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**FEMALE HEADED HOUSEHOLDS AND POVERTY:  
Analysis Using Household Level Data**

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# **Female Headed Households and Poverty: Analysis using Household level data**

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## **Abstract**

*The relationship between gender and poverty is a complex and debatable topic more than ever and thus a potential area for policy makers to focus. The aim of this paper is to review existing literature and find evidence on linkages of whether gender affects poverty in two agro-biodiversity hotspots- two study sites -Tamil Nadu and Odisha, having different socio-economic setup. It tries to address the research question of whether female - headed households are poorest of the poor. The results depicts that gender has a significant impact on poverty in Tamil Nadu leaving further scope for research.*

**Keywords:** *Feminization of Poverty, Household Headship, Gender Poverty, Tamil Nadu, Odisha*

**JEL Codes:** *I30, I32, I39*

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**Priyanka Julka**

## INTRODUCTION

“Our Dream is a World Free of Poverty” is the World Bank Group’s mission. This mission, alongside a focus on the well being of people aims to end extreme poverty and promote prosperity. The world attained the first Millennium Development Goal target—to cut the 1990 poverty rate in half by 2015—five years before as planned, in 2010. Despite this progress, the number of people in extreme poverty remains unacceptably high. This has led to understanding the aspects of poverty to achieve the millennium development goal.

Traditionally, poverty has been defined by an individual’s level of income. According to the World Bank, poverty is said to be deprivation in well-being of an individual, and comprises many aspects and dimensions. It includes individuals with low incomes and the inability to acquire the basic goods and services necessary for survival with dignity. Poverty also includes low levels of health and less education, poor access to clean water and lack of clean sanitation, inadequate physical security and insufficient capacity and opportunity to better one’s life. As per definition of poverty by World Bank a person who is surviving on \$1.25 per day or less is considered poor. We broadly define poverty into 4 types. The first being Absolute Poverty which refers to the deprivation of basic human needs which commonly includes food, water, sanitation, clothing, shelter, healthcare and education. Relative Poverty is defined contextually as economic inequality in the location or society in which people live. (“Measuring Inequality”, World Bank (2011)). The other two types are situational (or transitory) poverty and generational or chronic poverty.

Poverty is a multi-dimensional phenomenon. The multi-dimensional concept of poverty impose severe restrictions on the number and the type of attributes that constitute poverty. Multidimensional poverty is made up of several factors that constitute poor people’s experience of deprivation – such as poor health, inadequate living

standard, lack of education, lack of income (as one of several factors considered), poor quality of work and threat from violence.

The relationship between gender and poverty is a complex and controversial topic that is now being debated more than ever. Although much policymaking has been informed by the idea of female based poverty, the precise nature of the nexus between gender and poverty needs to be better understood and operationalized in policymaking (Cagatay, 1998).

In India, discriminatory attitude towards women have existed for generations and this affects the lives of both genders (females and males).The female face gender discrimination with respect to education, earnings, rights and economic opportunities (Barros *et. al.*, 1997), thereby creating a potential risk of poverty and leading to poverty trap over inter generations.

Social and cultural motives in India restrict women's access to work and education, and hence women do not participate in labor market as freely as men do (Dreze and Sen, 1995). Moreover, with ideologies entrenched in patriarchal form of society, women's access to family inheritance and productive assets is limited or absent (Agarwal, 1999). To add more to it, there are several practices and customs that are still prevalent in India that symbolize the subordination of women to men, making gender-bias against women an intrinsic social issue as well. Thus, socio-economic gender bias against women in India places female-headed households at a greater risk of poverty, where women are the primary earners. Consequently, few studies in India show that female-headed households are poorer compared to male-headed households (Dreze and Srinivasan, 1997, Meenakshi and Ray, 2002, and Gangopadhyay and Wadhwa, 2003).

The links so frequently drawn between the feminization of poverty and household headship<sup>1</sup> comes from the idea that women-headed households constitute a disproportionate number of the poor, and secondly that they experience greater extremes of poverty than male-headed units (BRIDGE, 2001; Buvinic and Gupta, 1993; González de la Rocha, 1994b:6-7; Moghadam, 1997; Paolisso and Gammage, 1996:23-5). An additional element that is summed up in the concept of an 'intergenerational transmission' is that the poverty of female household heads is passed on to their children (Chant, 1997b, 1999). As asserted by Mehra *et. al.* (2000:7), poverty is prone to be inter-generationally perpetuated because female heads cannot 'properly support their families or ensure their well-being' (ILO, 1996).

Against this background the study attempts to seek whether there lies a causal relationship between women-headed households being poor in regard to two study sites- Tamil Nadu and Odisha. The next section provides a background, section 3 gives an overview of the study sites, Section 4 provides the methodology, Section 5 states the empirical results, Section 6 provides policy implications and conclusions.

## **BACKGROUND**

The concept of targeting female-headed households in pursuit of reducing poverty and social disadvantage is controversial and lacks rigorous evidence. Women, are usually the primary earners in female-headed households and they face gender discrimination with respect to education, earnings, rights, and economic opportunities (Barros *et. al.* 1997). There are issues relating to identifying the actual head of the household and that female headship is not always correlated to poverty

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<sup>1</sup> It is difficult to define as household head is ambiguous as it is left to the judgment of family members. Fuwa(2000) had categorized household headship on the basis of demography, economic or self reported factors. Demographic factors focus on the presence of husbands in the family; economic factors take into account the economic contribution of each family member and self reported factors are the survey respondents perception of who the household head is.

(Buvivnic and Gupta, 1997). Buvinic and Gupta (1997) studies shows that women have lower average earnings compared to men, less access to remunerative jobs, and productive resources such as land and capital. These all contribute to the economic vulnerability of female-headed households.

The World Banks' study on Gender and Poverty in India (2001) concluded that women continue to be denied the access to productive assets in the form of land ownership and human capital such as education and skill-training. Also, women work for extremely low wages, with a lack of job security and social security benefits, women are not protected by any government labour organizations or labour legislation (Nandal, 2005). In India, gender-related economic gaps are largely determined by age-old customs and traditions (based on religious, social and economic reasons), that have led people to accord lower status to women (Arokiasamy and Pradhan, 2006; Das Gupta *et. al.*, 2003). For instance, many parents consider the cost of educating a girl as a burden compared to educating a boy. Social and cultural motives in India restricts women's access to work and education, and hence women do not participate in labor market as freely as men do (Dreze and Sen, 1995; Dunlop and Velkoff, 1999).

Women's access to family inheritance and productive assets is limited or absent due to following of patriarchal form of society setup. (Agarwal, 1999). This puts female headed households at a greater risk of poverty especially where women are primary earners. Dreze and Srinivasan (1997), Meenakshi and Ray (2002), and Gangopadhyay and Wadhwa (2003) have conducted studies in India that show that female headed households are poorer compared to male headed households.

Barros *et. al.* (1997) studies provide evidence that female-headed households in Brazil tend to have lower household income

compared to other households because of lower average earnings of the female head. This shows that female-headed households have worse social, economic and demographic features compared to male-headed households and are thus more likely to be poor.

Buvinic and Gupta (1997) identifies three channels that can determine why female-headed households are poorer than male-headed counterparts. Firstly that female headed household usually have more dependents i.e they have higher non-workers to workers ratio compared to other households. Secondly, female heads work at lower wages and have less access to assets and productive resources compared to men owing to gender biasedness. Lastly, women have time and mobility constraints compared to male- heads due to household chores performed by her.

Fuwa (2000) conducted studies in Panama where the results were that only certain categories of female-heads such as widows, divorced women are particularly disadvantaged in both income and non-income dimensions of poverty compared to male-headed households.

Swarup and Rajput (1994) show that in India, lack of access to family property and assets, and deficient micro-credit facilities contribute to the poor economic conditions of female-headed households. Several studies have pointed out that intra-household discrimination in education against girls, which results in girls possessing less skill than boys, contributes to fewer economic opportunities for women (Oxaal, 1997), resulting in higher poverty rates among female-headed households. Households with single women as the head can potentially face even a higher risk of poverty because of the cultural and social stigmas attached to their marital status.

Gangopadhyay and Wardhwa (2003) identifies two channels through which gender bias flows in India are workplace discrimination and intra-household discrimination. He uses NSS household data for the years 1987-88, 1993-94, and 1999-00 to demonstrate that female-headed households are poorer than male-headed counterparts.

However, there are studies which also depict that female headed households are poorer than their male counterparts like Appleton (1996) which presented evidence that irrespective of the way poverty is measured (i.e. by income, consumption or social indicators), female-headed households in Uganda are less poorer than male-headed counterparts. Also, Dreze and Srinivasan (1997), found no evidence that female headed households or widows in rural India are significantly poorer compared to male headed households, based on standard head count ratio, which measures the number of people living below the poverty line. Senada and Sergio (2007) investigated whether female-headed households are more vulnerable to poverty using study site as Bosnia and Herzegovina. Using yearly per capita consumption expenditure as measure of poverty (adjusted for regional differences in prices), they could not find any support for this claim.

Casper, L. *et. al.* (1994) examined gender differences in the relative poverty of men and women in eight industrialized countries. The analyses uses data of countries like the United States, Canada, Australia, the United Kingdom, West Germany, Sweden, Italy, and the Netherlands. They examined the above by focusing on six demographic characteristics that are related to a person's family income and dependency obligations: age, education, employment status, marital status, parental status, and single parenthood (the interaction of marital status and parental status). They used logistic regression equations that treated poverty as a function of age, education, marital status, parenthood, single parenthood, and employment. Separate equations are estimated for women and men for

each country. This led to the conclusion that their results show that gender differences in demographic characteristics are important in accounting for gender differences in poverty rates within as well as across the western industrialized countries under study. Factors like Employment and parenthood (including single parent-hood) are the most important factors in all countries with large poverty gaps (Australia, the United States, Canada, Germany, and the United Kingdom). Marital status, age and education are much less important. Employment, parenthood, and marital status, are the most important factors contributing to cross-national differences in gender poverty differences.

Buvinić and Gupta reviewed information from 65 studies carried out in the past decade. Sixteen of them were done in Africa, 17 in Asia, and 32 in Latin America and the Caribbean. Out of them 61 examined the relation of female headship to poverty. Thirty eight of them used a variety of poverty indicators such as per capita household income, mean income per adult equivalence, per capita consumption expenditures, and access to services and ownership of land and assets. They reinstated the three reasons mentioned by Buvinic and Gupta (1997) in their study as to why women headed household are poorer. Data from rural Botswana, Malawi, Brazil, Mexico, and Peru showed that female headed households often carry a higher dependency burden. In Brazil, female-headed households have a 30 percent to 50 percent greater chance of being in poverty than do male-headed ones, not because they have more children or fewer adults but because the female head earns less.

A research based on household surveys in a number of countries in sub-Saharan Africa (Botswana, Ivory Coast, Ethiopia, Ghana, Madagascar and Rwanda) and Asia (Bangladesh, Indonesia and Nepal) and in Honduras was conducted whose objective was to determine the proportion of women and female-headed households in total poverty. The research yielded little evidence that women and female-headed

households were overrepresented in the group of poor households. Although the poverty levels were higher for female -headed households and for women, the differences were not that significant (Quisumbing, Haddad and Peña, 2001).

As per National Family Health Survey 2005-2006 the proportion of households headed by women has risen by more than half from 9 percent to 14 percent. It was also found that women heading households were older on average as compared to the male heading households. Also female household heads not only have less education than male household heads, but also have less education than the average woman in the population thus making them economically vulnerable.

As per Sylvia Chant's year?, by the late 1970s it was argued that female-headed households were, "the poorest of the poor". One of the reasons for this overrepresentation of women is that female heads of household earn a lower average income in the labor market than their male counterparts, and they face greater discrimination in securing paid employment and other kinds of resources due to time and mobility constraints. Another difficulty specific to female -headed households is the need to perform both paid employment and reproductive labor i.e. domestic work in a compatible manner, since most are single -parent households, which, unlike male -headed households, do not have female spouses (Milosavljevic, 2003).

However, several studies have raised conceptual and methodological doubts regarding the relationship between household headships and poverty, and their use as representative measures of women's poverty. Moreover, the dependency rates in female -headed households are generally higher than in male-headed households. On the other hand, there are positive aspects to female -headed households,

beyond poverty related issues. These include a lesser degree of submittal to marital authority, greater self-esteem on the part of women, more freedom, more flexibility in having a paid job, a reduction in or elimination of physical and emotional abuse, an expenditure pattern that is more equitable and geared towards nutrition and education, and access to social and community support, i.e. to social capital. (BRIDGE Development-Gender, 2001; Feijoó, 1998). These aspects help to weaken the concept of female headships as a synonym of poverty and also demonstrate that poverty is a function of subjective elements since? although these households may be poorer in terms of income, women heads of household may feel less vulnerable (Chant, 2003).

As female household headship is not a clear, representative measure of poverty among women, since it does not show in all cases that women suffer from greater poverty. As a result, it is not a conclusive indicator of female poverty. Nevertheless, this does not mean that the criterion of household headship should be omitted from the analysis of this issue.

## **STUDY SITES**

### **Overview of Kolli Hills**

The Kolli Hills is a mountainous area with a temperate climate located on the eastern border of Namakkal District in Tamil Nadu, India. Forests occupy 44 percent of the total area of 28,293 ha, while agricultural activities take place on 52 percent of the land area, leaving 4 percent for other activities. The introduction of cash crops, the availability of better transport facilities, and the availability of food grains (especially rice) at subsidized prices through the public distribution system (PDS), have all affected the cultivation and consumption of minor millets in the Kolli Hills (King *et. al.*, 2009). Interaction with outside merchants since 1980s has drastically changed traditional agriculture practices in the Kolli Hills.

## **Overview of Jeypore**

In a poor and backward State like Odisha it is least expected that the development scenario of the village and the pace of socio-economic transformations could be better. The socio-economic survey of different types of villages in different regions of Odisha clearly reveals that the State has to make a longitudinal perspective plan for the transformation of the subsistence oriented backward agricultural economy in order to solve the problem of poverty and to improve the 'quality of life' of rural people. Dependence of population on primary sector occupations is quite high, whereas agriculture with its present State of infrastructure and technology and, above all, operational holdings is itself not in a position to provide a substantial form of gainful livelihood to the majority of rural population in Odisha. There have been little occupational diversifications of population at the village level. Nature has given Jeypore generously waterfalls, dense green forests

This study utilized unit level data collected for Koraput (Jeypore, Odisha), and Kolli Hills (Tamil Nadu). These sites represent different socio-economic and agro-ecological conditions, and both sites have high proportions of tribal communities

## **Data**

Sample selection was one of the major components of any field based survey. In case of Kolli hills, stratification based on social category (OC/MBC/ BC/SC/ST) was not possible as 97 percent of the population in Kolli hills are scheduled tribes. Moreover, Valaparnadu panchayat is rich in crop diversification. For the Kolli Hills stratification of sample have been on the basis of crop diversification.

In Jeypore 15 hamlets have been selected on the basis of caste diversification. The initial survey was conducted from January- February in 2014 in Kolli hills and in the month of March-April in Koraput. The primary survey was designed keeping in view the stages of progress methodology by Krishna (2007). Developed 10 years ago and used in diverse contexts and countries, stages of progress have given rise to several notable adaptations. This methodology, involving a seven-step process, that helps ascertain the numbers and identities of poor households - including those who have become poor and those who have escaped poverty Primary data, collected through semi-structured questionnaire for 296 households in Jeypore and 300 households in Kolli-Hills area. Data were collected both at village and at farm-household levels. At the village level, data were collected included crops grown and the village infrastructures. At the household level data were collected included the farmer’s knowledge of varieties and varieties cultivated, household composition and characteristics, land and non-land farm assets, livestock ownership, household membership to different rural institutions, varieties and area planted, indicators of access to infrastructure, household market participation, household income sources and major consumption expenses.

### ***Preliminary Results***

Table 1 contains the distribution of households on the basis of gender for both study sites.

**Table 1: Distribution of Households**

<b>Household Head</b>	<b>Kolli Hills(Tamil Nadu)</b>	<b>Jeypore (Odisha)</b>
Male Hh	152	260
Female Hh	144	40
Total	296	300

**Source:** PDHED survey (2014).

Table 2 shows the division of age groups as per gender for both study sites.

**Table 2: Demographic Division of Study Sites**

<b>Age</b>	<b>Kolli Hills</b>	<b>Jeypore</b>
<b>0-7 years</b>		
Male	106	119
Female	75	106
<b>8-17 years</b>		
Male	109	121
Female	120	105
<b>18-60 years</b>		
Male	374	312
Female	386	329
<b>61 and above</b>		
Male	27	47
Female	19	55
<b>Total Number</b>	<b>1216</b>	<b>1194</b>

**Source:** PDHED survey (2014).

## METHODOLOGY

### Model

To test whether female-headed households are poorer than others, we two regression equations had been estimated.

The first regression equation (1) aims to see what variables affects the poverty of a person with primary focus on gender variables effect on poverty. The first equation is as follows:

$$P_i = \alpha_0 + \alpha_1 DF + \alpha_2 MSD + \alpha_3 Edu + \alpha_4 Tcult + \alpha_5 HS + \alpha_6 CAR + \alpha_7 Age + \alpha_8 Agesq + \alpha_9 animalown \quad (1)$$

Where;

**P** = Poverty which is a binary independent variable which takes on value

1 if household is below poverty line<sup>2</sup> and  
0 otherwise

**DF**= is a gender based binary variable that takes the value  
1 if the head of the household is female-headed and  
0 otherwise

**MS**= is a binary variable that takes the value  
1 if the head of the household is unmarried/ separated/ divorced/  
widow  
0 if married

**Edu**= Education is a binary variable which takes the value  
1 if illiterate  
0 if the head of the household is literate (includes all categories  
from primary to post doctoral)

**Tcult**= It is the total are under cultivation

**HS**= Household size

**CAR**= Child –Adult Ratio

**Age** = It is the age of the head of the household

**Agesq** = It is the square of the age of the head of the household.

**Animalown** = It is the livestock of animals the family owns

The second regression equation seeks to see what factors affects women headed households who are below poverty line. This equation looks at the micro level the same factors in the above equation. Here, we create our dependent variable as an interaction dummy between poverty line and gender dummy. So the second equation (2) is as follows:

$$\text{VAR}_1 = \alpha_0 + \alpha_1 \text{MSD} + \alpha_2 \text{Edu} + \alpha_3 \text{Tcult} + \alpha_4 \text{HS} + \alpha_5 \text{CAR} + \alpha_6 \text{Age} + \alpha_7 \text{Agesq} + \alpha_8 \text{animalown} \quad (2)$$

Where;

**VAR**= Interaction dummy between P\*DF. The variable defines women below poverty line

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<sup>2</sup> Poverty line can be estimated via various methods. In this report we will run regression on both Tendulkar Committee and Rangarajan Committee for better comparison of results.

**MS**= is a binary variable that takes the value  
1 if the head of the household is unmarried/ separated/ divorced/  
widow  
0 if married

**Edu**= Education is a binary variable which takes the value  
1 if illiterate  
0 if the head of the household is literate (includes all categories  
from primary to post doctoral)

**Tcult**= It is the total are under cultivation

**HS**= Household size

**CAR**= Child –Adult Ratio

**Age** = It is the age of the head of the household

**Agesq** = It is the square of the age of the head of the household.

**Animalown** = It is the livestock of animals the family owns

## **Method**

Employment of logit analyses has been done to identify the factors that affecting the relationship between gender of the household head and poverty.

### ***Poverty Line Estimations***

There has been variety of measures in the existing literature to measure poverty in India. Before 2005, the official measure for calculating poverty was based on calorie intake (i.e. a person should have consumed enough calories and be able to pay for associated essentials to survive). The measures was 2400Kcal for rural and 2100Kcal for Urban. Since 2005, Indian government adopted the Tendulkar method of poverty estimations which moved away from calorie intake to a basket of goods and used by rural, urban minimum expenditure per capita necessary to survive. Tendulkar Committee defined not in terms of annual income but in terms of consumption or spending per individual over a certain period for a basket of essential goods. The measures were Rs.27 for rural and Rs.32 for urban. Rangarajan Committee set up in 2012 submitted its report in 2014. According to the committee, the new poverty line works on monthly per capita consumption expenditure of Rs.972 in rural areas and

Rs.1,407 in urban areas in 2011-12. For a family of five, this translates into a monthly consumption expenditure of Rs.4860 in rural areas and Rs.7035 in urban areas.

The table 3 shows the comparison of poverty line estimations done by the two committees namely Tendulkar Committee and Rangarajan Committee.

**Table 3: Different Poverty Line Estimations**

<b>Committees</b>		<b>Tendulkar</b>	<b>Rangarajan</b>
Poverty Method	Estimation	Monthly per CAPITA Expenditure. Only counts on Expenditure food, health, education, clothing.	Monthly Expenditure of family of five food + non-food items such as education, healthcare, clothing, transport (conveyance), rent. + non-food items that meet nutritional requirements.
Rural Poverty Line (Rs)			
Per Day Per Person		27	32
Per Person Per Month		816*	972
Per Family Of Five, Per Month		4080	4860*

**Source:** cso.gov.in

## RESULTS

### Descriptive Statistics

#### *Kolli Hills*

Table 4 states the percentages of poor and non-poor households in Kolli hills as per Rangarajan committee. There are 275 households headed by males out of which 4.36 percent fall below poverty line. Similarly, out of 21 female headed households about 9.52 percent fall below poverty line.

**Table 4: Percent Poor in Kolli Hills as per Rangarajan Committee**

	<b>Male HH</b>	<b>Female HH</b>
Poor	12	2
Non-Poor	263	19
Total	275	21
Percent Poor	4.36	9.52

**Source:** PDHED survey (2014).

However, though the percentage of female headed under poverty is high in percentage terms but the total number of female headed poor is just 2 households.

The table 5 below shows the number of poor and non-poor in Kolli hills as per Tendulkar Committee. There are 275 households headed by males out of which 5.81 percent fall below poverty line. Similarly, out of 21 female headed households about 9.52 percent fall below poverty line.

**Table 5: Percent Poor in Kolli Hills as per Tendulkar Committee**

	<b>Male HH</b>	<b>Female HH</b>
Poor	16	2
Non-Poor	259	19
Total	275	21
Percent Poor	5.81	9.52

**Source:** PDHED survey (2014).

### ***Jeypore***

Table 6 shows the number of poor and non-poor households in Jeypore. There are 260 households headed by males out of which 60.76 percentage of households fall below poverty line. Similarly, out of 40 female headed households about 75 percent fall below poverty line.

**Table 6: Percent Poor in Jeypore as per Rangarajan Committee**

	<b>Male HH</b>	<b>Female HH</b>
Poor	158	30
Non-Poor	102	10
Total	260	40
Percent Poor	60.76	75

**Source:** PDHED survey (2014).

Table 7 shows the number of poor and non-poor households in Jeypore. There are 260 households headed by males out of which 50 percent fall below poverty line. Similarly, out of 40 female headed households about 67.5 percent fall below poverty line.

**Table 7: Percent Poor in Jeypore as per Tendulkar Committee**

	<b>Male HH</b>	<b>Female HH</b>
Poor	130	27
Non-Poor	130	13
Total	260	40
Percent Poor	50	67.5

**Source:** PDHED survey (2014).

The number of poorer households are more in Jeypore compared to Kolli hills.

Table 8 represents the number of female headed households in proportion to total households for both study sites.

**Table 8: Number of Female HH Who are Poor out of Total Poor Households**

	<b>Rangarajan Committee</b>	<b>Tendulkar Committee</b>
Kolli Hills(Full Sample)	14	18
Female Headed Households	2	2
percent female HH poor	14.28 percent	11.11 percent
Jeypore(Full Sample)	188	157
Female Headed Households	30	27
percent female HH poor	15.95 percent	17.19 percent

**Source:** PDHED survey (2014).

It follows from Table 9 that females headed households below poverty form a very small fraction of the total number of households.

**Table 9: Number of Female HH Who are Poor in Proportion to Total Households**

	<b>Number of female Headed Households</b>		Total Number of households	<b>percent to total number of households</b>	
	Tendulkar Committee	Rangarajan Committee		Tendulkar Committee	Rangarajan Committee
Jeypore	27	30	300	9	10
Kolli Hills	2	2	296	0.675	0.675

**Source:** PDHED survey (2014).

## Regression Results

### *Jeypore*

**Table 10: Equation 1 – Determinants of Poverty (Logit Model)**

Variables	Tendulkar Committee		Rangarajan Committee	
	Coeff. (SD)	Odds Ratio	Coeff. (SD)	Odds Ratio
Gender dummy	1.5056** (0.673)	4.50	1.5621** (0.694)	4.76
Marital Status dummy	-0.2873 (0.584)	0.75	-0.3475 (0.586)	0.70
Education Dummy	0.7389** (0.334)	2.09	0.5614** (0.326)	1.75
Household Size	0.2779** (0.113)	1.32	0.3323*** (0.115)	1.39
Total area under Cultivation	-0.3945*** (0.102)	0.67	-0.3861*** (0.0927)	0.67
Child-Adult Ratio	1.4636*** (0.309)	4.32	1.3806*** (0.330)	3.97
Age	-0.2607*** (0.074)	0.77	-0.1988*** (0.073)	0.81
Age square	0.0028*** (0.0007)	1.00	0.0022*** (0.0007)	1.00
Livestock owned	-0.0356** (0.014)	0.96	-0.0054 (0.0103)	0.99
Constant	3.644** (1.542)		2.5131* (1.525)	

**Note:** Dependent Variable: Poverty Line is a dummy variable as per each Committee respectively. (.) Shows standard deviation; 1 percent -\*\*\*, 5 percent \*\*, 10 percent -\*

**Source:** PDHED survey (2014).

Table 10 reports the results of logit model in the study site, Jeypore. The results of poverty estimates for Tendulkar and Rangarajan committee are similar

The gender dummy is significant and women falling into poverty trap are 4.5 times more likely than men. Contrary to the literature, where marital status is not significant and depicts that it does not matter whether household head is married or not when it comes to poverty. Having a large family size and more dependents increases the chances of falling into poverty significantly with odds being 1.32 and 4.32 respectively. Also, education also plays a significant role in determining poverty status of the head of the household. The chances of falling into poverty is 2.09 times more likely if you are illiterate as compared to having education ranging from primary to post doctoral. Age is another determinant which shows a non-linear relationship i.e. in early stages of the life of the household head there is less chances of falling into poverty but at later stages of life more chances of falling into poverty increases.

If household has land that is under cultivation, it reduces the chances of falling into poverty. The odd of falling into poverty is 0.67 times less likely than not being in poverty. It is important to note that according to Tendulkar Committee, owning livestock is significant in helping household to fall out of poverty. The odds being 0.96.

The model satisfies all the diagnostic checks being, link test and goodness of fit test. The link test assess if all the relevant explanatory variables are included. It provides a means of detecting an inadequacy of the relationship between outcome and predictors. The goodness of fit test tells us whether model is correctly specified or not. The site has 300 observations in data set.

Table 11 represents the results where the dependent variable acts an interaction dummy of gender dummy and poverty dummy. The model clears all diagnostic checks.

**Table 11: Equation 2-Determinants of Women below Poverty Line (Logit)**

Variables	Tendulkar Committee		Rangarajan Committee	
	Coeff. (SD)	Odds Ratio	Coeff. (SD)	Odds Ratio
Marital Status dummy	4.5536*** (0.108)	127.20	4.5536*** (0.914)	94.97
Education Dummy	0.4112 (1.412)	1.50	0.9339 (1.340)	2.54
Household Size	-0.5208* (0.301)	0.59	-0.4443* (0.271)	0.64
Total area under Cultivation	-1.3725*** (0.481)	0.25	-0.5471 (0.343)	0.57
Child-Adult Ratio	2.1686*** (0.660)	8.74	1.6360 (0.592)	5.13
Age	0.1620 (0.209)	1.17	-0.1068 (0.191)	1.11
Age square	-0.0012 (0.002)	0.99	0.0007 (0.0019)	0.99
Livestock owned	-0.0086 (0.036)	0.99	-0.0232 (0.021)	1.02
Constant	-9.0718* (4.97)		-8.2499 (4.54)	

**Note:** Dependent Variable: Women below poverty line is a interaction dummy between gender dummy and poverty line as per each Committee. (.) Shows standard deviation; 1 percent -\*\*\*, 5 percent \*\*, 10 percent -\*

**Source:** PDHED survey (2014).

It follows from Table 11 that marital status did not affect at macro level estimates of poverty. If women below poverty line are not married or are single, separated, divorced or widow they have a more significant effect than married women. Large household size helps in reducing poverty for female headed households. Also, having land under cultivation helps in reducing poverty among female headed households who are below poverty line.

**Kolli Hills**

**Table 12: Equation 1 – Determinants of Poverty (Logit Model)**

Variables	Tendulkar Committee		Rangarajan Committee	
	Coeff. (SD)	Odds Ratio	Coeff. (SD)	Odds Ratio
Gender dummy	-1.02 (1.721)	0.36	-0.6215 (1.600)	0.53
Marital Status dummy	1.6162 (1.385)	5.03	0.8477 (1.273)	2.33
Education Dummy	0.9354 (0.721)	2.54	1.4937** (0.654)	4.45
Household Size	0.5571** (0.280)	1.74	0.4087* (0.228)	1.50
Total area under Cultivation	-1.4867** (0.604)	0.22	-0.7598** (0.377)	0.46
Child-Adult Ratio	2.0124*** (0.621)	7.48	2.3041*** (0.601)	10.01
Age	-0.0885 (0.161)	0.91	0.0217 (0.145)	1.02
Age square	0.0014 (0.0015)	1.00	0.0003 (0.0014)	1.00
Livestock owned	-0.0482 (0.126)	1.04	0.0807 (0.067)	1.08
Constant	-5.7273 (3.789)		-8.329* (3.623)	

**Note:** Dependent Variable: Poverty Line is a dummy variable as per each Committee respectively. (.) Shows standard deviation; 1 percent -\*\*\*, 5 percent -\*\*, 10 percent -\*

**Source:** PDHED survey (2014).

Table 12 reports the results of Kolli Hills. The logit model clears all the diagnostic checks. The gender dummy is insignificant for Kolli Hills. This is consistent with the intuition because Kolli hills depict different gender perspective. They people in Kolli Hills believe in widow remarriage and equal participation of women in workforce with no wage

discrimination on basis of gender. They also consider inheritance of assets to be given equally to daughter and son. Having a large family size and more dependents lead a household into poverty. However, having land under cultivation leads to less chances of being into poverty.

## **CONCLUSION**

The study has attempted to analyze and identify factors whether gender affects poverty. Focusing on female headed households primarily, the study has tried to identify the factors that affect poor female headed households. The study has further used two poverty line estimations, Rangarajan Committee and Tendulkar Committee to understand if different poverty lines have different results of the gender- poverty relation. The results provide evidence that choice of poverty measure does not determine whether female headed households are poorer than male headed counterparts or vice versa. Both committees provide us with the same findings.

It is evident from the study that for both the study sites (Jeypore and Kolli Hills) more dependents (higher Child –Adult ratio) and larger household size) are the primary reasons for falling into poverty.

Poverty is significantly affected by gender In Jeypore. However the same is not evident in Kolli Hills. Gender discrimination is not prevalent in Kolli Hills. Women are considered at par with men for wage, inheritance of property, education or marriage related decisions. The conclusions derived are in line of As Kumar-Range (2001) which stated that the development of roads and markets in Kolli Hills has produced a wide range of consequences for gender. These include cropping changes that have led to rising incomes as well as surplus labour, making markets more accessible, expanding the role of women in produce marketing, increasing seasonal labour migration to high demand areas in plains of

Tamil Nadu and plantations, opening up the possibility for equal wage rates for men and women.

However, the results do not provide evidence to support the claim that female headed households are poorer than male headed households and that they require special assistance. This is because of the difference in demographic and socio- economic factors and the role of community based organizations and NGOs. The policy makers can focus on supporting people of both study sites with various schemes regarding educating people and creating more employability.

These results do not offer any important suggestion to policy makers to implement all over India. The policies have to be implemented in line with different states and with the help of NGOs where the importance of the role of NGOs can be a possible area of further research.

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