LAND OWNERSHIP, SOCIO-RELIGIOUS GROUPS AND FEMALE WORK-FORCE PARTICIPATION IN RURAL INDIA : 2011-12

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ABSTRACT:

A lot has been studied about the different determinants of female labour supply process in the Indian Economy (eg. age, marital status, number of dependents in the household, sector of residence etc) but nothing has been said in depth about the interplay of the wealth ownership of the households and their effect on the decision of work force participation of women workers from such households. There has only been fleeting references of land-possessed or cultivated as one of the many determinants. But ownership of land being a historically important indicator of wealth of the households, especially in rural India, set us thinking as to how would the interplay of such a crucial factor affect the labour supply decisions of the women workers. In view of this fact we thought of exploring the latest Employment-Unemployment Survey data published by National Sample Survey Office (NSSO) to study the effect that land-owned (a wealth indicator), as one of the determinants of Female Work Force Participation Rate (FWFPR), exerts on the decision of women to participate in the labour market. Working with the unit level data of the 68^{th} (2011-12) Round, logistic regression methods have been used, as in such cases the model does not always make distributional assumptions on the predictors which can be both continuous and discrete.

Keywords : Gender, Employment, Rural, Landownership, Female Work-Force Participation.

JEL Classification: J16, J21

INTRODUCTION:

Employment is essential for poverty reduction and for empowering women. However, it will serve the purpose only if it provides women an opportunity to improve their well-being by being well paid and capability enhancing. But if it is low-paying and distress driven then it only increases a woman's drudgery. The picture that emerges from a study of the work profile of women in rural India in recent years strengthens this conjecture (Srivastava and Srivastava, 2010).

"*Analytical literature on employment, unemployment and wage determination in poor agrarian economies is large, albeit inconclusive. Empirical work in this area is comparatively scanty"(Bardhan 1979).*

In view of this fact we thought of exploring the latest Employment-Unemployment Survey (EUS) data published by NSSO to study the effect that land-owned (a wealth indicator), as one of the determinants of Female Work Force Participation Rate, exerts on the decision of women to participate in workforce. This is a nationally representative household survey which collects information on work activities and household expenditures. The Employment-Unemployment Surveys of NSSO are primary indicators of labourforce and workforce at National and State levels. These are used for planning, policy formulation, decision support and as input for further statistical exercises by various government organisations, academicians, researchers and scholars. The main objective of these surveys, conducted at periodic interval is to get estimates of level parameters of various employment and unemployment characteristics at National and State level. NSS surveys on employment and

unemployment with large sample size of households have been conducted quinquennially from the 27th Round (October' 1972- September'1973) onwards. The latest, i.e, the 68th Round (July'2011-June'2012) was the nineth quinquennial round in the series. The critical issues in the context of labour force and work force enquiries pertain to their definitions and measurability in different economic activities. Activity Participation of the people is not only dynamic but also multidimensional. It varies with gender, region, age, education, level of living, wealth or asset ownership, availability of factors of production (industry etc) and occupational category. The indicators of the structural aspects of the workforce such as status in employment, industrial distribution and occupational distribution are also derived from these surveys.

LITERATURE REVIEW:

Using employment data from the quinquennial rounds of the National Sample Survey (NSS), a number of papers/reports have examined the employment situation in India (for instance, Dev 2002, Ghose 2004, Masood and Ahmad 2009, Srivastava and Srivastava 2010, Majumder 2011, Mehrotra et al 2012, Shaw 2013). A major conclusion from these studies is the fact that there has been a marked slowdown in employment growth in the post reform (after 1991) period and that this slowdown is more marked for female employment, both in urban as well as rural areas. Labour Force Participation Rates (LFPR) and Work Force Participation Rates (WFPR) for females in India lags considerably behind the 'norm' for developing countries. There is also a yawning gap in LFPR and WFPR among women residing in urban and rural areas. An interesting observation about most of the studies dealing with nature, pattern or determinants of Female Employment is the fact that they are mostly tabular analysis of NSS data. Some of the econometric analysis done in this field, are by Bardhan (1979), Mathur (1994), Kanwar (1998), Garikipati (2004), Dasgupta and Goldar (2005), Mohapatra (2009), Majumder (2011), Srivastava and Srivastava (2010). All of these studies provide an insight into a neglected area – the female labour supply process in India. But none of them deal with the interplay of wealth ownership of the households and the decision of female labour supply. This fact set us thinking into what could possibly be the relationship between these two factors.

Wealth being a stock concept, its availability with the households should affect the decision of the family to send their women folk to work. This would be applicable not only for the current generation but for future as well as the past generations also. So there would be an intergenerational aspect to this particular determinant of female labour supply. For the present study we have looked at the effect on the present generation of women workers, thus we have considered only the 68^{th} round (2011-12) unit level data set. The neglect of the supply aspect in the earlier studies seems to be attributable to a commonly held view that India is a labour surplus economy.

" With supply posing no constraint the real issues related to employment should be focussed on the demand side i.e creation of more employment opportunities for the working age population via rapid growth". (Dasgupta 2005).

The beginning of 1990s saw initiation of economic reforms involving deregulation of domestic economic activities and liberalization of foreign trade and investment regimes. Higher growth of economy induced by liberalization, was expected to lead to a faster expansion of employment. However, it was noticed that the employment growth saw a deceleration. The early phase of the new millennium seemed to have brought in a turn around, with the period of 'Jobless Growth' dying out and the positive results of liberalization manifesting in terms of a high employment growth as based on NSSO estimates (61st Round,2004-05). However, results of the 66th and 68th rounds (2009-10, 2011-12),very disappointingly suggested a virtual stagnation of the employment growth during 2004-05/2009-10 period, which in fact made the conclusions of the earlier round look rather hasty (Papola, Sahu,2012). This was a period when the economy grew at a rate of 9% p.a and yet the growth rate of employment was so very low.

The pioneering work done by Bardhan (1979) was the first econometric attempt at estimating labour supply functions in peasant agriculture, as according to him, there have been very few systematic empirical studies of labour supply and labour market participation behaviour of peasant households. He has used detailed data collected from nearly 4,900 rural households (including landless labourers, farmers and non-agricultural workers) in West-Bengal, India. The data set is a part of NSSO data for the year October 1972-September 1973. One of the section of his work analyses the factors influencing labour participation rates for rural women. As far as our knowledge goes no similar work has been done in recent times in India. This

particular paper provided the initial impetus and sowed the seed of the idea of looking into and studying in detail the behaviour of female labour supply and participation patterns.

Studies on the participation rate of women have mainly focussed on the following attempts: a) to explain the long-term decline in female employment, b) to measure the extent of decline, c) to understand the factors behind the regional disparities in female work participation, d) to assess the adequacy of existing modes of data collection on women's work and e) to evolve alternate methods of capturing women's work. No attempt has been made to evolve methods to measure the intensity and productivity of women's work, to assess the complementarity of women's work to men's work and to assess the relation of women's work to the production structure (Krishna Raj,1985).

Two striking features of female workers in the Indian economy are: 1) the lower level of participation rate of women vis-à-vis men workers and 2) the declining trend in women's participation rate over time (Duvvury 1989). The idea that social norms prevent women from accepting certain jobs plays a central role in discussions regarding declining female participation (Mammen and Paxson, 2000). One notable point is that most of the macro-level studies on the determinants of female labour participation have been unable to come up with any clear relationships (Dholakia and Dholakia, 1978; Dandekar, 1982; Dantwala, 1975; Banerjee, 1978).

The marked decline in female labour force participation exhibited in the latest EUS (68^{th} Round, 2011-12) of NSSO is a disturbing fact warranting closer introspection. The labour force participation rate for women aged 15 years and above fell by 10.1 percentage points as compared with the previous round, corresponding to 22.6 million fewer women in labour force in 2010 than in 2005 (ILO research Paper No.10, 2014).

Rangarajan et al (2014) mention in their study of the 68^{th} round of NSSO (2011-12), that for the first time in the history of the Indian Labour market, the share of employment in the farm sector fell to below 50%. There was a change in the sectoral composition of employment and withdrawal of workers from the farm sector at 1.7% p.a between 2004-05 and 2009-10 accelerated to 3.0% p.a between 2009-10 and 2011-12. In rural India both males and females showed a tendency to withdraw from the agricultural sector and move to industry and services. This tendency found more

prominence among women workers. Around 29 million female workers withdrew from agriculture between 2004-05 and 2011-12. They have cited two most important reasons for such a phenomena, viz

1) increase in women's participation in education and
2) rise in income levels of rural households.

We have made an attempt to check the veracity of the first reason, with our dataset. As regards the second reason, we have concentrated on the stock concept of wealth, where ownership of land is an indicator of the wealthiness of a household.

Deducing from the remarks of Rangarajan et al we have tried to find out if it implied that land released labour and an increased ownership of land was associated with declining female work-participation rate. Unit level NSS data of the current round, i.e the 68th Round, 2011-12, has been used to look into this particular behaviour of female workforce participation in the context of the above mentioned fact. Effort has been made to see if an inverse relationship exists and whether a decline in Female Work Participation Rate (FWPR) is due to the fact that a greater number of women in the working age are attending educational institutions, following observations, made by Chowdhury (2011), Neff, Sen and Kling (2012) that 'Education Effect' is one of the major reasons for the decline in FWPR.

Hirway (2012), on the other hand, while assessing the 68th Round, is of the view that the missing labour force may not actually be missing or moving out, rather, it may have merely moved to low-productivity and subsistence-employment sectors which are difficult to measure through NSSO surveys. Based on this observation it will be worthwhile to study the categories of occupation for female workers, i.e if women workers are working instead of attending educational institutions then what type of employment are they more into; self-employment, regular-wage salaried or casual employment. By focussing on definitional changes only, one should not neglect the phenomenon of a structural change in the occupational structure of female workers (Duvvury, 1989).

There is a significant difference in the level and nature of the decline in participation rate of female workers in rural and urban areas. As the change in the employment

scene of female workers (in the form of their work force participation) was more prominent in rural than urban areas and given the fact that more than 80% of all female workers are in rural areas it is important to examine more closely the pattern of changes in the participation rate in the rural sector of the Indian economy.

The extent of female participation in the labour market is determined in India by a nexus of class/caste heirarchy and norms of patriarchal ideology. In an hierarchical society based on patrilineal-patrilocal families, the location of the family in the caste/class hierarchy would determine the level and forms of female work participation (Bardhan, 1985). This observation led us to another interesting aspect, and that is the behaviour of female work-participation of the different socio-religious groups in India. These groups have been constructed on the basis of NSSO classification, which gives us the position of the household in the socio-religious ladder. Interaction of these socio-religious groups and land ownership has given us the position of the household in the class ladder. A study of the impact of these interaction terms on the work participation of female workers has enabled us to make certain conclusions about the behaviour of female labour supply. It has provided an insight into the employment aspects of women workers belonging to various land ownership classes of the different socio-religious groups. The need for such a study was felt as there are differences in inheritence and ownership legislations among the various social and religious groups in India.

DATA AND METHODS :

Unit level records for the 68th Round of Employment and Unemployment Survey in India 2011-12 by National Sample Survey Office (NSSO) have been used in this study. Sample set considered in this paper is working age women in rural areas, i.e women in the age group 15-59 years. We have considered the Central Sample from Schedule 10. Land Ownership has been categorised as Landless Labourers(0.000 hectares), Marginal Landowners(0.001-0.40 hectares), Small Landowners(0.41-2.00 hectares) and Large Landowners(>2.00 hectares). It has been classified to be able to establish the degree of association with the different categories of principal activity status (defining gainful employment) of women workers.

NSSO sample surveys are designed to provide a cross-section statistical picture of the extremely complex employment situation that prevails in India. According to Ghose (2004), the complexities occur due to certain basic facts. Firstly, very few people have regular , full-time wage employment. The vast majority work on an irregular basis, either as self-employed or as casual wage-labourers. Second, as there is no well-developed system of social security, unemployment is not an option except for the well-off; the poor have to work in order to survive even when the return from this work is inadequate for subsistence. In such circumstances, standard indicators such as growth in the number of people employed or changes in the rate of unemployment do not tell us much about employment trends or conditions. To capture such complex reality, NSSO surveys use innovative methodologies and categorisation. They employ three different methods of determining the activity status of the persons. The first method identifies the Usual Principal Activity Status (called 'Usual Principal Status', UPS) of a person by using a reference period of 365 days preceding the date of survey. A person is considered as being in the Work Force if he/she is gainfully employed for a major part of the preceding 365 days. The analysis in this paper is based mainly on Usual Principal Status (UPS) data. NSSO surveys implicitly recognise the fact that UPS data provide information on a wider range of employment-related characteristics of persons. However, one drawback of this data is that it may not always be completely accurate as the recall period for the respondents is too long.

STATISTICAL ANALYSIS :

We carry out statistical analysis of the available data set to see the relationship that emerges between Land-ownership classes and female workforce participation rate. Our first hypothesis states that an increasing number of working age women are attending educational institutions, as a result of which workforce participation is falling. So we try to establish whether indeed there is highest participation in Usual Principal Activity Status91 (which defines 'attending educational institutions').

The table below gives a picture of the different principal activity statuses of rural women workers emerging from the various land ownership classes. What is very curiously noticeable is the fact that activity status 91(attending educational institutions) accounts for a majority of the women workers in all the land owning classes. This implies that

working women were actually attending educational institutions for a major part of the period that they were supposedly employed.

USUAL PRINCIPAL ACTIVITY STATUS OF FEMALE WORKERS (15-59 years)								
Land Classes	upa11	upa12	upa21	upa31	upa41	upa51	upa91	Total
Landless	16.54	0	6.02	15.79	3.01	13.53	45.11	100
Marginal Landowner	18.74	0.51	5.13	10.5	1.12	21.25	42.73	100
Small Landowner	27.09	0.99	14.79	8.74	0.45	6.79	41.14	100
Large Landowner	25.31	1.85	17.93	8.75	0.38	4.99	40.8	100

Table1: *Constructed by authors from unit level data of the 68th round. Percentage share of usual principal activity status in different categories of land-ownership.*

LandCategory=> 0.000=landCat1(landless), 0.001-0.40 hctrs = landCat2(marginal landowners), 0.41-2.00hctrs=landCat3(small lamdowners), >2.00hctrs = landCat4(large landowners)

Upast=> Usual Principal Activity Status; Worked in h.h. enterprise (self-employed): own account worker=upa11, employer=upa12, worked as a helper in h.h enterprise(unpaid family worker)=upa21, Worked as regular salaried/ wage employee =upa31, Worked as casual wage labour: in public works =upa41, In other types of work =upa51; Attended educational institution =upa91

This fact can be better understood by looking at the column chart below which gives us an idea about the percentile share of each activity status code in each land owning class.

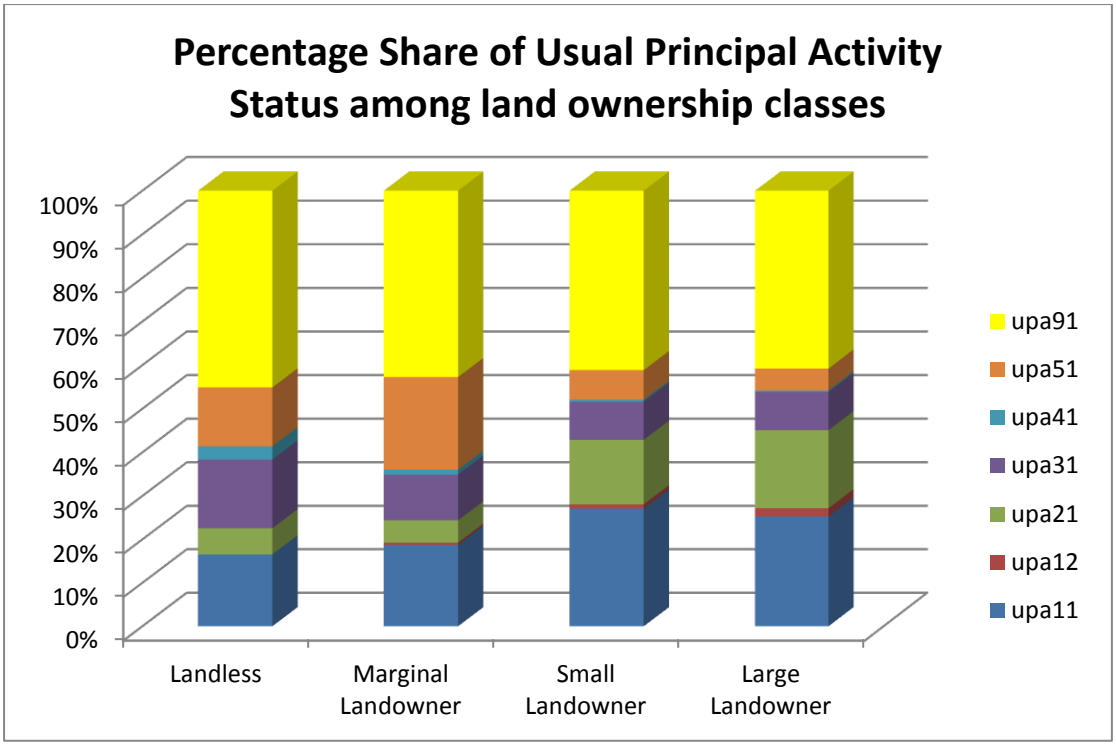

Fig1: *Constructed by authors from unit level data of the 68th round.*

Our tabular and diagrammatic analysis so far corroborates the first among the two reasons cited by Rangaraj et al., Chowhury, Neff, Sen and Kling stating that there is an increase in young adult females attending educational institutions.

In pursuit of our second hypothesis where we are trying to find out if an inverse relationship exists between landownership and female work participation, we have constructed socio-religious groups from the NSS data and are now looking at the percentage share of the participation of women workers in the various socio-religious groups. The table below and then the Column chart gives a clear picture of the participation pattern.

Usual Principal Activity Status of Female Workers (15-59yrs)								
Socio-Rel Grps	Upa11	Upa12	Upa21	Upa31	Upa41	Upa51	Upa91	Total
Hindu-Othrs	21.88	1.14	9.07	15.99	0.4	9.11	42.4	100
Hindu-SC	16.55	0.36	5.12	14.03	0.81	21.1	42.04	100
Hindu-ST	19.1	0.38	13.29	11.31	0.75	18.09	37.07	100
Muslims	22.02	1	6.51	11.48	0.69	10.13	48.16	100
Other-Relgns	20.87	1.19	9.06	16.83	0.7	6.14	45.2	100

Table2: *Constructed by authors from unit level data of the 68th round. . Percentage share of usual principal activity status among socio-religious groups.*

Usual Principal Activity Status. Worked in h.h. enterprise (self-employed): own account worker =Upa11, employer=Upa12, worked as a helper in h.h enterprise(unpaid family worker)=upa21, Worked as regular salaried/ wage employee =Upa31, Worked as casual wage labour: in public works =Upa41, In other types of work Upa51; Attended educational institution=Upa91

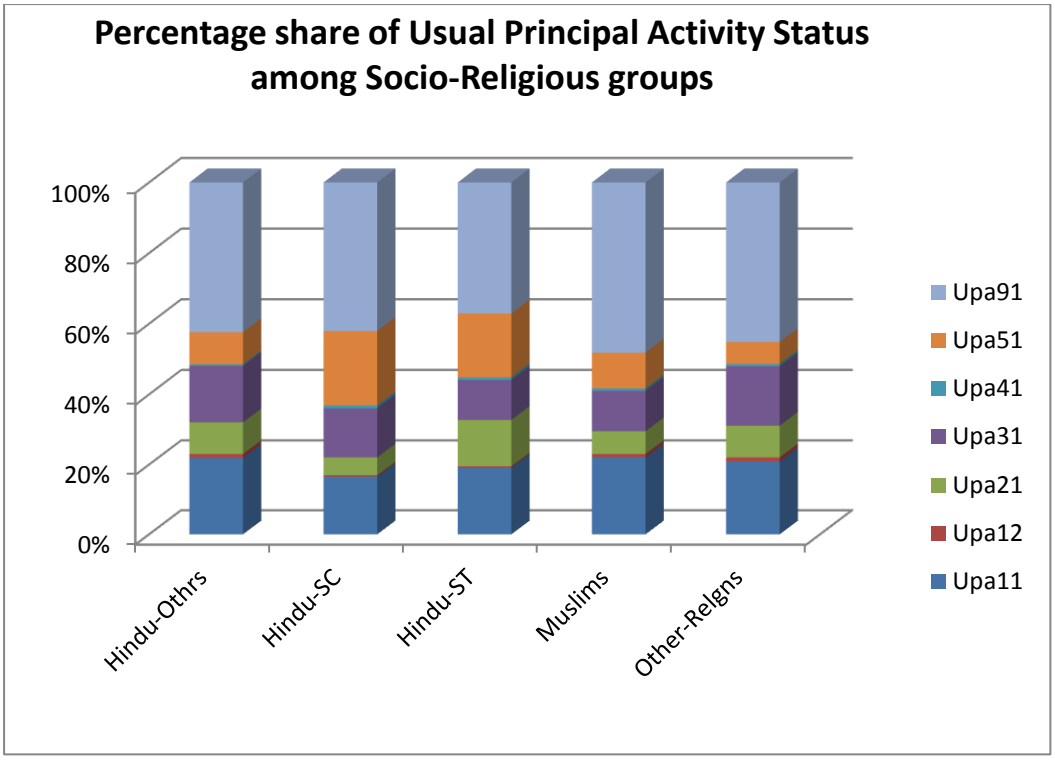

Fig2: *Constructed by authors from unit level data of the 68th round.*

We notice a distinct predominance of 'attending educational institutions' (Upa91) among all the socio-religious groups, as compared to the other activity statuses.

So long we have seen the behaviour of female work participation with respect to land ownership classes and then with respect to socio-religious groups exclusively. Let us now bring in the 'Interaction Terms' and see the behaviour of female work participation. Introduction of the interaction terms brings in the concept of 'Intersectionality'(Crenshaw,1989) in our study. It enables us to consider two dimensional axes at one point of time. Our axes of observation are; a) landownership class and b) socio-religious group. The following table and column chart give us an idea of whether there is greater work participation or educational participation among women.

Female work-participation behaviour of different classes of land-owning households among the socio-religious groups.							
Hindu-Others	Upa11	Upa12	Upa21	Upa31	Upa41	Upa51	Upa91
Landless-hhs	14.78	0.87	2.9	28.99	1.74	5.22	45.51
Marg-land	20.26	0.96	5.29	17.17	0.55	12.27	43.51
Small-land	27.2	1.17	13.98	10.28	0.25	5.97	41.15
Large-land	20.56	1.54	12.91	18.51	0.19	5.22	41.07
Hindu-SC							
Landless-hhs	9.64	0	2.41	25.3	1.2	20.48	40.96
Marg-land	15.18	0.31	3.2	13.82	0.92	24.5	42.06
Small-land	24.12	0.52	11.23	9.61	0.67	13.42	40.44
Large-land	14.39	0.41	7.37	19.99	0.41	13.44	43.99
Hindu-ST							
Landless-hhs	5	0	0	40	0	20	35
Marg-land	13.69	0.24	5.58	12.06	1.19	30.1	37.14
Small-land	24.59	0.47	18.81	8.63	0.35	10.14	37.01
Large-land	20.19	0.52	19.41	14.6	0.61	7.6	37.06
Muslims							
Landless-hhs	16.67	1.39	4.17	16.67	0	8.33	52.78
Marg-land	21.01	0.97	5.5	11.58	0.85	11.84	48.25
Small-land	26.36	1.21	10.06	8.34	0.37	4.05	49.06
Large-land	21.6	0.87	7.08	14.96	0.37	9.5	45.62
Other-Relgns							
Landless-hhs	16.05	1.23	7.41	28.4	1.23	3.7	41.98
Marg-land	17.12	0.83	6.2	19.21	0.72	10.2	45.72
Small-land	26.16	0.86	14.55	11.73	0.86	1.68	44.17
Large-land	22.31	2.28	8.44	17.67	0.47	3.37	45.45

Table3: *Constructed by authors from unit level data of the 68th round. Percentage share of workparticipation among female workers belonging to various landownership classes of socio-religious groups.*

Usual Principal Activity Status. Worked in h.h. enterprise (self-employed): own account worker =Upa11, employer=Upa12, worked as a helper in h.h enterprise(unpaid family worker)=Upa21, Worked as regular salaried/ wage employee =Upa31, Worked as casual wage labour: in public works =Upa41, In other types of work Upa51; Attended educational institution=Upa91

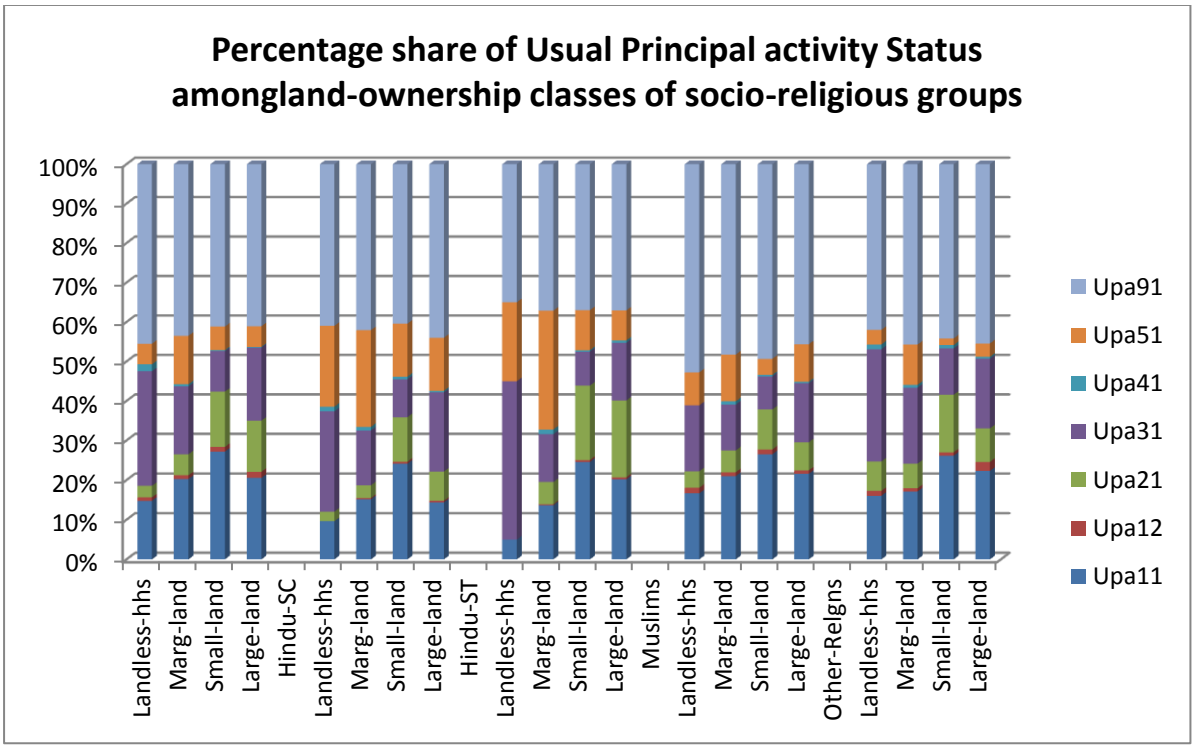

Fig3: *Constructed by authors from unit level data of the 68th round.*

Figure 3 also shows an unambiguous supremacy of educational participation among the working age female population. This is in regard to other activity statuses considered individually, i.e there is a greater probability of women workers opting for education than either working in own house hold enterprises or working for regular salaried employment or working casually. But when work-participation is considered as a sum of all other activity statuses (Upa11+Upa12+Upa21+Upa31+Upa41+Upa51) then what will be the picture, is a matter of question. To know that answer we have to perform econometric applications.

ECONOMETRIC ANALYSIS:

Model and Variables:

An econometric analysis can further strengthen the findings and help us draw inferences from the available data set. For this purpose we have extracted data from the 68th Round (2011-12) of NSSO. Household Level and Person Level data has been used.

Total no.of observations= 4,56,999 individuals.

This includes both males and females in rural as well as urban areas. For the purpose of this specific study we have only considered females and then our data set reduces to 2,23,195 persons. As we are looking into the employment behaviour of female workers so the data set consists of working age females in the rural areas i.e the age group 15-59 years. Now the data set consists of 1,42,776 persons.

For considering Work-Participation of Female Workers (in the age group of 15-59 years) in the Usual Principal Activity Status we have arranged the data in the following manner:

a) Usual Principal Activity Status code 81(as per NSSO schedule) has not been taken into consideration as that will give us the Labour Force estimate but we are considering Work-Force participation only.

b) Usual Principal Activity code 91(attending educational institutions) has been considered independently to study the 'Education Effect'.

c) Usual Principal Activity Status codes 92,93,94,95,97,99 have not been taken into consideration as they do not enable us to define work-participation as gainful employment. {These codes describe activities which are not remunerable or done for gainful purposes}

d) An observation needs to be made here: Although Upa21 defines unpaid family worker yet we have considered it in Work Participation because of the fact that as

landownership increases there is a greater representation of working age women in the family who work as unpaid family labour. Most of the unpaid agricultural(on owned farms) or non-agricultural(in own household enterprise) work is done by female workers of the household. Taking Upa21 into consideration or leaving it out of the definition of Work Participation changes the econometric results for the different socio-religious groups.

So Work-Participation= Usual Principal Activity Status (11+12+21+31+41+51)

Educational Participation= Usual Principal Activity Status 91

Final size of the dataset= 90230(observations).

Dependent Variable : As the Statistical analysis has revealed, that, for working age female population in rural areas the maximum representation is in the status which states that 'Attended educational institutions' is the principal activity so we have considered the dependent variable{P(1,0)} as a categorical one, with binary outcome, where participation is either in workforce or in education.

Independent Variables :

1) Land Ownership: Is a categorical variable where the classes considered are :

L1 = Landless Households (landownership 0.000 hectares), (yes=1; no=0)

L2 = Marginal Landowners (ownership 0.001-0.40 hectares), (yes=1; no=0)

L3 = Small Landowners (ownership 0.41-2.00 hectares), (yes=1; no=0)

L4 = Large Landowners (ownership >2.00 hectares), (yes=1;no=0)

2) Socio-Religious Groups : NSSO disaggregates data on the basis of social groups and religions. Land ownership and inheritance norms being varied among the different social groups and religions, we have created the following socio-religious groups to get a detailed picture of the behaviour of workforce participation.

a) Hindu-Others(H-O) , (yes=1; no=0)

b) Hindu-SC(H-SC), (yes=1; no=0)

c) Hindu-ST(H-ST), (yes=1; no=0)

d) Muslims(M), (yes=1; no=0)

e) Other-Religions(Othr-Relgns), (yes=1; no=0) [Includes Christianity-3,Sikhism-4, Jainism-5, Buddhism-6, Zoroastrianism-7, Others-9]

3) Sector: Landownership as a wealth indicator has a very important role in rural areas but it may not be so in urban areas. This has been seen by considering sector as a categorical variable in the following manner.

Sec1=rural, (yes=1; no=0)

Sec2=urban, (yes=1; no=0)

Interaction Terms:

To get a better picture of the work-force participation behaviour of the socio-religious groups in particular, we have created interaction terms of landownership and the socio religious groups in the following manner:

Lasrg11= Hindu-Others who are landless

Lasrg12= Hindu-SCs who are landless

Lasrg13= Hindu-STs who are landless

Lasrg14= Muslims who are landless

Lasrg15= Other-Religions who are landless

Lasrg21= Hindu-Others who are marginal landowners

Lasrg22= Hindu-SCs who are marginal landowners

Lasrg23= Hindu-STs who are marginal landowners

Lasrg24= Muslims who are marginal landowners

Lasrg25= Other-Religions who are marginal landowners

Lasrg31= Hindu-Others who are small landowners

Lasrg32= Hindu-SCs who are small landowners

Lasrg33= Hindu-STs who are small landowners

Lasrg34= Muslims who are small landowners

Lasrg35= Other-religions who are small landowners

Lasrg41= Hindu-Others who are large landowners

Lasrg42= Hindu-SCs who are large landowners

Lasrg43= Hindu-STs who are large landowners

Lasrg44= Muslims who are large landowners

Lasrg45= Other-Religions who are large landowners.

The Model can be expressed as follows:

Logit x = $\propto_0 + \sum_{i=1}^{k} \propto_i Y_i$

Where x is the probability that an individual participates in workforce;

Logit x= $\ln\left(\frac{x}{1-x}\right)$

$\{Y_i\}$**(i=1,2,….,k) are the predictor variables,** $\propto_0$ **is the intercept and** $\propto_i$**s are the regression co-efficients.**

RESULTS:

We now explore the results of the micro decision making process as evident from the binary choice model. Our model uses land (categorised as marginal, small and large),

socio-religious groups (categorised as Hindu-Others, Hindu-SC, Hindu-ST, Muslims and Other Religions) , interaction terms of land and socio-religious groups and sector (categorised as rural and urban) as the causal variables. Regressions are run with a rural/urban dummy.

Model 1:

1) With landless households as reference category, women workers belonging to marginal landowning households have a lower probability of working. Those from small and large landowning have a greater probability of taking part in work force. Thus, there is no inverse relationship between land-ownership classes and female work-force participation. This is mainly due to the presence of Upa21 because when we perform binary logit without including Upa21 in the definition of work participation we get a picture where there is an inverse relation between the two variables. We have presented the tables showing both the regression results. Although Landownership in itself is not a significant variable but it is assumes significance in Rural areas in comparison to Urban areas as shown by the regression results. Wealth ownership of the household does not seem (using the word 'seem' as the results are not significant) to have an inverse relationship with the labour supply decision of women workers. As the ownership of land increases there is a lower probability of women workers working when we do not consider the 'unpaid work'(Upa21) done by women workers, but once this work is taken into consideration we notice that work force participation increases with increase in land ownership size. We do not yet know whether women have ownership rights of the productive assets or not. A detailed ethnographic study may help us gain knowledge. Inheritence laws are varied among the different socio-religious groups in our country and they also vary according to the states or regions. To study the impact of such differences we have studied female work-participation behaviour among the various socio-religious groups.

Model 2:

We consider Hindu-Others (includingOBCs) as the reference category for the next section of study involving socio-religious groups.

1) Women workers from Hindu-SC households have a greater probability of working than taking part in educational attainment. This result seems quite plausible, given the

fact that such households being supposedly under-priviledged and in the minority group may not be able to afford the luxury of sending their working age women to educational institutes. The opportunity cost of not working may be too high as a result of which they are forced to join the workforce.

2) A similar result holds for Hindu-ST households. In comparison to Hindu-Others, women workers from this category are more probable to take up work. The reason may be the same as faced by the Hindu-SC households.

3) Muslim women workers (considering Mus-STs, Mus-SCs, Mus-Others and Mus-OBCs) have a lower probability for work-participation as compared to Hindu-Others. So we see that more of muslim women workers are actually attending educational institutions during the year 2011-12. It is a pleasantly surprising result given the fact that Muslim women are always considered as being extremely vulnerable and disadvantaged due to the strict patriarchal set up of the particular religion. One point need to mentioned here, i.e we have not taken into account 'unpaid domestic work(Upa92, Upa93). So we are not sure as of now, whether the decline in work-participation is actually been channelled towards educational attainment or towards domestic work. For that we need to perform Multinomial Logit or Probit and break work-participation into 'paid work' and 'unpaid work' to get a disaggregated picture.

4) Among the 'Other-Religions' socio-religious group also we find that there is a lower probability of women workers taking part in work-force. The relationship is very strong. Thus we see that the different socio-religious groups are significant factors in determining the behaviour of female work participation. The responses do not very much between rural and urban areas.

Model 3:

Our First model does not support the hypothesis of an inverse relationship between land-ownership classes and female work-force participation. Infact ownership of land is not a significant variable in determining the labour suuply decision of women workers. Our Second model depicts that the relationship between socio-religious groups and FWPR is very strong yet different groups present different patterns. This

led us to think of looking at the impact of the interaction of land and socio-religious groups on female work participation, on the basis of the classification provided by the NSSO data. Our results are as follows:

a) Considering Hindu-Others who are landless as the reference category, the logistic regression results show that women workers belonging to marginal, small and large landownership households have a greater probability of working. Presence of land as a productive asset, which is a form of wealth, is not affecting work participation favourably, i.e there is no inverse relationship between landownership and FWFPR among this socio-religious group. This is again due to the presence of 'unpaid work(Upa21)' in the definition of work participation. Although we are not clear as yet, about the ownership rights of the available land with the households so we have assumed that the women workers have the same right to ownership as their male counterparts. We intend to look into and study the inheritance laws in the different states among the various socio-religious groups and incorporate the effects into our present analysis, to see if that brings about a change in workforce participation of women workers in general or if that affects some category of women in particular.

b) For Hindu-SCs, considering the landless households as the reference category the results show that women workers from marginal, small and large landowning households have a greater probability of working. Thus among this socio-religious group also there is no inverse relation between land-ownership classes and FWFPR.

c) For Hindu-STs, women workers from marginal, small and large landowning households, in comparison to landless households have a greater probability of working than attending educational institutions. So there is no inverse relationship between land-ownership and FWPR. An increase in wealth is not affecting the work participation decision favourably. Infact, in this group we see that there is a distress push.

e) We now take a look at the logistic regression results of the socio-religious group Muslims. Here we have clubbed Muslim-ST, Muslim-SC, Muslim-Others and Muslim-OBC(on the basis of the religious and social-group classification of NSSO). Considering Muslim landless households as the

reference category, it is noticed that women workers belonging to marginal, small and large landowning households have a lower probability of working. There is a clear inverse relationship between landownership and workforce-participation.

f) For the group 'Other-Religions', the results are mixed. They show that, considering landless households as the reference category, women workers belonging to marginal and large land owning households have a lower probability of joining work force. Those from small land owning households have a greater probability of participating in work force.

g) We see that in Rural areas there is a significantly higher probability of women workers participating in work. Thus Female Work Force Participation is higher in rural areas than in Urban areas.

CONCLUSION:

Our study tries to provide a glimpse of the female labour supply process as chronicled in the latest employment-unemployment survey of the NSSO (2011-12). There is no inverse relationship between landownership and female work participation rate, as seen clearly from the micro results when we consider the landownership classes only, including 'unpaid work' done by female workers. This result gets reversed and we see an inverse relation between the two variables when 'unpaid work' is not taken into consideration.. However, these results are not significant and so we cannot say, for sure that land releases labour. Moreover, whether this labour is being used up in more productive sectors or not needs to be looked into before commenting on the distress-driven push or pull nature of women's employment. Results are mixed when we consider the interaction between landownership categories and socio-religious groups. Unambiguous and strong results are obtained for minorities like Muslims, Scheduled Castes and Scheduled Tribes. There is no concrete evidence as yet that work participation decision of women workers is affected solely by the ownership of land as an asset. We say so because of the fact that the ownership rights of productive

assets are not with women. Sector plays a very significant role in the analysis. Role of land ownership is important in rural areas but not so in urban regions. Affiliation to Socio-religious groups affect female work participation significantly, irrespective of rural or urban sector. A major gap in the existing literature is the limited attention paid to the question of Landownership as a wealth determinant and of Caste. Class considerations have been incorporated in certain studies in the form of analysis of the impact of technological change, but there is no similar attention given to the question of caste or religion. Caste is important because of the increasing heterogeneity of the agricultural labour class. The lack of specific attention is not a limitation of only studies on women but it is a general problem with much of the literature on agrarian relations in India. So, it's very essential that we integrate these three elements of class, caste and gender, otherwise our understanding will remain partial(Duvvury, 1989).

Another important aspect to be noted is that, textbook labour supply model assumes that labour markets are competitive. However, it is quite plausible that labour markets do not function competitively in developing countries like India, especially for women (Mammen and Paxson, 2000). There may be costs associated with women working outside the family farm or non-farm family enterprise. There maybe social norms and laws restricting women from working outside the home (Afghanistan is a case in point) or from accepting paid employment, especially in manual jobs. The amount of land and other productive assets owned by her family and the numbers and skills of family members who are available to work on a family enterprise will influence her labour supply decisions. Furthermore, as men move out of agriculture and into paid employment as a result of migration and increased pace of urbanisation, fewer family farms and enterprises are left for women workers to be employed in. So, until women can acquire the requisite educational attainment and transferrable skills to find suitable employment in firms in expanding sectors, the opportunity value of women's time relative to men's time may decline (Schultz, 1988). Thus the relationship between female labour force participation and economic development (measured in terms of an increasing GNP at PPP) is U-shaped(Goldin,1995). For very poor countries, female labour force participation is high and women work mainly in farm and non-farm family enterprises. Development initially moves women out of the labour force but as development continues and women's education levels rise, they move back into the labour force. What needs to be understood from our analysis is, at

what stage of development is the Indian economy in, according to the latest EUS. As women's educational participation shows a major increase in Rural areas, so, is it that the threshold has already been reached by the Indian economy and it is now on the rising part of the U-Curve? For accurate answers to this question we need to see the categories of occupation of the women workers, i.e the categories of their work. Identifying such categories can help in meaningful analysis of the complicated and surreal world of 'Women's Work' which can in turn translate into relevant policies for betterment of work opportunities for women (Majumder,2011). It is also essential that policy makers move beyond the standard labour supply models and the set determinants of labour-force participation rates for women. It should be of more concern that women are able to access better quality of work and take advantage of the new labour market opportunities. Policy initiatives should be undertaken for reducing inequality in the labour market which will in turn help in enhancing the generation of human capital and empowering women's participation in household-decision making process. Among the various mechanisms of reducing the inequality, one very important form is 'property rights' to women which can result in women's empowerment in decision making process (*Agarwal, 1994*).

Mean or Proportions of the key Independent Variables

Variables	Mean
Land-Ownership	
Landless Households	0
Marginal Landowners	0.57
Small Landowners	0.21
Large Landowners	0.19
Socio-Religious Groups	
Hindu-Others	0.53
Hindu-SC	0.14
Hindu-ST	0.06
Muslims	0.13
Other-Relgions	0.12
Sector	
Rural	0.59
Urban	0.4
Landownership of Socio-religious grps	
Hindu-Others who are landless	0
Hindu-SCs who are landless	0
Hindu-STs who are landless	0
Muslims who are landless	0
Other-Religions who are landless	0
Hindu-Others who are marginal landowners	0.29
Hindu-SCs who are marginal landowners	0.1
Hindu-STs who are marginal landowners	0.02
Muslims who are marginal landowners	0.09
Other-Religions who are marginal landowners	0.06
Hindu-Others who are small landowners	0.11
Hindu-SCs who are small landowners	0.02
Hindu-STs who are small landowners	0.02
Muslims who are small landowners	0.02
Other-religions who are small landowners	0.03

Regression Results

MODEL 1: Taking into consideration 'unpaid work in house-hold enterprise' i.e Upa21

Logistic Regression results for women workers belonging to different land-ownership classes in rural areas.			
		Women Workers(15-59years)	
Land-Classes		WorkForce Participation	
Landless{Ref}		.	
Marginal LandOwner		(-)0.00(0.08)	
Small LandOwner		0.03(0.08)	
LargeLandOwner		0.07(0.01)	
Sector			
Urban{Ref}		.	
Rural		0.12(0.01)***	

*Ref. implies reference category; *** implies significance at 1%, ** implies significance at 5%, * implies significance at 10% level. The figures given in the parenthesis are the robust standard errors. Source: NSSO 68th Round, 2009-10.*

MODEL 1: Without taking into consideration Upa21

Logistic Regression results for women workers belonging to different land-ownership classes in rural areas.			
		Women Workers(15-59years)	
Land-Classes		WorkForce Participation	
Landless{Ref}		.	
Marginal LandOwner		(-)0.00(0.08)	
Small LandOwner		(-)0.11(0.08)	
LargeLandOwner		(-)0.05(0.08)	
Sector			
Urban{Ref}		.	
Rural		0.04(0.01)***	

*Ref. implies reference category; *** implies significance at 1%, ** implies significance at 5%, * implies significance at 10% level. The figures given in the parenthesis are the robust standard errors. Source: NSSO 68th Round, 2009-10.*

MODEL 2:

Logistic Regression results for women workers belonging to different socio-religious groups in rural areas.			
	Women Workers(15-59years)		
Socio-religious grps		Workforce participation	
Hindu-Others{Ref}		.	
Hindu-SCs		0.00(0.02)	
Hindu-STs		0.19(0.02)***	
Muslims		(-)0.22(0.02)***	
Other-Religions		(-)0.11(0.02)***	
Sector			
Urban{Ref}		.	
Rural		0.11(0.01)***	

*Ref. implies reference category; *** implies significance at 1%, ** implies significance at 5%, * implies significance at 10% level. The figures given in the parenthesis are the robust standard errors. Source: NSSO 68th Round, 2009-10.*

MODEL 3:

Logistic Regression results of women workers of various socio-religious groups belonging to different land-ownership classes in rural areas					
		Women Workers(15-59 years)			
Interaction Terms		WorkForce Participation			
Hindu-Others					
Landless{Ref}		.			
Marginal L-O		0.05(0.08)			
Small L-O		0.15(0.08)**			
Large L-O		0.15(0.08)**			
Hindu-SCs					
Landless{Ref}		.			
Marginal L-O		0.11(0.08)			
Small L-O		0.18(0.09)**			
Large L-O		0.03(0.09)			
Hindu-STs					
Landless{Ref}		.			
Marginal L-O		0.32(0.09)***			
Small L-O		0.32(0.09)***			
Large L-O		0.32(0.10)***			
Muslims					
Landless{Ref}		.			
Marginal L-O		(-)0.13(0.08)			
Small L-O		(-)0.18(0.09)**			
Large L-O		(-)0.02(0.09)			
Other-Religions					
Landless{Ref}		.			
Marginal L-O		(-)0.03(0.08)			
Small L-O		0.03(0.08)			
Large L-O		(-)0.02(0.09)			
Sector					
Urban{Ref}		.			
Rural		0.02(0.01)***			

*Ref. implies reference category; *** implies significance at 1%, ** implies significance at 5%, * implies significance at 10% level. The figures given in the parenthesis are the robust standard errors. Source: NSSO 68th Round, 2009-10.*

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