

Gender Differences in Intra-Household Expenses on Health and Education in Rural Odisha

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ABSTRACT

Literature on gender differences in household level expenditure outcomes, often highlight relatively higher expenditure on education and health in women-headed households. The present paper seeks to study this aspect of gendered household expenditure in the context of rural Odisha. The study also makes an attempt to explore the possible effects of family income, household size, educational level, number of earning members, etc. on the level of expenditure on education and health. With the help of descriptive statistics and regression analysis on the primary data collected from 1500 rural households from different districts of Odisha, the paper concludes that there are significant differences in the consumption patterns between men and women-headed households. However, the study undertaken for this paper also found that even in women-headed households, key elements of patriarchy do play a role in influencing decision-making on household expenditure.

Keywords: Gender bias, Consumption pattern

JEL Classification Codes: J16, P46

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I INTRODUCTION

Health and education are two key components of human capital formation. Expenditure on these two aspects is a very crucial step towards ensuring sustainable and equitable growth of households and the nation as a whole. The government continuously introduces programmes for the spread of education and simplification and affordability of healthcare. While it does encourage the citizens to utilise the education and healthcare facilities, it is not however the only factor affecting the utilisation of such facilities. It falls upon the individual or the household as a unit to use these resources and to what extent.

Household decisions are often taken on the basis of priorities and social demands keeping in mind the accessibility to resources. Usually such decisions are made by household heads. With no clearly specified definition, the term “household head” essentially refers to person assigned the task of making all decisions for the household as an economic unit. This position may be given to a member of a household for being the sole income earner or by virtue of one’s age and experience. This makes household decision making susceptible to individual preferences and notions.

This paper studies variations in expenditure decisions between two categories of households based on whether they are headed by men or women. Gender differences exist in almost all societies. Social outcomes expected for the two sexes are different and so are the economic opportunities available to them. Poverty among women is more wide spread than among men. Of the people living on 1 dollar or less a day, women and children constitute a major portion (Christensen, 2019). According to S. Rosenhouse (“Identifying the poor: is headship a useful concept?” World Bank Living Standard Measurement Study Group Working Paper No. 58, 1989), women household heads are at a disadvantage due to lack of experience and smaller means of income, time constraints due to dual task set (both at home and place of employment) and a greater dependency on them for being sole income earners. (Dungumaro, 2008)

In patriarchal societies around the world and in India, it is presupposed that households have a male head. Census 2011 enumerates men headed households to be 86.9% of the total households in India and 87.5% of total households in Odisha. The incidence of female-headed households is relatively rare and considered different from conventional household design of father, mother and children. The reason why a female heads a household is more due to absence of alternative than social and economic empowerment. It is unlikely that a woman would be the head in presence of an adult male. However the regular household design is undergoing gradual changes and women are increasingly taking charge of decision making. Death of the husband, increasing rates of divorce and nuclear families and even migration end of in growing number of households with female heads. The percentage of female headed households has increased from 10.3% in Census 2001 to 13.1% in Census 2011 to 14.6% as estimated in National Family Health Survey 2015-16. Female headed households are more varied in terms of household size, structure, age and marital status of head as well as economic opportunities available.

The social and economic barriers faced by women, differences in the characteristics of such households will have a significant impact on how the household head decides to spend the income. Whether the expenditure is targeted at present sustenance or sustainability as well also depends on how the heads evaluate their

socio-economic standing. In this paper we aim to find evidences of differentiated expenditure patterns regarding healthcare and education among men and women headed households.

II. REVIEW OF LITERATURE

The Odisha State report of the recent National Family Health Survey conducted between 2019 and 2021 reports a sex ratio favourable towards women (1063 females for 100 males). It also finds the number of households with a woman as head at 17% (a three percent point increase over the previous NFHS) and nearly 14% of the population live in female headed households. Some findings of the recent survey that shed light on levels of women empowerment have been noted below:

Among the women who are currently married-

- 34% of women who work for cash and their households work for cash report that they earn more than or just equal to what their husbands do.
- Close to 71% women in participate in household decision making regarding these three subjects (their own healthcare, major household purchase, visiting their own family & relatives)
- About 45% women have access to money that they can decide how to use. This percentage is higher for women in urban areas than those in rural areas and also for women who are employed for cash.

Expenditure decisions of a household are influenced by multiple overlapping linkages between various factors. Apart from income, demography of the households, societal influences and availability of facilities is key to determination of streams of allocation. These expenditure decisions are dependent on income and household characteristics such as size, number of dependent members, pre existing health conditions etc. Among the many factors that influence the income and expenditure of the household, head of the household has a significant role (Ahmad & Fatima, 2011). Being the functional decision maker of the household, characteristics of the head (such as age, education and gender as well as the social notions that covertly influence desired outcomes of individual and households) affect the amount of income and the direction of flows of expenditure.

The conventional household design expects to have a male as the decision maker; however women-headed households are not uncommon. A study by (Kossudji & Mueller, 1983) in Botswana calculated about 43% of households to be female headed, but the numbers are not as high in case Pakistan where (Khan & Khalid, 2012) found 1233 women headed households in a sample of nearly 15000 households. Women frequently accept economic functions to supplement household income in times of crisis or during purchase of high valued goods. (Bellante & Foster, 1984). But in a predominantly patriarchal society women tend to assume headship in absence of an adult male i.e. if they are widowed, separated or the male member stays away (Panda, 1997). In presence of the male member they assume a passive role. It was found that when the household head has migrated, the decision making rests with his spouse and resource allocation is in favour of girls, however upon his return the situation reverses. This implicates that the gender of the household head has a major role to play in resource allocation and bias (if any) (Antman, 2015).

The major courses of expenditure include food consumption, housing, healthcare, education, energy use, loan repayments and even asset development. Housing and durables are a major portion of the consumption and are higher in urban areas than



rural areas (Khan & Khalid, 2012). There is a significant difference in expenditure patterns when we consider gender differences in household heads. Food consumption is healthier for women as individuals and as household heads. (Ruel, Minot, & Smith, 2005). Studies also have shown that while men headed household spend more on food, spending is more on health, education and housing in women headed households (Khan & Khalid, 2012).

The availability of resources and the level of deprivation are influenced by household characteristics such as dependency ratio, child-woman ratio and proportion of female members in the household, age and education of the household head, disability and household size. The household characteristics are also crucial in determining where the income is spent. At similar levels of income, households with larger number of dependent members will direct income towards subsistence; while smaller size may permit for extravagant expenditure (Kiran & Dhawan, 2015). More number of children, elderly or members with chronic illness tends to increase the share of health expenditure and decrease the available income (Rehman, 2013). Members enrolled in higher education or professional courses may increase the share of education in expenses. An outstanding debt may also impact (negatively) the expenses that the decision maker does not deem necessary. Attempts at acquiring consumer durables, new assets for future income or even repair and construction of new houses affect immediate consumption.

There are also cases where pending or future expenditure plans may affect household demography- more members need to be engaged in jobs to push through economic crisis, skill development may be restricted, decision to have single child in order to provide better, preference of male child etc.

The discussion on expenditure falls short when we ignore gender bias. Gender bias is a broad concept that manifests itself in culture, society, economy and even individual behaviour. Unequal portioning in the allocation of expenditure on the basis of whether the beneficiary is male or female can be termed as gender bias in resource allocation. The pre-existing notion of men being stronger, more able and more dependable than women is responsible for a preference towards male members. The pre-existing notion of men being stronger, more able and more dependable than women is responsible for a preference towards male members. The assigned gender roles which deign men as economically more productive result in better attention being given towards their education and nourishment (Brines, 1994). This is also responsible for binding women to domestic activities that are seen to not have any economic importance. Thus while women are treated as necessities, they are rarely prioritised. This reflects in expenditure as well- in times of crisis education of girl child is more likely to be stopped than the male child (Kingdon, 2005). Even the health status of male working members is given more importance than that of female members (working or otherwise). This differential treatment is likely to be lessened at higher ages. Expenses on male and female child tend to equate as the reach higher levels of education (Kumar & Naincy, 2020). Even in older ages, the expenditure tends equalise for men and women (Cooper & Piro, 1974).

III. ANALYSIS

This paper attempts to study the differences in intra household expenditure on health and education among men and women headed households. The available literature has indicated that there exists a difference in how men and women head of households allocate their available resources. Various studies have found that

expenditure in women headed households is directed towards productive purposes like healthcare (preventive and curative), education, and housing and balanced food consumption. We in this paper attempt to test this hypothesis in case of rural Odisha. Impact of various factors on the amount of expenditure made on health and education has also been traced in the later part.

Data has been collected from different districts in Odisha (as a part of M.Phil dissertation) using a schedule. In order to find whether this difference in sample means also holds true for the population, independent samples t-test (parametric) and Mann Whitney U-test (Non- parametric) with sex of the head of household as the grouping variable were conducted. The Mann- Whitney U-Test assumes the H_0 as the distribution of variables to be the same across the categories of sex of head of the household.

In the sample of 1498 households, 1345 (89.7%) reported a male head of household and 153 (10.3%) reported a female head. The average size of households is between four to five members and the average household income is Rs13, 602 per month for the entire sample. However the average income of household heads individually is Rs 5688 implying that the head of the household need not be the sole income earner of the household.

Table 1: Difference in Household Characteristics of Men and Women Headed Households

Variables	Women Headed	Men Headed
Number Of Family Members	4.38	4.43
Average Years Of Schooling	8.996732	7.947807
Total Income	11949.24	13790.62
Per Capita Income	3263.300240	3180.939540
Amount Of Loan Outstanding	3031.9184	3568.7609
Amount Of Loan Borrowed	9098.4379	7674.4009
Monthly Education Expenditure	209.756523	167.864745
Per Capita Education Expenditure	46.031067	35.864092
Monthly Health Expenditure	244.918889	196.186035
Per Capita Health Expenditure	56.195054	43.512891
Total Asset	206425.1634	243301.4362

Source- Author's calculation from primary data

The number of members in men headed households is marginally higher in comparison to women headed households and so is the ratio of number of earning members to household size. The average number of years of schooling attained by the members is, however, higher for women headed households. Null hypothesis of no variation in distribution was retained for household size and ratio of earning members to household size and rejected for average years of schooling. Independent samples t-test also finds a significant difference between men and women headed households in case of educational attainment of members.

Total income of men-headed Rs. 2021 higher than women headed households which is nearly a 16% gap. However the per capita monthly income of women headed households is marginally higher than their male counterparts. This may be due to the average size of women headed households being relatively smaller. The total asset value on an average is Rs. 2,06,425 and Rs. 2,43,301 for women and men



headed households respectively. In terms of asset thus women headed households fall behind by 17.8%. In a previous study, factors such as differential health and educational levels, decision making power at the household level and other supply side issues are identified as factors that influence the wage differential among men and women in Indian states (Mohanty, Bisht, & Mohapatra, 2014). Lower valuation of assets reduces the income earning capacity; lower income reduces the disposable income with the household thus the necessary expenditure is met using borrowed funds.

Table 2: Independent Samples t-Test

Variables	t-Value	Mean Difference
Number Of Family Members	-.354	-.047
Average Years Of Schooling	4.413*	1.049
Total Income	-2.924*	-1841.381
Per Capita Income	.629*	82.360
Amount Of Loan Outstanding	-1.219	-536.8
Amount Of Loan Borrowed	1.512	1424.0
Monthly Education Expenditure	3.771*	41.891
Per Capita Education Expenditure	5.988*	10.166
Monthly Health Expenditure	2.686*	48.732
Per Capita Health Expenditure	3.622*	12.682
Total Asset	-2.677*	-36876.272

* represents 5% Level of Significance

Source- Author's calculation from primary data

Table 3: Mann- Whitney U-Test

Variables	Significance
Number Of Family Members	0.425
Average Years Of Schooling	0.000
Total Income	0.005
Per Capita Income	0.023
Amount Of Loan Outstanding	0.041
Amount Of Loan Borrowed	0.038
Monthly Education Expenditure	0.000
Per Capita Education Expenditure	0.000
Monthly Health Expenditure	0.000
Per Capita Health Expenditure	0.000
Total Asset	0.009

Source- Author's calculation from primary data

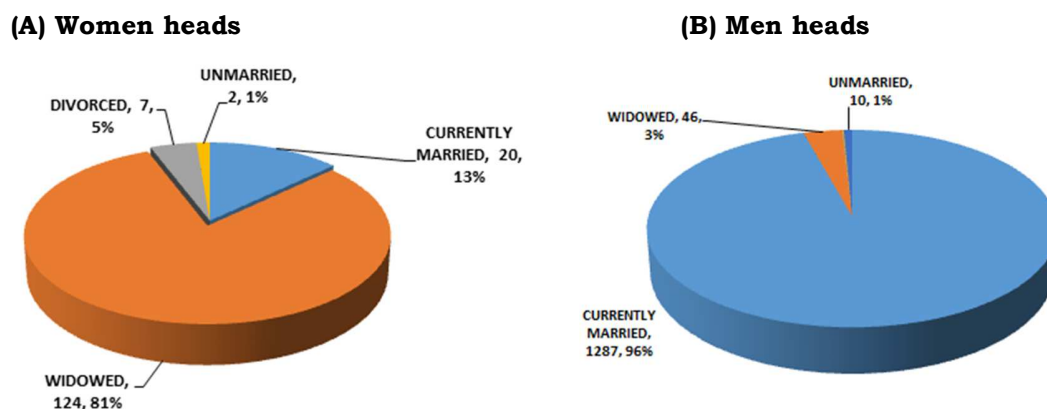
Amount of loan borrowed is higher for women headed households by Rs1424 (20%). However they are also proactive in loan repayment as the average loan outstanding for households with women heads is lower by Rs. 537 (17%). Lower household income, lower availability of resources and higher amount of loan borrowed are indicative of lower access to financial resources for women headed households. The t-test conducted found a statistically significant differences in means of total monthly income of the household, total asset, but not for amount of loan borrowed and amount of loan outstanding do not. Mann-Whitney U Test rejected the null

hypothesis for total monthly income, monthly per capita income, total asset and amount of loan borrowed and outstanding.

On the expenditure side, monthly household and monthly per- capita expenditure on education and health are higher for women headed unit not only relatively (i.e monthly expenditure on health and education as apportion of household income) but also in absolute sense. While household and per capita education expenditure of men headed households is Rs. 167 and Rs. 35 respectively, it is Rs 209 and Rs 46 respectively for women led households. Similarly in case health, household expenditure for women led household stands at Rs. 244 per month while the same for men headed household is Rs. 196 per month (a 24% gap). Monthly household and monthly per capita expenditure on health and education also show a statistically significant difference between male and female headed households. Null hypothesis was rejected for monthly household and per capita expenditures on health and education between the two categories

Given that the data collected is of hospital and medicine expenses, the results implicate two different situations. Firstly women headed households are more attentive towards curing ailments of members which results in higher expenditure. Secondly men headed households may be focussing on preventive healthcare more thus reducing the occurrence of diseases and curative healthcare expenditure. Since curative expenditure is difficult to measure, it is accepted that women headed households spending a greater amount of their resources towards productive consumption.

Figure 1: Marital Status of Household heads



Source- Author's calculation from primary data

The households were then further classified to groups having 10 percent of the sample after arranging the household income, monthly health and education expenditures lowest to highest. Average income of the decile groups varies between Rs. 4243 for the lowest to Rs.29212 for the highest group, among men headed households. And for their female counterparts, it varies between Rs.2840 and Rs.24238 for the lowest and highest groups respectively. The inter-group variation in health expenditure is higher for men headed households and the same for education expenditure is higher among households with female heads. Average among decile groups for monthly health expenditure varies up to Rs.658 for men headed and Rs.644 for women headed households. In case of monthly education expenditure, it varies between Rs.30 and Rs.461 in case of men-headed households and Rs.63 and Rs.522 for women headed households. Mean deviation group averages is seen to be



higher for women headed households for groups representing lower levels of income. Thus deprivation is higher among women headed households at lower income levels.

It is noted from the data that while majority of men heads are married, majority of women heads are widowed. This implies that headship may have been assigned in compelling situations and choices made in positions of distress as in case of absence of an adult male member owing to death, separation or migration. Households where the earning male member has migrated and the female is assigned the duties of the household head or even in cases where woman heads the household by virtue of her age rather than her income, the independence gets restricted. These conditions presuppose limited resources and autonomy in decision making within the household. The existing social structure in India, that deems women as a liability on the household, reduces the say of women in community decision making as well as resource allocation. Women hence lag behind their male counterparts in education and skill training thus limiting their income earning capabilities. All the above reasons are why women headed households are relatively poorer and more dependent on borrowings.

Household expenditure need not have a single factor influencing it. It rather is a play of several social and economic factors that determines how much a household spends and saves. We have used linear regression for this purpose.

$$Y = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_7 D_{1i} + \beta_7 D_{2i} + \beta_8 D_{3i} + \beta_9 D_{4i} + \mu_i$$

Where,

Y = Combined monthly expenditure on health and education

X₁ = total household income

X₂ = Indebtedness ratio = $\frac{\text{AMOUNT OF LOAN OUTSTANDING}}{\text{AMOUNT OF LOAN BORROWED}}$

X₃ = Average number of years of schooling attained by household members

X₄ = Earning Ratio = $\frac{\text{NUMBER OF EARNING MEMBERS}}{\text{NUMBER OF FAMILY MEMBERS}}$

X₅ = Female Concentration = $\frac{\text{NUMBER OF FEMALE MEMBERS}}{\text{NUMBER OF FAMILY MEMBERS}}$

D₁ = Sex of the head of household; 0 = Female; 1 = Male

D₂ = Economic Category; 0 = BPL; 1 = APL

D₃ = Occupation Source dummy (nonag); 1 = only non agricultural source of income

0 = otherwise

D₄ = Occupation Source dummy (both); 1 = both agricultural and non agricultural source of income, 0 = otherwise

The model represents various demographic and economic factors affecting monthly household expenditure on health and education and the R-squared value is 38.5%.

Total income of the household, indebtedness ratio and the dummy of economic category and occupation category have significant positive impact on health and education expenditure. With rise in income subsistence consumption's share in total consumption declines and savings, investments for future and luxury goods' share

increases. Indebtedness is significantly and positively related to health and education expenditure indicating that a considerable portion of such expenses may be financed by borrowings. It is seen that expenditure on health and education is higher by Rs.74 for households that are above poverty line. Having only non agricultural source of income causes expenditure on health and education to be higher by 54 units and having both agricultural and non agricultural sources of income causes the expenditure to be higher by 82 units in comparison to the households in the base category.

Table 4: Results of Regression

Variables	Coefficient	T- Value	Significance
(Constant)	362.658	10.372	.000
Total Income	.018	20.465	.000
Indebtedness	144.851	5.834	.000
Avg Years Of Schooling	-10.433	-4.853	.000
Earning Ratio	-145.590	-5.849	.000
Female Concentration	-153.752	-4.912	.000
Sex	-140.290	-7.199	.000
Economic Category	76.830	5.766	.000
Occupation dummy non-ag	59.941	3.300	.001
Occupation dummy both	85.794	4.539	.000

Source- Author's calculation from primary data

The average years of schooling attained by the family members, earning ratio, female concentration and the dummy of the sex of the household head have a negative impact on combined health and education expenditure. With higher number of years of schooling, it is likely that they are aware of balanced diet, hygiene, safe living and working environments which reduces the incidence of diseases and thus the expenses needed for curing them. Also with literacy and awareness people are able to utilise insurance and other social benefits to which reduces the burden of out of pocket expenditure. Employment and education expenditure are inversely related in the sense that any earning member will not be enrolled in any educational institution and vice versa. Healthcare of earning members is generally given higher importance. Hence due to higher priority on preventive healthcare, expenditure on disease cure is lower. With increase in number of females, the expenditure on health and education of the household declines indicating lower importance given to health needs and educational attainment of women. Compared to the base category i.e. the female headed households, the expenses of households with male heads are lower by Rs. 143.

IV. SUMMARY OF RESULTS

In case of rural Odisha, the household characteristics donot vary significantly among men and women headed households. However the income and asset holding is relatively higher for men headed households. On the contrary expenditure on health and education for women headed households is higher. It is also noted that the expenditure is lower when the number of females in the household increases. Indebtedness has no negative impact on expenditure. In situations where loans are taken for consumption purposes it is likely that the purpose may be financing education and payment of medical bills.



V. CONCLUSION

Gender discrimination operates in a self-perpetuating manner, first it results in lower formal education, lower skill specialization among women thus reducing their income earning capacity. Women form a larger portion of unskilled labour (which pays less) than skilled labour. It is also seen that women are paid less than men for the same amount of work. Feminisation of poverty is a serious problem among the developing countries. The gender inequality is both the cause and consequence of a greater proportion of women being socially and economically vulnerable. As we establish that women heads are capable of making informed choices and utilize their earnings better, it becomes necessary to bridge the gender gap in all possible methods. Ensuring equal opportunities, skills and wages will be helpful towards this goal.

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