the distribution of assets, access to credit, education and social norms of household provisioning. On average, women specialize in both unpaid work and non-agricultural self-employment in households with young children, while men specialize in other forms of paid employment.

Another study, by Gallaway and Bernasek (2002), finds that education and family responsibilities are important factors in determining both labour force participation and sector of employment. Moreover, the presence of infants and toddlers decreases the likelihood that a woman will participate in paid employment outside the home relative to work in the home. It also increases the odds that a woman will participate in informal sector employment relative to formal sector employment. The study results suggest that it is the most marginalized women, those with the least education and potential earnings, who work in the informal sector. The authors thus emphasize the need to address the issues of education of women and child care if women are to gain greater access to opportunities in the formal sector, where the quality of employment tends to be superior.

Dogrul (2012), in a study of the urban labour market in Turkey, identifies education as a major factor determining participation in modern wage employment. The findings show that education also has a negative impact on informal sector employment; possible reasons are that success in informal sector employment largely depends on skills and capital, rather than a high level of education. As a result, the proportion of working women is higher in the informal than in the formal sector.

The labour force participation rate of women in India is mainly influenced by the time they spend undertaking domestic responsibilities. Further, social norms tend to attribute the primary responsibility in securing household income through employment to men, while women are expected to devote their time to domestic care (Das, 2006). Various surveys by the National Sample Survey Organisation (NSSO) of India on the ‘Employment and Unemployment Situation in India’ reveal that 90 per cent of women who do not participate in the workforce attribute a “pressing need for domestic work” as the primary cause for their non-participation (Hirway and Jose, 2011). It is seen that persistent demand for childcare, an unequal division of

labour and an inequitable distribution of time within the household force the women to drop out from the labour market. Moreover, conflicts between women's expectations of higher market wages and household norms pertaining to female seclusion amongst higher castes are noted by Eswaran and others (2013). Another explanation for women not participating in paid work is the conflict between higher expected market wages and the lack of job opportunities in certain areas.

Female labour force participation rates in India vary widely between urban and rural areas. Labour force participation of women in rural areas is much higher than that of women in urban areas (40 and 20 per cent respectively, NSSO, 2011-2012). There is also a growing gap between male and female labour force participation rates. These gender gaps are particularly pronounced in urban areas, where they are wider, and average some 60 percentage points. In rural areas, participation gaps between males and females average around 45 percentage points (NSSO, 2011-2012). A number of empirical papers have examined low and declining female labour force participation in India, with many focusing on the role of educational attainment and household income (Mammen and Paxson, 2000; Klase and Pieters, 2012; Bhalla and Kaur, 2013; Eckstein and Lifshitz, 2011). On the labour supply side, the main drivers are found to be raising household incomes, husband's education, and the stigma against educated women seeking menial work. On the labour demand side, it is noted that employment in sectors appropriate for educated women grow less than the supply of educated workers, leading to many women withdrawing from the labour force. There is thus a need for policies to not just upgrade women's education and skills so that they can get better opportunities in the labour market, but to also ensure that there are jobs available for them.

Empirical labour market evidence shows that women in India are predominantly engaged in work that can be regarded as an extension of their domestic responsibilities, such as being maids, tailors, teachers and nurses. In addition, a large proportion of women prefer to participate in home-based work, which is more easily combined with domestic care responsibilities (Rani and Unni, 2009). This may create difficulties in correctly measuring the amount of market work relative to domestic care (non-market) work carried out by women.

Studies on the female labour force participation rate mainly focus on trends in the rate and the various factors responsible for the long-term decline in female employment. Literature on unpaid work tends to consider types of unpaid work done by females in the household. However, there are not many studies which focus on the burden of unpaid work done by females and the nature of labour supply and unpaid work done by them in agricultural rural households.

In this context, the objectives of the paper are to find out:

1. The relation between patterns of land ownership and domestic duties performed by females adjusted by household size.

2. The reason for performing domestic duties in rural agricultural households.
3. The nature of work accepted by women in rural agricultural rural households.
4. The kind of assistance required by women in rural agricultural households in order to acquire jobs.

3. Data and methodology

The present paper is based on the NSSO quinquennial round of employment and unemployment survey data during the period 2011-2012. Both the published data as well as the unit record data related to the NSSO employment and unemployment survey are used for the analysis. The sample set considered in this paper is the working age population, namely the group aged 15-59 years. Variations in land ownership are represented by landless households (0.000 hectares), marginal landowners (0.001-0.40 hectares), small landowners (0.41-2.00 hectares) and large landowners (>2.00 hectares). The analysis in this paper is based on Usual Principal Status data.² The analysis is undertaken for rural India, where, for households, self-employment and casual labour in agriculture are the major sources of income.

To find out the relation between various forms of land ownership and domestic duties performed by females, the fractional logit regression model was used. Here the dependent variable is the number of females engaged in domestic duties adjusted by the number of family members. Hence the dependent variable is a proportion and varies between 0 and 1. This indicates the effect of explanatory variables tends to be non-linear and the variance tends to decrease when the mean gets closer to one of the extremes. This makes a linear regression or a standard logit model unattractive, and thus a fractional logit model should be used (Papke and Wooldridge, 1996). A fractional logit model is a Generalized Linear Model (GLM) with a binomial distribution and a logit link function. Hence the dependent variable of this study is the ratio the of number of females engaged in domestic duties and number of family members. The latter, in turn, is a function of other covariates, like there being marginal land owners, small land owners, large land owners and rural casual agricultural households. Furthermore, the interaction term between various forms of land ownership and agricultural household type is included. Additionally, caste and religion of the household are included in the model.

$$g\{E(y)\} = X\beta, y \sim F$$

Where $g(\cdot)$ is the link function and F is the distributional family.

$$\text{Logit } \{E(y)\} = X\beta, y \sim \text{Bernoulli}$$

Which was estimated using a robust Variance-Covariance Estimator (VCE) model.

2 The status of activity on which an individual, over the 365 days preceding the date of a survey, has spent a relatively longer time determines their Usual Principal Status (UPS). This allows for determination as to where the individual is in or out of the labour force and employed or unemployed.

Moreover, the link test was used for the functional specification test, whether the link function was appropriate or not. Here the dependent variable was regressed on the predicted values and their squares. If the model was specified correctly, the squares of the predicted values would have no effect.

4. Results and discussion

4.1 Demographic profile of women participating in domestic duties in rural agricultural households

At the outset it is useful to have an indication of the proportion of women who were engaged in domestic duties, namely the proportion with the usual principal activity status codes 92 (attended domestic duties only) and 93 (attended domestic duties and were also engaged in free collection of goods, sewing, tailoring, weaving, etc. for household use). A data set of 171,906 individuals in the age group of 15-59 was collected.

In the sample, it was found that 65 per cent of the females were undertaking domestic duties (Table 1). The study found that the largest group of females undertaking domestic duties (35 per cent) was in the 30-44 age group; this is during the reproductive period of women and when many are forced to withdraw from participation in paid work. Furthermore, it is seen that the largest group of females were illiterate (33 per cent) and only 30 per cent of females had up to a secondary level of education. Other important aspects

Table 1 Characteristics of the sample engaged in domestic duties in rural agricultural households

Gender	Percentage
Male	35
Female	65
Age-Group of females	
15-29	29
30-44	35
45-59	23
Education level of females	
Not literate	33
Up to primary	24
Up to secondary	30
Up to higher secondary	7
Degree and above	6
Caste categories of females	
Scheduled Tribes	10
Scheduled Castes	28
Other Backward Class	43
Forward caste	19

are that the largest group of females engaged in domestic duties in rural agricultural households are from Other Backward Castes (43 per cent), followed by Schedule Castes (28 per cent).

4.2 Reasons for spending most of the time on domestic duties

This section considers females who spent most of their time on domestic duties and the distribution by reason for this in each age group. Some 23 per cent or more of females in rural agricultural households (15-59 years) engaged in domestic duties were required to spend most of the days in this type of work (Table 2).

Table 2 Percentage of females required to spend most of their time on domestic duties throughout the previous 365 days across age-group

Age group	Percentage
15-29	29
30-44	24
45-59	23

Among the aforementioned women, irrespective of their age group, the majority reported that the absence of any other member to carry out domestic duties was the main factor responsible for them to carry on with such work. Social and religious constraints were also prevalent, especially among younger women (Table 3).

Table 3 Reason for females spending most of the time in domestic duties (percentage)

Reason	Age group		
	15-29	30-44	45-59
No other member for domestic duties	61	62	54
Cannot afford to hire helper	7	9	9
Social and religious constraint	22	17	19
Others	10	12	18

Among those females who were engaged in domestic duties but were not required to do so, unavailability of work was the major factor responsible for them pursuing such duties (Table 4).

Table 4 Reason for pursuing domestic duties for females who were not required to spend their time such duties (percentage)

Reason	Age group		
	15-29	30-44	45-59
Non-availability of work	52	49	60
By preference	33	36	30
Others	15	15	10

4.3 Pattern of domestic duties performed by women in rural agricultural households

This section looks at the various types of work performed by females in rural agricultural households. Across all age groups the activities females most engaged in were maintaining kitchen gardens, household poultry and husking paddy, as seen in Table 5.

Table 5 Women engaged in domestic duties in the usual principal status who carried out specified activities in agricultural household (percentage)

Maintaining kitchen gardens	43
Household poultry	25
Husking paddy	15
Preparing cow dung	8
Firewood collection	7
Others	2

4.4 Relation between land ownership and females engaged in domestic duties

Figure 1 shows that there is increasing participation in unpaid work by women as the extent of land ownership of the household increases.

This directs interest to the relationship between the pattern of land ownership and domestic duties performed by females adjusted by household size. For this purpose, a fractional logit model has been used (Table 6). If the dependent variable is whether females are engaged in unpaid work or not, a logit regression model can be used. However, a logit model cannot incorporate changes in family size and the extent of unpaid work by females. Hence, the dependent variable ranges between 0 and 1 and is the proportion of females engaged in unpaid work relative to the number of family members in the household. This model helps explain the relation

between the percentage of females engaged in unpaid work and the number of family members with various land sizes of the household.

Figure 1 Relation between Land Size and Unpaid work

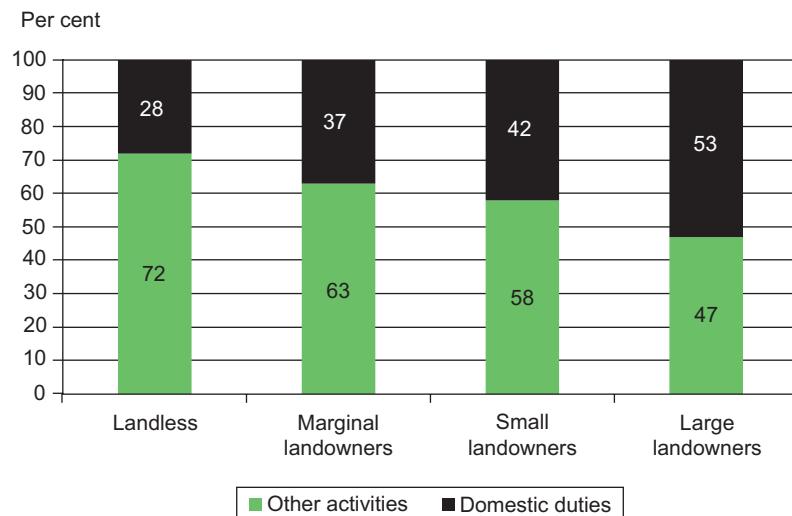


Table 6 Fractional logit regression model

<i>Independent variables</i>	<i>Coefficient</i>
Landless household as base	
Marginal landowners	0.10 (0.31)
Small landowners	0.45 (0.05)**
Large landowners	0.53 (0.00)***
Rural self-employed agricultural household as base	
Rural casual agricultural household	0.13 (0.11)
Rural casual agricultural household* marginal land cultivated	0.15 (0.20)
Rural casual agricultural household* small land cultivated	0.11 (0.10)*
Rural casual agricultural household* large land cultivated	0.31 (0.00)***
Marginal landowners* Scheduled Caste household	0.21 (0.05)**
Small landowners* Scheduled Caste household	0.15 (0.05)**
Large landowners* Scheduled Caste household	0.11 (0.05)***
Marginal landowners* Scheduled Tribe household	0.2 (0.15)
Small landowners* Scheduled Tribe household	0.13 (0.41)

Table 6 (continued)

<i>Independent variables</i>	<i>Coefficient</i>
Large landowners* Scheduled Tribe household	0.41 (0.00)***
Marginal landowners* Other Backward Class household	0.04 (0.51)
Small landowners* Other Backward Class household	0.15 (0.10)*
Large landowners* Other Backward Class household	0.23 (0.05)***
Marginal landowners* Hindu household	0.17 (0.18)
Small landowners* Hindu household	0.04 (0.12)**
Large landowners* Hindu household	0.27 (0.00)***
Marginal landowners* Muslim household	0.06 (0.61)
Small landowners* Muslim household	0.25 (0.10)*
Large landowners* Muslim household	0.59 (0.00)***

Note: *, **, *** indicate 10 per cent, 5 per cent and 1 per cent level of significance, respectively.

The results show that there is a greater probability that women workers get involved in unpaid work as land ownership size of the household increases. This implies that land does not release labour, especially female labour. Moreover, there is an increasing incidence of unpaid work only from the largest landowning class, which indicates that more women withdraw from the labour force if they belong to affluent landowning households. Further, it is also seen that the probability that females are engaged in unpaid work is more in casual agricultural households with large land cultivated than it is in self-employed agricultural households.

In addition to the above, participation of women in the labour force is dependent on the status of the household. Hence the nexus of class/caste/religion plays an important role as determining factors. In rural areas, ownership of land is an indicator of wealth, giving the household a position in the socioeconomic hierarchy. Thus the terms 'land-ownership classes of socio-religious groups and social-caste groups' have been created.

There is an increasing incidence of unpaid work among scheduled tribe and other backward class households when they belong to the largest landowning classes. However, in the case of scheduled caste households, irrespective of land owning class, the proportion of females engaged in unpaid work increases relative to other forward castes. The results show that there is an increase in unpaid work by women workers, for a majority of the landowning households of the different socio-religious groups.

4.5 Rural females, required assistance and preferred type of work

The proportion of rural women engaged in domestic duties is 34 per cent, and the majority of them want to work on a regular or part time basis (74 per cent) as well as be able to attend to their domestic duties. This implies that

there has been a change in the sentiment among rural women to be engaged in economically productive activities.

Although large proportions of rural females indicate that they require financial assistance, the demand for training is often also important for them (Table 7).

Table 7: Rural females domestic activity and the types of assistance wanted by them (percentage)

Females engaged in domestic duties	34
• Of these, females wanting to work on a regular or part time basis (74)	
Assistance required – initial financial assistance on easy terms	41
Assistance required – working finance facilities	19
Assistance required – training	21

The preference for jobs such as tailoring, spinning and weaving, animal husbandry, food processing by rural females, further implies that women lean towards activities which can easily blend with their domestic duties (Table 8).

Table 8 Preferred economic activity of rural females (percentage)

Tailoring	54
Spinning and weaving	22
Animal husbandry and dairy	11
Food processing	10
Manufacturing wood	2
Manufacturing leather goods	1

5. Policy implications

This study examines the relation between land ownership and the extent of domestic duties performed by females. It is noted that there is a greater probability of women workers getting involved in unpaid work as the land ownership size of the household increases. Further, as noted, the probability that females are engaged in unpaid work is greater in casual agricultural households with large amounts of land cultivated than it is in self-employed agricultural households.

There is also an increasing incidence of unpaid work in scheduled tribes and other backward class households when they belong to the largest

landowning classes. Nevertheless, as noted, in the case of scheduled caste households, irrespective of land owning class, the proportion of females engaged in unpaid work rises relative to other forward castes.

Considering the constraints experienced by rural females in entering the labour force, policy initiatives should focus on increasing their access to credit and training activities which develop their skills.

Further, it is important to address the need for financial assistance as expressed by females who are willing to accept work yet require greater support. If such policy and programme initiatives materialize, the previously referred to 34 per cent of the woman who are willing to work, yet do not do so, can enter the labour force and thus increase female participation.

Unpaid work performed by women in and around their homes should be valued to improve the conditions of such workers and to support policy formulation and implementation. The empirical results of this study also highlight socio-cultural and household-based constraints, particularly to married women's participation in the labour force. A key factor is the burden of household work and domestic duties borne by women.

Public investment in roads, rural electrification and improvements in water and sanitation infrastructure can significantly contribute to reducing the amount of unpaid work performed by rural women. When rural electrification was introduced in South Africa, the time women spent on housework decreased, leading to a 9 per cent increase in the female labour participation rate (Dinkelman, 2011). Cereal mills and other equipment for food processing, as well as affordable and appropriate home-based technologies, such as pressure cookers and refrigerators, can also contribute. These all may significantly help reduce the time and energy rural women must invest in food preparation, along with improving food availability and incomes from off-season food sales.

Another important issue is that coverage of public social security schemes, including health insurance, tends to be limited in rural areas (ILO, 2008). Lack of health insurance may aggravate the load of unpaid care at moments when families are especially vulnerable. On the other hand, where there are provisions for facilities such as childcare at worksites, the barriers to women's participation can be reduced, which in turn may reduce vulnerability (Government of India, 2014). To conclude, greater emphasis on advocating for and implementation of gender-sensitive and family-friendly policies is required in order to encourage a more equitable sharing of the burden of care and household chores between males and females, and contribute to sustainable and inclusive development.

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