

**FEMALE HEADSHIP, POVERTY AND CHILD WELFARE:
A STUDY OF RURAL ORISSA, INDIA**

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ABSTRACT

First, on the basis of primary data collected in a rural setting in the State of Orissa, an attempt has been made in this paper to compare the socioeconomic status of male- and female-headed households. Subsequently the differences in the use of resources (time and money) between male-headed and female-headed households have been analysed. Finally, the paper explores the relative well-being of the children between the two groups, i.e., to what extent female headship influences children's access to social services, and children's actual welfare outcomes, measured in terms of health and education indicators.

The results suggest that poverty and female headship are strongly linked in rural Orissa, India. For example, if we draw a poverty line that corresponds to 15 per cent of the population who are poor, 12 per cent of people living in male-headed households are poor as compared with 33 per cent of people living in female-headed households. This result is based on per capita consumption as the welfare indicator. When 40 per cent poverty line is used, the differences are still large in economic terms and are statistically significant. Moreover, when we use adjusted consumption as the welfare indicator, the comparisons show a much higher incidence of poverty among female-headed households. This is true for both measures of poverty line, i.e., 15 per cent and 40 per cent. Thus, we conclude that female headship can be a better targeting indicator for poverty alleviation in rural Orissa.

The results further suggest that the use of resources are significantly different between the two types of households. Labour force participation data indicate that female heads are more likely to work in the market place than women who are spouses of male heads of household. The differences are large: on average 74 per cent versus 54 per cent.

The comparison of household expenditures indicates that, female-headed households spend relatively less on higher quality food items such as meat, vegetables, milk and other dairy products. However, there is some evidence that they spend less on personal consumption such as alcoholic beverages. Overall, the differences are pronounced between these households.

Finally, the findings show that children in female-headed households are disadvantaged both in terms of access to social services and actual welfare outcomes.

JEL Classification : I12, I32, J12, J13, J16

Key words: female headship, poverty, child welfare, gender, differential resource use, social services, household

Introduction

It is estimated that nearly 1300 million persons are poor in the world (UNDP, 1996; ICQL, 1996), and nearly 70 percent of the world's poor are women. Therefore, it is often argued that women, especially in developing countries, bear an unequal share of the burden of poverty (UNDP, 1995; United Nations, 1996).¹ Most of the literature on gender and welfare in developing countries suggest that female-headed households are one of the key target groups deserving special attention for any strategy attempting to reduce poverty.² However, the extent to which female-headed households influence child welfare is not clear and therefore, the ultimate outcome in the welfare of female-headed household is an empirical question (Kossoudji and Mueller, 1983; Folbre, 1991a; Kennedy, 1992; DeGraff and Bilsborrow, 1992). We expect female-headed households to be less well off than male-headed households, mainly because of women's lower income and more severe time constraints on non-market activities as compared with those of men

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1. The idea of feminisation of poverty is by no means widely accepted among scholars, and some recent assessments argue that women are not generally over-represented in poor households (Lipton and Ravillion, 1995). Moreover, there is little "robust evidence" to support such assumption (Quisumbing, Haddad and Pena, 1995).
 2. See the evidence reviewed in Buvinic and Gupta (1997).

(Commonwealth Secretariat, 1989; IDB, 1990). These constraints could lower the access to social services important to child welfare, and lower child welfare outcomes.

The recent literature, however, does not support this reasoning from female-headship to poverty to poor child welfare outcomes. It shows that since female heads of households presumably have full control over their resources and they use resources more efficiently than when a man heads the household, it may produce relatively better welfare outcomes of children in female-headed households (Dwyer and Bruce, 1988; Bruce, 1989; Blumberg, 1991). In other words, even if female-headed households are relatively poor and time constrained, their children may or may not be deprived depending on whether female-headed households' use of resources is sufficiently child-focused to offset the time and income constraints that may be tighter in female-headed households (Louat, Grosh and van der Gaag, 1995; Lloyd and Gage-Brandon, 1993).

Though gender-related differences in the distribution of resources and resources for survival within poor rural households, and intra-household dynamics are much discussed (Agarwal, 1986, 1988a, 1992; Jain and Banerjee, 1985; Singh and Kelles-Vitanen, 1987; Krishnaraj and Chanana, 1989; Dube and Palriwala, 1990), very little is currently known about the relationships between female-headedness, poverty, and child welfare in India. However, there exists some evidence of the linkages between poverty and female-headedness in India (Visaria, 1980; Visaria and Visaria, 1985; Parthasarathy, 1982). The existing literature suggests that female-headed households relative to male-headed households have poorer survival chances, given their lower control over land resources and their greater dependency on wage income, their higher rate of involuntary unemployment, and lower levels of education and literacy of the household heads (Agarwal, 1986; 1988b; 1995; Kumari,

1989; Verghese, 1990; Shanti, 1992; Lingam, 1994; Krishnaraj and Ranadive, Undated).³ Since the relationship between female-headedness and poverty is a relatively unexplored area in India, these work still provide a useful beginning in spite of insufficient statistical rigor and poor data quality. Much more in-depth study from micro-data is necessary for a more definitive understanding of such relationship. Moreover, no study in India examines the relationships between female-headedness, poverty, and child welfare with a systematic empirical analysis of primary data.⁴

This study investigates the links between female-headship, poverty, and welfare in a rural setting in Orissa, India. It asks three questions. First, are female-headed households poorer than male-headed households? Second, do female-headed households spend their resources differently than male-headed households? And third, do children in female-headed households have different access to social services and have different welfare outcomes than their counterparts in male-headed households?

Background

Orissa is one of the poorest states of India, lying in its eastern region. It is characterised, *inter alia*, by low agricultural productivity and the highest incidence of rural poverty in India. Agricultural

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- 3 In sharp contrast with extensive indications of high levels of deprivation among female-headed households from these studies, some recent assessments found no evidence of female-headed households being significantly poorer than male-headed households in India (Dreze, 1990; Dreze and Srinivasan, 1995).
 4. For some of the recent useful studies linking female-headship, poverty, and child welfare in other countries, see Kennedy and Peters (1992); Kennedy and Haddad (1994); Rogers (1996); Appleton (1996); Barros, Fox and Mendonca (1997).

modernisation and rural infrastructural development lag behind most of India (World Bank, 1991). Rainfed rice cultivation predominates, leading to sharp fluctuations in employment availability: seasonal fluctuations have been reported of up to 40 per cent for female employment and 15 per cent for males (Bardhan, 1979). Although wages are not so low as in other regions and male/female wage gap is actually among the lowest in the country, person-day unemployment is high overall and especially high for women (World Bank, 1991).

Both literacy rates and income levels in Orissa, though increasing, remain well below the average for India. Female literacy rate, for example, has reached 34.7 per cent in 1991 compared to 39.3 per cent for India as a whole; labour force participation of women is now 20.8 per cent, compared to 22.3 per cent in India as a whole (Census of India, 1991). On the economic front, 48.3 per cent of Orissa's rural population compared to 33.4 per cent nationally lived below the poverty line in 1987-88, according to the officially released Planning Commission estimates. According to the Expert Group on Poverty (1993), the incidence of poverty in rural Orissa was even higher than rural India (61.5 per cent and 37.6 per cent respectively). Regardless of the debate on the methodology of poverty estimation, it is clear that rural poverty in Orissa is the highest in the country. In 1990-91, Orissa's real annual per capita income was Rs. 1615 compared to Rs. 2239 for India as a whole (Centre for Monitoring Indian Economy, 1993).

With regard to the status of women, Orissa portrays a bleak picture. The status of women is low and is associated with a patriarchal and patrilineal social structure. The general pattern of social life is derived from the ideologies of dependence and the notions of social inferiority of the female - sanctified by scriptures and supported by the folklore (Jetley, 1984). Arranged marriages, physical and social segregation and

extensive restrictions on women are some of the characteristic features of the rural society.⁵

Poverty plays a conditioning role on the relationship of women's autonomy to their reproductive behaviour. On the one hand, among middle and high income women in rural Orissa, autonomy does in fact play a major role, even independent of household economic characteristics on fertility behaviour. On the other hand, among the poorest women, women's autonomy remains virtually unrelated to their reproductive behaviour, suggesting that among these women, even women with a certain amount of autonomy require large numbers of children for their very survival (Panda, 1994). However, these results are mainly confined to male-headed households in rural Orissa.

The female-headed households constitute nearly 10 per cent of all rural households in Orissa. However, this figure might be an underestimation of female-headships because of the range of biases in actual data collection in the Indian census. These biases would stem from a variety of factors such as the enumerators and respondents being typically male (they are predisposed to identify a man rather than a woman as the household head), the definitions used (the head of household is a person on whom falls the chief responsibility for the maintenance of the household), and the instructions given to the enumerators not to make further enquiry (Agarwal, 1986; Visaria and Visaria, 1985). In fact, a recent study suggests that in rural India 30 to 35 per cent of all households are headed by women (World Bank, 1991).

Data Collection and Methodology

Data for this study pertain to 1107 households comprising 6033 individuals. These data come from a field survey conducted in five

5. These social structures are partly responsible for the relative deprivation and insecurity of elderly women, especially widows, in rural Orissa (Panda, 1997a).

villages in the Bolangir district of Orissa. Bolangir district lies in the hinterland of the state which is predominantly agricultural. The farmers are entirely dependent on rainfall in the absence of artificial irrigation facilities. There is little occupational diversification because of the social structure of rural society and the limited opportunities for mobility. Hence, Bolangir district is characterised by rural poverty.

The five study villages are located within a distance of 15 kilometres from the district headquarters, Bolangir, and about 300 kilometres from the state capital, Bhubaneswar. The villages are typically agricultural in nature, though one village has both agrarian and industrial features (i.e., a rice mill). The male literacy rate in the study area is 57.3 per cent while the female literacy rate is 31.9 per cent. Work participation rates comprise of 65.1 per cent and 38.3 per cent for males and females respectively.

The survey utilised a household questionnaire that elicited information from the head of the household on the demographic details of each resident as well as the household's social and economic characteristics. Detailed information on food and non-food expenditures of each household was also collected for use as general welfare measure for the family. The children's access to social services such as education and health, and their welfare outcomes was a separate module in the questionnaire for which information was sought.

All households were covered from the five villages with similar socio-cultural milieu but different levels of development, measured in terms of use of electricity, extent of non-agricultural work and agricultural modernization. Villages were selected so as to be representative of different development pattern found in rural Orissa. Access to infrastructural facilities was standardized by selecting villages which were similar to such criteria as transport facilities, availability of school

and health services and distance from the nearest town. The survey was conducted during the months of September 1989 and February 1990. Interviews took place at the convenience of the respondent, usually at a time when privacy could be maximal.

The concept of headship used in this paper is not rigorously defined in terms of relative 'bargaining' position of the various members of the households to uncover the intricacies of gender, intra-household bargaining, and welfare. The importance of 'bargaining power' of women in the context of 'gender gap' was emphasised by many scholars (Folbre, 1983; Sen, 1990; Folbre et al. 1991b). However, utmost care was taken while collecting information on headship in the survey. Initially, we asked a male member in the household regarding the head of the household, in terms of the usual definition of the headship (the household member on whom falls the chief responsibility for the economic maintenance of the family). To cross-check the reported headship by the male respondent, we asked the same question to the female respondents in those households where both spouses were present. We found that male respondents reported a male head in 93 per cent of cases, whereas female respondents reported male heads in 88 per cent of cases. Hence the assignment of headship was not much dependent upon the gender of the respondent. Moreover, *de facto* female heads of household where male partner is absent temporarily because of migration are limited to only one per cent of all households in the study area.

Since welfare levels of households are raised by the goods and services they consume, not by income available for consumption, and income data are more prone to errors than consumption data, consumption is used as the measure of welfare rather than income in this paper. In fact, the consumption-based measures of welfare are commonly used by the researchers in making poverty assessments (Demery, 1993). The consumption measure used in this paper is comprehensive which includes

food consumption (32 items), daily expenditure (23 items) and consumption expenditures (27 items). Wedding expenditure (the only non-consumption expenditure in the study area) and use value of durable goods could not be included in the aggregation of consumption expenditures because of non-availability of data. The values for all food and non-food items were annualized by referring to different recall periods for different items and the aggregation of total expenditures was reached. Finally the household's total consumption is divided by the number of household members to obtain per capita consumption, which is used as the main indicator of welfare for this paper.

Since children are less 'costly', per capita consumption after adjusting for age-distribution could be a better measure of welfare than per capita consumption. Therefore, we estimated adjusted per capita consumption using adult equivalence scales (assigned a weight of 0.2 to children 0-6 years, 0.3 to children 7-12 years, 0.5 to children 13-17 years and 1 to persons more than 18 years) as suggested by Deaton and Muellbauer (1980, 1986), and Glewwe (1987a , 1987b). This exercise could help us to test whether some of the results in the paper are robust to the definition of welfare. Visaria (1980), for instance, has shown for several Asian countries the sensitivity of the link between poverty and female headship to definitions and methods used.

In order to measure the differential use of resources between male and female-headed households, two factors i.e., time and money have been used. To measure time factor we analyse

- (i) the difference in labour force participation among women of working age (15-59) between women who are heads and who are spouses of heads, and

- (ii) the difference in the proportion of households employing servants for household's maintenance in male and female-headed households.

Similarly, in order to examine the money factor, we analysed to what extent male and female-headed households show different consumption patterns.

For this, four types of expenditure patterns have been analysed :

- (i) share of food and non-food expenditure to total expenditure,
- (ii) share of expenditure for high quality food and alcoholic beverages to total food expenditure,
- (iii) share of expenditure for children to total non-food expenditure, and
- (iv) share of expenditure for domestic help to total non-food expenditure.

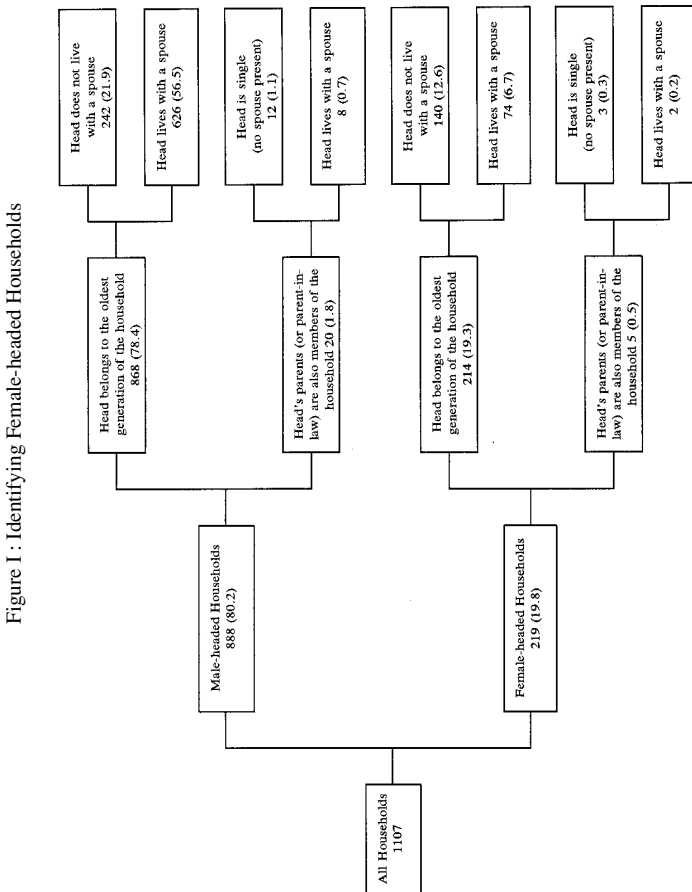
The children's access to social services such as health services (preventive and curative care) and education (enrolment rates in primary, middle and secondary schools) have been examined between the two groups of households. Finally, child welfare outcomes in terms of health (diarrhoea in last two weeks and illness in last 4 weeks) and education (repetition, daily attendance and drop-out rate of children 5-18) indicators have been analysed.

Characteristics of Female-headship in Rural Orissa

Identifying female-headed households

Nearly 20 per cent of households in the selected rural setting in Orissa are headed by women. Of these, two-thirds (or 12.6 per cent of

all households) are headed by women who are in the oldest generation present in the household and who do not have a spouse in the household. These conform to the most common perception of female headship. In nearly all of the other one-third of female headed households, the woman who heads the household belongs to the oldest generation in the household but does have a spouse present. In only one per cent of all households are there members of a generation older than that of the head. Even within that group, the portion of female heads with and without spouses is similar (Figure I).

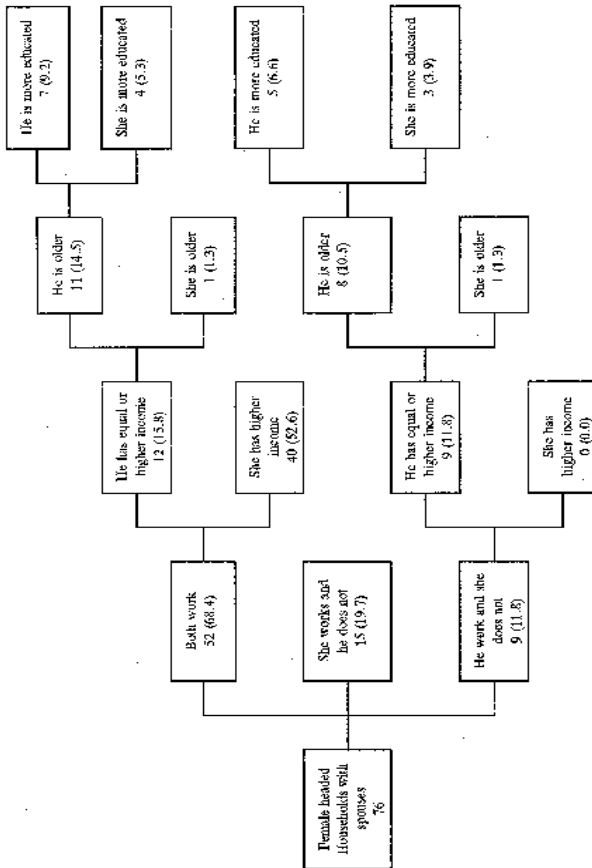


Note : The actual number of households in the sample is the first number. The percentage of all households is the number in parentheses.

In male-headed households, 70 per cent of male heads of households have a spouse present in the household as compared to only one-third of female heads of households have spouses present.

In one-third of the female-headed households, the females with spouses were declared to be the head. This is in contrast to the common perception of female-headship where the male will be considered the head of the household if the female is married. Figure II presents the income, age and education in female-headed households with spouses. It suggests that in these households, the woman had a higher income in 72 per cent of cases. In three per cent of cases she had a lower income but was older. In 9 per cent of cases, she had a lower income and was younger, and had a higher education. In 16 per cent of cases, in spite of earning less, being younger and being less well-educated, she declares herself as head. On the whole, in 92 per cent of cases of female-headship there is an easily apparent reason why the woman might be declared as head (either she has no spouse, or she has a higher income, is older, or better educated than her counterpart). In the remaining 8 per cent of cases of female heads (just one per cent of all households), the reason is less clear.

Figure III : Income, Age and Education in Female-headed Households with Spouses.



Note : The absolute number of households in the sample is the first number. The percentage of female-headed households with spouses is in parentheses.

How are female-headed households different ?

Table 1 shows the household size and household composition by gender of head. It suggests the following results:

1. Female-headed households are smaller than male-headed households. Their household size is 3.6 members, as compared to 5.6. The smaller average size of female-headed households stems partly from the lesser tendency

of women to live in large size households. Of all the large size households (more than 6 members), only 5 per cent are headed by women. These account for 14 per cent of female-headed households. On the other extreme, of all single person households, one half are women and they account for 28 per cent of female-headed households as opposed to only 7 per cent of male-headed households.

2. Female-headed households have relatively fewer children, both in terms of the average number of children per household and in terms of the per cent of household members who are children. There is an average of only 0.3 children aged 0-4 years in female-headed households,

Table 1. Household Size and Household Composition by Gender of Head

Household Size and Structure	Gender of the Head	
	Male %	Female %
Household size		
Single person	7.3	28.3
Medium : 2-5	28.6	58.0
Large : 6 and above	64.1	13.7
Household structure		
Mean size	5.9	3.6
Number of children 0-4	0.7	0.3
Number of children 0-9	1.5	0.6
Number of children 0-14	2.2	0.9
% of members 0-4	12.6	8.4
% of members 0-9	24.9	17.0
% of members 0-14	37.0	25.8

but 0.7 in male-headed households. Extending the range of children aged 0-9 and 0-14, doubles and triples the numbers respectively, but nevertheless, maintaining the patterns.

Table 2 presents the characteristics of households heads by gender of head. Some of the most striking findings of table 2 are given below :

Table 2. Characteristics of Household Heads by Gender of Head

Characteristics	Gender of the Head	
	Male %	Female %
Marital Status		
Married	71.4	34.7
Widowed	15.5	52.1
Divorced/separated	4.8	9.6
Never married	8.3	3.7
Age of the Head		
15-29	13.3	7.7
30-39	22.2	15.5
40-49	19.8	12.8
50-59	20.8	23.7
60 and above	23.9	40.2
Education of the Head		
None	56.3	78.1
Primary	16.8	10.0
Middle	14.3	5.5
Secondary and above	12.6	6.4
Occupation of the Head		
Not working	15.0	20.5
Agricultural self-employed	38.3	19.6
Agricultural wage labourer	20.5	49.8
Non-Agricultural self- employed	15.0	4.6
Non-Agricultural wage labourer	11.3	5.5
Number of days worked during last year		
3 months or less	20.3	42.5
3-6 months	12.1	17.8
6-9 months	28.7	29.3
9 months and more	38.9	10.3
Caste of the Head		
Lower caste (SCST)	29.5	58.9
Upper caste (Others)	70.5	41.1

1. The marital status of the heads of the female-headed households is quite different from that of the heads of male-headed households. Female-headed households are less than half as likely as male-headed households to be married -- 35 per cent as opposed to 71 per cent. They are also three and half times as likely to be widowed -- 52.1 per cent as opposed to 15.5 per cent. They are also twice as likely to be divorced or separated. They are also less than half as likely to be single.
2. Female heads of households are more than one and half times as likely as male heads of households to be over age 60 -- 40 per cent as opposed to 24 per cent. They are correspondingly one and half times less likely to be under age 40 -- 23 per cent as opposed to 36 per cent. They are slightly less likely to be in the prime earning range of 40-60.
3. There are systematic differences in the education status of male and female heads of households. Female heads of households are half as likely as male heads of households to be literate -- 22 per cent as opposed to 44 per cent. They are also less than half as likely to be above the level of primary education. Thus, differential earnings are likely to be due to inferior levels of formal education on the part of the female heads.
4. Female heads of households are somewhat less likely to work than are male heads of household -- 75 per cent as opposed to 80 per cent. However, occupational structure of heads of household differs markedly by the sex of the

head of the household. For instance, female heads of household are half as likely as male heads of household to be self-employed in agriculture -- 20 per cent as opposed to 38 per cent. They are also two and half times as likely to be agricultural wage labourers -- 50 per cent as opposed to 21 per cent. Finally, they are less than one third as likely to be self-employed in non-agricultural activity and half as likely to be non-agricultural wage labourer.

5. When working, female heads of household work fewer days in the last year prior to survey. While 43 per cent of female heads work for less than 3 months in a year, only 20 per cent of male heads work for such a less period. On the contrary, at the upper end, while only 10 per cent of female heads work for more than 9 months as high as 40 per cent male heads work for such a lengthy period. This implies lower earnings of female heads of households partly because of more time devoted to domestic work and partly because of non-availability of work as a result of seasonal employment in agriculture. As noted earlier, half of the female heads work for agricultural wages, and all of them work for a lesser period (less than six months). Moreover, earnings from agricultural wages for females are less than males. All these factors imply a markedly different levels of earnings between male and female heads of households.
6. As regards caste status of male and female heads of household, female heads of household are two times as likely as male heads of household to be in lower caste, i.e. scheduled castes and scheduled tribes.

Table 3 presents the profile of socioeconomic status of households and their members by gender of household head. It reveals the following findings:

Table 3: Profile of Socioeconomic Status of Households by Gender of Household Head

Socioeconomic Status	Gender of the Head	
	Male %	Female %
<i>Ownership of land</i>		
% of landless hhs	24.3	49.8
Size of landholdings/hh (acres)	4.9	2.0
Size of landholdings per capita (acres)	0.83	0.56
<i>Living conditions</i>		
% of hhs with electricity	36.9	14.2
% of hhs residing in a built-up structure	37.3	12.8
Number of rooms per hh	3.1	1.5
Number of rooms per person	0.53	0.42
% of hhs with toilet facility	18.1	5.5
<i>Ownership of modern consumer durable goods</i>		
% of hhs owning tables/chairs	41.0	14.2
% of hhs owning watch/cycle	44.4	11.0
% of hhs owning a radio	42.5	12.3
% of hhs owning a motor cycle/scooter	6.4	0.9
% of hhs owning a television set	14.9	4.6
<i>Education of hh members</i>		
% of literate (total)	62.7	33.6
% literate (male)	59.3	40.1
% literate (female)	37.2	29.1
<i>Caste of hh members</i>		
% of SC/ST	31.9	62.2

Note : hh indicates household and hhs indicates households.

1. The difference in land ownership is substantial between the male-headed households and female-headed households. While three - fourths of the male-headed households own land, only one-fourth of the female-headed households own land. Moreover, mean size of land holdings per household is two and half times higher in male-headed households as compared to female-headed households (5 acres and 2 acres respectively). Even size of land holdings per capita is relatively higher in male-headed households.
2. There are systematic differences in living conditions between male and female-headed households. When living conditions of the households are measured in terms of household electrification, housing type, number of rooms per household and per capita, and toilet facilities, in all cases male-headed households show a substantially higher living standards than that of female-headed households.
3. The ownership of modern consumer goods such as tables/chairs, watch/cycle, radio, motorcycle/scooter and television sets are much higher in male-headed households as compared to female-headed households.
4. As regards education status of male and female members, the difference is marked in male and female-headed households. Both male and female literacy are relatively higher in male-headed households.
5. The members of the female-headed households are about two times as likely as members of the male-headed households to be in lower caste (SCs and STs)---62 per cent as opposed to 32 per cent.

As regards occupational structure of all members of the household, the pattern is almost similar to household heads i.e., 72 per cent of the working age members in female-headed households work, while 80 per cent of working age members of male-headed households work (Table 4). The working age members of female-headed households are twice as likely to be wage labourers in agriculture --46 per cent as opposed to 23 per cent. They are also one-third as likely to be non-agricultural self-employed, and one-fourth as likely to be wage-labourers in non-agricultural activity.

Table 4. Distribution of Individuals 15-59 by Occupational Structure and Gender of Head

Occupational Structure	Gender of the Head	
	Male %	Female %
Not working	20.3	27.9
Agricultural self-employed	26.7	17.2
Agricultural wage labour	23.2	46.0
Non-agricultural self-employed	13.5	4.7
Non-agricultural wage labour	16.3	4.1

The dependent-to-worker ratio in the household is similar in both male and female-headed households (1.0). This is the result of the combination of differences in age structure in the household and in labour force status of working age members (Table 5).

The results so far indicate that female-headed households are over-represented by widows, divorced or separated women, are smaller, have less children and have both heads and other members who are less likely

Table 5. Total Number of Household Members for each Labour Force Status by Gender of Head

Labour Force Status	Gender of the Head	
	Male	Female
Total number of employed persons in the hh	2.9	1.8
Number of hh members out of labour force	0.8	0.7
Number of hh members too young to work	2.2	0.9
Number of hh members too old to work	0.1	0.2
Number of dependents per worker	1.0	1.0

Note : hh indicates household.

to be working. When working, they work for a lesser period in a year and in lower category of occupation. Both heads and other members of female-headed households are less likely to be literate. They are more likely to be in lower castes. Moreover, female-headed households are less likely to own land and modern consumer goods and are more likely to be in poor living conditions. All these factors may lead us to believe that female-headed households would be poorer than male-headed households. This issue is discussed in the next section.

Poverty and Female-headship

A growing body of literature stresses that rural female-headed households are disproportionately represented among the poor (Youssef and Hetler, 1981; 1984). In order to test this proposition, the relationship between poverty and female headship is examined in some detail in the following section.

Table 6. Comparison between Male-headed Households and Female-Headed Households: Per Capita and Per Adult (Adjusted Consumption, According to Various Household Categories)

Household Category	No. of persons		Mean hh size		Mean per capita consumption		Ratio $\frac{PC_m}{PC_f}$	T test of hyp. $PC_m = PC_f$	Mean adjusted consumption		Ratio $\frac{AC_m}{AC_f}$	T test of hyp. $AC_m = AC_f$
	MHH	FHH	MHH	FHH	MHH (PC _m)	FHH (PC _f)			MHH (AC _m)	FHH (AC _f)		
All households	5245	788	5.91	3.60	1497	980	1.53	14.64	2137	1288	1.67	16.27
Single -person	65	62	1.00	1.00	2662	2133	1.25	1.49*	2662	2133	1.25	1.49*
One potential worker excluding single-person households	1699	230	4.92	2.99	1287	921	1.40	3.23	1576	1024	1.54	5.96
One potential worker with child (children)	1448	148	5.46	3.44	978	886	1.10	1.06**	1608	1228	1.31	1.92**
One potential worker with child, (0-4 years old)	1028	102	5.81	3.92	834	801	1.04	0.91**	1219	1097	1.11	1.36**
One potential worker with child, (5-9 years old)	1112	108	5.73	3.48	895	752	1.19	1.32	1235	1202	1.03	0.29**
One potential worker with child, (10-17 years old)	1122	113	5.75	3.32	972	843	1.15	1.82**	1390	1403	0.99	-0.63**
Two potential workers with child (Children)	1988	178	6.48	4.45	1376	920	1.50	11.27	2244	1372	1.64	13.37

* difference is not significant at the 1% level.

** difference is not significant at the 5 % level.

Notes: 1. Mean consumptions are in Rs./ year

2. Adjusted consumptions is the consumption per adult equivalent computed from the following scale. 0-6 years old: 0.2; 7-12 years old: 0.3; 13-17 years old: 0.5; > than 18:1.0.

3. The T-test of the hypothesis of equal consumption between male and female-headed households is computed under the assumption of unequal variance of the distributions.

4. 'Potential worker' means a person between 18 and 59 years old.

5. MHH indicates Male-headed household, FHH indicates Female-headed household, hh indicates household and hyp. indicates hypothesis

Consumption Measures and Female-headed Households

Table 6 presents the comparison of per capita and per adult equivalent (adjusted) consumption between male-headed households and female-headed households, according to various household categories. The mean per capita consumption level in female-headed households is Rs.980 per year as compared to Rs.1497 in male-headed households. In other words, male-headed households have per capita consumption levels which are about a half higher than those of female-headed households. This leads to a strong conclusion that female-headed households are poorer than male-headed households. The differences are large in economic terms and statistically significant.

When mean adjusted consumption is used, it shows that male-headed households are wealthier than the female-headed households by about 66 per cent (Table 6, right-hand panel). The differences are more when using unadjusted mean per capita consumption because male-headed households are more likely to have more children. However, the differences are still large in economic terms and statistically significant.

The comparison of households with only one potential worker and children of various ages reveals that the average welfare differences are not significant statistically. It means, the difficulty of single-handedly raising and providing for children is apparently as great for male households as for female households in similar circumstances. On the contrary, when there are no children or when two potential workers are present in the households, the welfare differences are substantial. The results suggest that part of the difference in mean per capita consumption is accounted for by the differences in age-structure between male-headed and female-headed households. Therefore, household structure is a crucial indicator in understanding the levels of household welfare. However, in

addition to household structure, other variables that tend to be correlated with headship can also influence the welfare level of the household. Therefore, to examine the individual influence of each of the included variables, holding all other variables constant, a multivariate regression analysis is used.

Table 7. Determinants of Households' Welfare as Defined by Per Capita Consumption

Variable	Coefficient
<i>Dummy variables</i>	
Gender of the head (Female head=1)(Male head=0)	-.14*
Marital status of the head (widowed, divorced or separated=1, else=0)	-.05
Occupation of the head (non-agricultural activity=1, else=0)	.10*
Caste of the head((SC/ST=1, else=0)	-.03
<i>Continuous variables</i>	
Age of the head	.00
Education of the head(years of education)	.14*
Number of children, 0-4	-.16*
Number of children, 5-9	-.11*
Number of children, 10-18	-.01
Size of landholdings per capita	.22*
Adjusted R ²	0.5137

* significant at the 5 % level or better.

- Notes:
1. Dependent variable is measured as ln (per capita consumption).
 2. Universe is all households.

As shown in Table 7, female headship has an independent and negative influence on the welfare level of the household. Other factors included in the multivariate analysis are standard and the results are as expected. The education and non-agricultural occupation of the household head, and per capita land ownership have significant and positive influence on the welfare level of the household. Household structure has a significant and negative effect on per capita consumption. In other words, the more the children and the younger they are (below 10), the lower is the household welfare. These results are confined to the overall mean levels of the household welfare. Therefore, let us turn to examine the relationship between poverty and female-headedness by concentrating on the low end of the distribution of welfare.

Poverty Measures and Female-headed Households

In this paper, two poverty lines have been used - Rs.972 per capita household consumption, and Rs. 1224 per capita household consumption. These correspond to the poorest 15 and 40 per cent of the population respectively. These two poverty lines are considered here on the basis of Kakwani and Subbarao's (1993) estimation of poverty line in rural India during 1973-87. According to 1986-87 prices, in rural Orissa, Rs 972 per capita household consumption is treated as ultrapoor and Rs.1224 per capita household consumption is treated as poor (Kakwani and Subbarao, 1993).

A comparison of mean per capita consumption for female and male-headed households leads to the strong conclusion that female-headed households are poorer than male-headed households. This is true for both 15 per cent poverty line and 40 per cent poverty line. Using mean adjusted consumption shows that female-headed households are much poorer than male-headed households, because male-headed households

are more likely to have more numbers of children (Table 8). This is also true for both measures of poverty line.

Using the lower poverty line and per capita consumption, we find that head count index differ significantly by headship. The results show that 12 per cent of people living in male-headed households are poor, compared with 33 per cent in female-headed households. The difference is statistically significant. When adjusted consumption is used as the welfare indicator, it shows that 11 per cent of people living in male-headed households are poor, compared to 37 per cent in female-headed households. The difference is statistically significant for the 15 per cent poverty line. For the more generous poverty line (Rs.1224) and for both unadjusted and adjusted per capita consumption, the comparisons

Table 8. Poverty and Female Headship †

Welfare Measure	15% poverty line		40% poverty line	
	Male Head	Female Head	Male Head	Female Head
Per capita consumption				
Mean per capita consumption	1497	980	1497	980
Mean per capita consumption of the poor	748	662	996	862
Head count index	12.3	32.7	34.5	73.8
Adjusted per capita consumption				
Mean adjusted per capita consumption	2137	1288	2137	1288
Mean adjusted per capita consumption of the poor	1178	749	1535	1030
Head count index	11.2	36.5	32.0	78.0

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

Note : Mean unadjusted and adjusted consumptions are in Rs./year.

show a higher incidence of poverty among female-headed households. Hence, the results show a systematic difference in welfare level of the household between male-and female-headed households regardless of any measures of poverty line. Thus, the results clearly are consistent with the notion that female-headship is correlated with poverty irrespective of the poverty measures and the welfare measures used.

Differential Resource Use

The analysis in this section concentrates on whether the resources (time and money) available to female-headed households differ from those in male-headed households.

Time use

It has already been noted that female heads of households are somewhat less likely to be employed than those of male heads (75 per cent versus 80 per cent). Moreover, female heads work for lesser period and in low category of occupation. Hence, their income-generating activities are lessened. In order to examine whether female-headed households would be constrained in their welfare-generating household non-market activities more than male-headed households, we examine the difference in labour force participation among women of working age (15-59) between women who are heads and who are partners of heads.

It is found that while 74 per cent of female heads of working age are in labour force, only 54 per cent of the spouses of the male heads are in labour force. Hence the spouses of the male heads are considerably less likely to be employed than the female heads. Thus the data supports the typical characteristics of male-headed household i.e., the male head works for income and the female partner spends more time on non-market household activities that produce welfare for the family and for the

children. In contrast, the typical female head fulfils both the roles, i.e., she earns income for the family and spends time for welfare-enhancing activities of the household. Thus the female head would be constrained for time and money because of this double burden. To further explore the constraints that female heads of household face, we analyzed the difference in employing servants who provide domestic help in male and female-headed households. Surprisingly, while one-fourth of male-headed households employed servants, only 5 per cent of female-headed households employed servants. Thus, there is a systematic difference in the use of time resource between male and female-headed households.

In the next section, we examine the difference in other resource, i.e., money between male and female-headed households. Specifically, the difference in consumption patterns is analyzed between the two groups of households.

Consumption Patterns

Table 9 shows the consumption patterns by levels of per capita consumption and gender of household head. It reveals the following conclusions :

1. There is significant difference in percentage share of food and non-food expenditure to total expenditure by gender of the head of the household. In female-headed households share of food-expenditure (58 per cent) is much larger than the share of non-food expenditure (42 per cent), using the more generous poverty line (Rs.1224.). However, the reverse is true in case of male-headed households. Therefore, consumption difference might have the most marked impact on child welfare in female-headed households.

2. There is also marked difference in the combination of foods purchased. Expenditure on such higher quality food items as meat, vegetables, milk and other dairy products tend to

Table 9. Consumption Shares by Gender of Household Head

Consumption Shares	Per capita consumption				All	
	Less than Rs. 1224		More than Ra. 1224		Gender of the Head	
	Gender of the Head		Gender of the Head			
	Male	Female	Male	Female	Male	Female
<i>% share to total expenditure</i>						
Food expenditure	52.7	58.2	46.1	50.2	47.6	55.4
Non-food expenditure	47.3	41.8	53.8	49.8	52.4	44.6
<i>% share to total food expenditure</i>						
Expenditure for high quality food (items such as meat, vegetables, milk and other dairy products)	15.2	11.4	34.1	31.2	29.3	17.7
Expenditure for alcoholic beverages	8.9	4.6	10.4	3.8	10.0	4.3
<i>% share to total non-food expenditure</i>						
Expenditure for child goods such as clothing and educational expenditure (among households with children)	14.8	4.8	27.5	15.3	25.4	10.6
Mean household expenditure for child goods (Rs.)	482	69	1799	590	1427	235
Expenditure for domestic help	2.3	0.3	8.1	3.6	6.9	1.6
Mean household expenditure for domestic help (Rs.)	75	4	421	67	319	25

be higher in male-headed households, irrespective of the levels of per capita consumption. However, expenditure on alcoholic beverages are much larger in male-headed households irrespective of the levels of per capita consumption and this supports the findings of Horton and Miller (1989).

3. The share of expenditures for child goods to total non-food expenditures for household with children shows that the percentage share as well as mean levels of household expenditures vary significantly by gender of household head, irrespective of the level of per capita consumption. For instance, in female-headed households, the mean levels of household expenditure for child goods is only Rs.69 compared to Rs. 482 in male-headed households, using per capita consumption below Rs. 1224.
4. It has been seen that one-fourth of male-headed households employ servants as compared to only 5 per cent female-headed households. Obviously, therefore, expenditure for domestic help is expected to be high for male-headed households. The results presented in Table 9 suggest that both share of expenditures for domestic help to total non-food expenditure as well as average expenditure levels are higher in male-headed household, regardless of the levels of per capita consumption. For instance, using 40 per cent poverty line, the mean levels of household expenditure for domestic help vary significantly by gender from Rs. 4/- in female-headed households to Rs.75/- in male-headed households.

On the whole, the evidence so far suggests that female heads use their time differently than other women and that consumption patterns differ between male and female-headed households. The differences are also substantial. In other words, female heads of household have faced tighter constraints on non-market activities. They are also pressed for money. As a result they may not be able to translate their priority for children's welfare. The implications for children's welfare of the difference in time and money use are examined in the next section.

Children's Access to Social Services

In this section, children's access to social services by gender of head of the household is measured by way of two factors, i.e. health care and education.

Health Care

Table 10 shows children's access to health care by gender of household head and gender of the child. It shows that both preventive care and curative care of children are significantly different by gender of household head. The results also hold true when the analysis is performed separately for girls or boys.

The children for whom clinic visits for preventive care were reported in the six months preceding the survey, 12 per cent of them in male-headed households received preventive care as compared to only 6 per cent in female-headed households. The difference is statistically significant. The same is true when the analysis is performed separately for girls or boys. A similar significant difference is found for full immunization coverage.

For those children who are reported to be ill in the four weeks prior to the survey period, 35 per cent of them in male-headed households

Table 10. Children's Access to Health Care†

Access to Health Care	Both sexes		Boys		Girls	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
% of children 0-5 years old for whom clinic visits for preventive care were reported in the last six months preceding the survey	11.6	6.3*	15.0	10.8*	8.0	2.3*
% of children 1-4 years old with full immunization coverage against BCG, measles and DPT.	39.6	23.5*	49.1	33.3*	28.8	14.8*
% of children 0-17 years old who were reported to be ill in the last four weeks preceding the survey and had received medical care	35.1	24.5*	49.8	39.5*	18.4	9.1*

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

received medical care (curative), compared to 24 per cent of such children in male-headed households. The difference is statistically significant. The results hold true when the analysis is performed separately for girls or boys (Table 10).

One of the most striking findings of Table 10 is that, both preventive and curative care for boys are much more prevalent as compared to such care for girls, both in male as well as female-headed households. Hence, the gender inequality in health care is observed, regardless of gender of household head.

Education

As shown in Table 11, while 85 per cent of children from age 5-10 in male-headed households are enrolled in school, only 68 per cent of

such children in female-headed households are enrolled in school. The difference is statistically significant. When we concentrate on the enrolment of middle (11-13 years) and secondary (14-18 years) age children, the difference in the enrolment of children is pronounced by gender of the head. When the analysis is performed separately for girls or boys, the difference in the enrolment of children by gender of the head is statistically significant for all the age groups of children.

Table 11. Enrolment Rates by Gender of Child and Household Head †

Age of child	Both sexes		Boys		Girls	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
5-10 yrs	84.9	68.2*	92.1	72.7*	76.5	63.4*
11-13 yrs	72.2	54.1*	79.4	57.9*	64.6	50.0*
14-18 yrs	44.3	29.4*	54.1	34.1*	34.5	24.4*

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

As in the case of health care, the most striking finding of table 11 is that boys are more likely to be in school than girls regardless of the gender of the head of the household.

On the whole, the results suggest that the differences in children's access to preventive and curative health services, and primary, middle and secondary education were found to be statistically significant by gender of the head of household. Moreover, boys access to health services and education exceed those of girls, regardless of the gender of the head of the household. Thus we found that children in female-headed households of rural Orissa are disadvantaged in terms of access to social services compared to children in male-headed households. Since female-

headship and poverty are strongly linked and since female-headed households face more time and money constraints, the results are much as expected. The next section looks into the actual welfare outcomes of children.

Child Welfare Outcomes

In this section, we explore the children's welfare outcomes by looking for differences by gender of the household head. The analysis is also performed separately for boys and girls.

Health Outcome

The incidence of diarrhoea is a good indicator of how effectively the household produces health.⁶ As shown in Table 12, nearly 27 per cent of children under five years of age in female-headed households have an episode of diarrhoea in the two weeks prior to the survey, as compared to only 14 per cent of such children in male-headed households. The difference is statistically significant. Moreover, the differences in the episode of diarrhoea among boys as well as girls in the two weeks prior to the survey are also significant by gender of the household head. Another important finding is that girls are more likely to be affected by diarrhoea than boys, regardless of the gender of the head.

Table 12. Health Status of Children Aged 0-4 †

% Reporting	Both sexes		Boys		Girls	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
Diarrhoea in last 2 weeks	13.6	27.3*	9.3	20.6*	18.6	34.4*
Illness in last 4 weeks	34.2	33.3	36.2	35.3	32.2	31.3

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

6. See Panda (1997b) for theoretical and empirical evidence.

As regards illness of children in the month prior to survey, the differences are not significant by gender of the head of household, whether all children are considered together, or the analysis is performed separately for boys or girls (Table 12).

Education Outcome

In order to measure education outcome, we consider three measures -- repetition, daily attendance and drop-out rate. Repetition, drop-out rate and low daily attendance are signs of poor educational performance. Moreover, these features are common in rural India and hence, in rural Orissa.

Table 13 shows the percentage of repeititors among children enrolled in school. It reveals that there are no significant differences in the repetition among children aged 5-10 and 11-13 (those who are in primary and middle schools) in female-headed households vis-a-vis those in male-headed households. However, the differences are substantial and

Table 13. Percentage of Repeititors Among Children Enrolled in School †

Age of the student	Both sexes		Boys		Girls	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
5-10 yrs	8.1	10.3	7.3	9.4	9.3	11.5
11-13 yrs	10.4	10.0	8.1	9.1	13.2	11.1
14-18 yrs	7.2	16.0*	6.5	13.3*	8.3	20.0*
All	8.4	11.7	7.3	10.3	9.9	13.3

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

statistically significant among children aged 14-18 (those in secondary school) between male and female-headed households. The same is true when the analysis is performed separately for boys or girls. The repetition of girls 14-18 as compared to boys is much higher in female-headed households --20 per cent as opposed to 13 per cent.

As shown in Table 14, for the sample of enrolled students in primary, middle, and secondary schools, nearly three-fourths of them reported having attended all official school days in the week preceding the survey. The difference in full attendance of enrolled children during the previous week is not significant in primary and middle schools between male and female-headed households. This is true for boys as well as girls in these households. But, boys are more likely to be attending the school regularly than girls regardless of the gender of the head for all levels of schooling. Among the enrolled students aged 14-18 who are in secondary school, the difference is significant by gender of the head of the household. The results hold true for either of the sexes of enrolled students aged 14-18.

Table 14. Percentage of Children with Full Attendance During the Previous Week, Among Children Enrolled in School †

Age of the student	Both sexes		Boys		Girls	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
5-10 yrs	76.2	77.6	83.1	84.4	66.4	69.2
11-13 yrs	78.8	75.0	84.4	81.8	71.7	66.7
14-18 yrs	70.1	52.0*	85.3	66.7*	46.3	30.0*
All	75.3	70.9	83.9	79.3	63.2	60.0

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

When we consider all the enrolled students together, or separately for boys or girls there are no significant differences in full attendance in the previous week between the gender of the household head and between boys and girls in these households. However, overall, while 80 per cent of the enrolled boys attended school for all the days of the previous week, only 61 per cent of enrolled girls reported full attendance. Therefore, girls are irregular in attending school, compared to boys irrespective of the gender of the household head.

Table 15 shows the drop-outs among children and mean age at drop-out by gender of the household head and gender of the child. The results suggest that there are systematic differences in drop-outs among all children, boys and girls, in female-headed households vis-a-vis those in male-headed households. Moreover, children in female-headed households drop out of school two years earlier than the children in male-headed households. Boys in female-headed households drop out 1.8 years earlier than their counterparts in male-headed households. Girls in female-headed households drop out 2.7 years earlier than their counterparts in male-headed households. The mean age of boys who drop out is nearly 11 years, as contrast to 8 years for girls.

Table 15. Drop-outs Among Children by Gender of Household Head †

Particulars of Drop-outs	Both sexes		Boys		Girls	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
% of children who dropped out	32.0	50.0*	23.3	45.8*	41.4	55.0*
Mean age at drop-out	10.2	8.1*	11.4	9.6*	9.5	6.8*

† The tests are for differences by gender of the household head.

* Significant at the 5% level or better.

The analysis so far indicates that children in female-headed households are disadvantaged in terms of a variety of measures used like children's health status, and education performance. The present unfavourable welfare outcomes would be undesirable both for present welfare loss and future formation of human capital on which the children will rely in their adult lives. The strong support for the hypothesis that children in female-headed households are disadvantaged compared to those in male-headed households is consistent with the evidence presented in previous sections of the paper - that poverty and headship are strongly linked, that female-headed households face more time and money constraints and are not able to offset these constraints because their use of resources are less child-oriented, and that their children fare worse in terms of access to social services than children in male-headed households.

Conclusions

The results clearly suggest that poverty and female-headship are strongly linked. Thus, female-headship may be a useful targeting indicator for poverty alleviation in rural Orissa. In other words, targeting social programmes to female-headed households will be a successful way of reaching the poor.⁷ Moreover, results suggest that female heads face more time and income constraints - they use their time differently than other women and consumption patterns differ between the two types of households. The consumption expenditures of female-headed households are so low that even though they spend less on personal consumption like alcoholic beverages, they also spend less on child-oriented goods. The evidence further suggests that children's access to preventive and

7 In this context, education, or the control of productive assets, remain real issues; and they are critical for strategies aiming at acceleratng development as well as rendering it more equitable (Lipton, 1988; Quibria, 1993; Agarwal, 1994; ILO, 1995).

curative health care, and primary, middle and secondary education in female-headed households are much lower than their counterparts in male-headed households. Finally, the study supports the hypothesis that children in female-headed households are disadvantaged in terms of actual welfare outcomes (education and health outcome). The evidence of lower welfare outcomes of children in female-headed households is consistent with the findings that (i) female-headed households are burdened by tighter income and time constraints, (ii) that their children are disadvantaged in terms of access to social services and finally, (iii) that female-headship and poverty are strongly linked regardless of the welfare measure used, and the poverty measure used.

One of the most striking findings of this study is that, on the whole, regardless of gender of the head of household, girls are relatively disadvantaged compared to boys both in terms of access to social services and actual welfare outcomes.

Since Orissa, like other north Indian states, has a long history of gender inequities in access to resources (such as education and health) and crucial means of production (such as land and associated production technology), our results are in the expected direction and are consistent with the main body of female-headship literature.

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