

## **Intra-Household Decision-Making—A Gender analysis**

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**ABSTRACT:** This paper attempts to test whether women do have bargaining power in Intra-household decision-making and is based on data drawn from a survey in Mumbai of 200 married women. The regression models take account of human capital factors. The results show that for similar levels of academic background, work experience, salary levels, profession etc., women systematically have very little voice at lower salary levels than at higher salary levels in matters related to investments within their household. Thus, pure human capital models of labour market are inadequate to account for the gender perspective. Any analysis of the labour market must hence incorporate gender as an explicit variable.

**KEYWORDS:** Education, Labour market, Gender Discrimination.

**JEL Classification:** I2, J1, J12

The basic objective of this study is to analyze the impact of Intra-household decisions and bargaining strength's of the partners' further impacting children's human capital formation. The motive is to find the factors influencing women's bargaining strength which would further lead to Investment in future generations Human Capital formation.

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Date of Submission: 26-12-2018

Date of acceptance: 11-01-2019

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### **I. BACKGROUND**

Households are the earliest place of gender socialization, passing along knowledge, skills and social expectations. Allocating resources is an additional way households shape gender responsibilities. The institution of patriarchy helps to understand the intra-household altruistic relationships that create an ideology of under-investment in girls. How society views and allocates resources between a girl child and a boy child has utmost importance for the next generation. The loci of economic and patriarchal control decide how, where when and who creates choices. Women's choice is decided both by her economic resource position in the existing organisation of production as well as her 'home responsibilities' as delegated to her by society.

Gender bias can be seen playing a major role in the allocation of resources as one considers the inequalities on the social and economic aspects. This bias strongly favours sons in relation to education and training, especially in households with limited resources. Sons are considered better resources in labour and employment opportunities than daughters (Hanna Papanek, 1990). Schultz's (1995) surveys the evidence on recent trends noticed in the growth of women's human capital formation.

The economics of the family and household was fully brought into the mainstream by Becker. The essence of Becker's approach was that, given one set of preferences, the household combined time, goods purchased in the market, and goods produced at home to produce commodities that generated utility for the household. The household is considered as if it were an unitary entity. Briefly the classical unitary model of family behaviour assumes a common set of family preferences that it tries to satisfy by allocating the time and other resources of its members ((Becker, 1965)).

Becker considers the case of a household with two members, a benefactor and a recipient. Becker's benefactor is an altruist, deriving utility from his own consumption ( $c_b$ ), and also from the utility associated with the recipient's consumption. In contrast, Becker's recipient is selfish, deriving utility exclusively from her own consumption ( $c_r$ ). The benefactor, could in a dictatorial manner, be capable of imposing his preferences on the recipient. Becker gives a solution, "rotten kid theorem" to this problem (Becker (1974, 1981)).

"Intra-household resource allocation" refers to the allocation of resources among individuals belonging to the institutional forms like the family and household. Though the idea of development focuses on the welfare of the individuals, the complex set of interpersonal interactions (economic and social) that influence such development is largely unacknowledged in economic theories. These interpersonal interactions have a direct bearing on the institutions of family, household and community (Haddad, L. *et al* (1994)).

Tools of welfare economics do not completely explain the factors affecting consumption within a family. These factors include the value system prevalent in society as well as the family. The economics of

transfer within the family may be also completely different from that within a society. Yet, it maybe possible to describe the tradeoffs made by society and by the family and identify the factors affecting intra-household consumption (Paul Schultz (1989a)).

How a family as a decision-making unit, behaves in the area of consumption is determined by different external influences and constraints. Family co-ordination and the pooling of resources also help to specify general models of the family. As in societal models family models too exhibit a ‘tension’ between efficiency and equity. From the efficiency point of view education, consumption and health of an individual needs to be supported as long as these are made profitable than the available alternatives. Parental altruism would leave each child equally ‘well off’ as parents consider their well being as important as their own. However, parents may invest more in children perceived to be more efficient, anticipating natural abilities to increase the returns on such investments (Paul Schultz (1989a)).

An alternative to unitary model known as ‘Collective models’ arose when heterogeneous groups controlled the functioning of the household. These models do not impose the assumptions of the unitary model. Two important features of the collective models are: first, collective models allow decision making in the household to have different preferences; second, collective models do not require any special household welfare indicator to represent a utility function.

The two types of collective models are cooperative and non-cooperative models. Unitary models can be considered as a co-operative collective model where preferences in the household are identical. All collective models are Pareto-optimal, but where the actions of an individual are assumed to be dependent on the actions of others the models will not be Pareto-optimal. In a cooperative collective model individuals choose to get married even though they have a chance to remain single, because the utility (of resources) derived from marriage outweigh the utility derived from remaining single. The surplus that a household generates is distributed among the members of the household (Haddad, L. *et al* (1994)).

Barbara Herz (1989) observed that the differences in women’s education levels and data about their health and nutritional positions point to the fact that the “unitary household” is not always applicable. In the unitary model either everyone in the family agrees on objectives and pools resources or one “family head” decides preferences and allocates resources. However, evidence in several societies suggests that members do bargain in a family, hence allocation of resources has to be understood after factoring in the concept of “cooperative conflicts”.

Hence, the logical next step to the unitary model would be the one where there are conflicting interests among family members, which would be resolved under the cooperative models using the Nash solution, which a vast majority of these models have relied on. The family demand system though realistic does not help in predicting which intra-family allocations are more likely to occur. Extending the family demand model to accommodate the conflicting interests of family members is a reasonable next step. These conflicts need to be resolved by a specific bargaining mechanism to be tractable and testable. The cooperative Nash-bargained framework, as discussed by McElroy and Horney (1981) is an interesting possibility. It nests within it as a special case the unified family demand system (Paul Schultz (1989a)).

Similarly Francois Bourgignon and Pierre-Andre Chiappori (1992: 356) identify as the principal shortfall of the unitary model the fact that it does not meet “the basic rule of neo-classical micro-economics” analysis, namely individualism”. These individualist critiques have sought to resolve the preference aggregation and exogeneity problems by developing household decision-making to the individual level and treating the outcomes as the result of strategic interaction between symmetric family members. As McElroy (1990) points out, there is nothing in the co-operative game-theoretic framework that limits the analysis to “players” of different ages or genders; only the fact that they are individuals, and nothing else about their identity, matters for this approach. Further E. Katz (1997) points out that as with household members “voices” (treated as the ability to enter into the bargaining position) in the bargaining process, co-operative models also treat exit (where literal exit is in the form of “divorce threat” models) options in a symmetry fashion.

Gender differences in education in the context two-sex overlapping generations are explored in a study by Echevarria and Merlo (1999). Men and women of each generation bargain over consumption, number of children, and the investment in education of their children. Echevarria and Merlo (1999) use the aggregate data on education and fertility contained in the *1994 Human Development Report* published by the United Nations (the reference data was for 1992) for each of the 146 countries. Men and women, in this model, are considered fulfilling two roles in their lifetime – a period they live as children, where they receive education that their parents give them, and a period they live as adults. As adults they are assumed to have the following: same preferences over their consumption, utility of their children, as well as no bias towards boys or girls. They are altruistic towards their children. Men and women of each generation bargain in the decision to get married, individual consumption, and education to give to each child. The welfare of the members of each generation depends on their education level. The education level in turn decides their threat points. To choose the level of education the parents need to resolve the bargaining problems that their children would face, which also brings

in the education levels of the parents of the child’s spouse. The model describes the bargaining between the families of the groom and the bride. The sequence of bargaining is marked by altruism towards the children and includes the problems of the two families (Cristina Echevarria and Antonio Merlo (1999)).

*The question asked in this paper is the following: Does education and control over resources give women a voice in intra-household bargaining power once other determinants of intra-household decisions are taken into account?*

Section I of this paper discusses the data undertaken for this study. Section II discusses the empirical results achieved through its analysis and Section III discusses the conclusion of this paper.

**Section I**

The issue of the formation women’s human capital especially in education followed by control over resources leading to intra-household decision making is a serious concern for gender equality and social justice. Hence a regression was carried out to see if women are discriminated against within the family in spite of having the similar education and control over resources. In the regression, comparison is made with their spouses to see if discrimination persists. A dummy variable model is used for this regression.

The primary data comprises of a sample size of 200 working women within Mumbai from different spheres of work and with varying qualifications. Care was taken to select women who had at different levels of education, profession and varying levels of income levels. Detailed data were collected for them and their spouses with regards to education. Lastly data was collected whether the profession and the designation of the women and their spouses made any difference to the intra-household decision making. The sample was randomly collected and consisted of women from various sectors and professions.

**Table 1: Women’s education corresponding to Spouse’s education**

		Gender		Total
		Husband	Wife	
Education	Upto SSC	11	04	15
	Upto HSC	09	08	17
	Graduation	65	92	157
	Post-Graduation	33	35	68
	PhD	05	07	12
	Graduation/Professional Education	34	25	59
	Post-Graduation-plus-Professional Education	40	28	58
	PhD + Technical Education	03	01	04
Total		200	200	

Where, PhD stands for the individual possessing Doctoral Degree

PG stands for the individual possessing Post-Graduation Degree

UG stands for the individual possessing Graduation Degree

HSC stands for the individual possessing Higher Secondary Education

SSC stands for the individual possessing Secondary Education

Technical education is defined in this study as one, which would professionally help an individual in the employment sphere. For example, a graduate with a diploma in Software is technically qualified to work in the IT Sector. Hence it is an additional qualification to the regular education (and is not taken into account while adding to the total for either women’s education or their sibling’s education) acquired by any individual from primary education to doctoral education. Professional education is defined in this study as one as a Chartered Accountant degree, Medical Professional, Management Professionals etc.

The qualification of their spouse’s education to woman’s education is shown in Table 1. This data reveals that women have higher education equivalent to that of their spouse’s upto post-graduation level. The difference is very evident when males seem to be encouraged to take professional education in comparison to the females. Further, Girls parents too do not hesitate in investing in the education of their daughters.

**Table 2: Average Income levels of the Couples**

	Gender	Mean Income (lakhs per annum)
Non- graduates income levels	Husband	1.2
	Wife	1.2
Graduation income levels	Husband	3.5
	Wife	3.2

Post-graduation income levels	Husband	12.1
	Wife	9.6
Professional income levels	Husband	25.4
	Wife	25.0

Average income per annum in Table 2 indicates that women are almost on par with men in all categories. They have touched the glass ceiling but yet have to break the glass ceiling. Only in case of Post graduate educational level women seem to be earning less than men.

**Table 3: Intra-Household Decision in different family spheres**

Intra-Household Decisions	Regular Household Expenses	Education of children	Health of the family members	Recreational*	Fin Plan**
Spouses	18	16	05	75	128
Women	157	38	111	27	05
Joint Decision	25	146	84	98	67

\*Recreational: Family Trips undertaken, Regular restaurant outings etc.

\*\*Fin Plan: Financial Planning refers to investments made for children, retirement, etc.

Certain reservations have to be allowed with respect to the data. First of these limitations may be the sample size itself, which is rather undersized for exact results. Generally, detailed questions on family especially regarding income and expenditure details evoke responses that are approximate rather than exact. However, the relative appraisals about income and expenditure tend to be accurate if not in actual terms. Also, details of the expenditure on health, education either with regards to the women themselves or their spouses may also be approximate appraisals based on perceptions rather than exact and authentic figures.

Using this primary data, the study proceeds to the first analysis. The variables used in this analysis are education, expenditure, and income. The variable of education is divided into six different categories: SSC ( $d_1$ ), HSC ( $d_2$ ), Graduation ( $d_3$ ), Post-graduation ( $d_4$ ), and technical education ( $d_5$ ). We use dummy variables for each of the educational category. That is, if the woman possessed technical/professional education then the variable is assigned the value 1 or else 0. This is carried out for the remaining of the five educational categories. Similarly the variable of sex is also taken as a dummy variable. Women have been assigned the value 1, while men have been assigned the value 0.

The purpose of this study is to find whether, once other factors that determine Intra-household decisions are accounted for, control over resources, i.e., whether the control over resources by women tend to influence parental altruism in various spheres of the household and children. In the given regression Intra-household Decisions for Regular Household Expenses ( $IHDR_i$ ) is considered as the dependent variable, Women's Annual Income ( $WAY_i$ ), Spouse's Annual Income ( $SAY_i$ ), Women's Profession ( $WPF_i$ ), Spouse's Profession ( $SPF_i$ ), were considered as independent variables. The educational categories performance were further divided into six different categories: Individuals possessing Doctoral Degree ( $PHD_i$ ), Post-graduation Degree ( $PG_i$ ), Graduation Degree ( $UG_i$ ), Higher Secondary Education ( $HSC_i$ ), Secondary School Education ( $SSC_i$ ), and Technical Education ( $PRP_i$ ).

$$IHDR_i = \alpha + \beta_1 WAY_i + \beta_2 SAY_i + \beta_3 WPF_i + \beta_4 SPF_i + \beta_5 WEL_i + \beta_6 SEL_i$$

where

$IHDR_i$  = Intra-Household decision on Regular Household Expenses of the  $i$ th Family

$WAY_i$  = Women's Annual Income level for the  $i$ th individual

$SAY_i$  = Spouse's Annual Income level for the  $i$ th individual

$WPF_i$  = Women's Professional level for the  $i$ th individual

$SPF_i$  = Spouse's Professional level for the  $i$ th individual

$WEL_i$  = Women's Educational level for the  $i$ th individual

$SEL_i$  = Spouse's Educational level for the  $i$ th individual

And  $\alpha, \beta$ 's, are the intercept estimate and coefficient estimates of the variables, respectively.

If there is discrimination in the regular expenses against girl child's, once all the other determinants are taken care of, we would expect the dummy coefficient for sex to be significant and negative.

## II. RESULTS OF THE ANALYSIS FROM SECTION I:

After running the regression on the given data, the estimated equation is written as follows:

Equation 1:

$$IHDR_i = 1.217\Box + 51,231WAI_i - 78,132SAI_i + 3.5WPI_i - 4SPF_i + 3.836WEL_i - 4.361SEL_i$$

(0.517) (7.071<sup>\*\*\*</sup>) (-2.106<sup>\*\*</sup>) (1.289<sup>\*</sup>) (-0.0864) (2.292<sup>\*\*</sup>) (-1.174<sup>\*</sup>)

Note: Figures in the parentheses are the *T*-ratios

: \*significant at 10%, \*\*significant at 5% and \*\*\*significant at 1%.

: *F*-ratio: 1.247

The signs of the variable Women's average Income level, Women's professional and women's education level is having a positive relation with Intra-household decisions made by women in general. However, the *F*-value which equals 1.247 is insignificant. From the regression, it can be seen that, the coefficient of Women's average income level is positive and statistically significant. Hence, her employment is associated with an advantage of the impact that women can have on her family via her decision-making.

An attempt was also made to see the impact of parental altruism with regards to the intra-household decision-making with regards to Education. Here we add the variable Sex (gender of the child) to see whether there is any significant impact with regards to the same.

The following is the estimated regression for the intrahousehold decision-making with regards to the education of children:

Equation 2:

$$IHDE_i = 1.217 + 2SEX_i + 51,231WAI_i + 78,132SAI_i + 3.5WPI_i + 4SPF_i + 3.836WEL_i - 4.361SEL_i$$

(0.713) (2.135<sup>\*\*</sup>) (2.106<sup>\*\*</sup>) (1.289<sup>\*</sup>) (0.0864) (2.292<sup>\*\*</sup>) (1.387<sup>\*\*</sup>) (-1.174<sup>\*</sup>)

Note: Figures in the parentheses are the *T*-ratios. Adjusted R=0.7162

: \*significant at 10%, \*\*significant at 5% and \*\*\*significant at 1%.

From the above equation it can be seen that the inclusion of the variable Sex (gender of child) and respective education expenditure did have a significant difference to the existing regression at 5%. The signs of Sex of the child, Women's and Spouse's Income, women's education level and Profession of her spouse were highly positively correlated to education. The variables Women's Average Income, Spouse's Profession and women's education level continue to be significant at 5%, while Spouse's Education level is significant at 1%. The adjusted R is 0.7162. This implies that women continue to be the variable, which brings about a difference in the education between individuals. Due to control over resources and education level of the women, they have a larger say in the education in the child and correlates positively to the girls child's education.

Further, an attempt was made to see the impact of parental altruism with regards to the intra-household decision-making on health. In the sample the variable Sex of the child is included in the regression equation.

The following is the estimated regression for the intra-household decision-making on health

Equation 3:  $IHDH_i = 0.825 + 2SEX_i + 38147WAI_i + 98121SAI_i + 3.5WPI_i + 4.4SPF_i + 3.162WEL_i + 3.891SEL_i$

(1.709) (0.11723) (0.046) (0.2214<sup>\*\*\*</sup>) (0.0864) (2.292<sup>\*\*</sup>) (0.00979) (0.00687)

Note: Figures in the parentheses are the *T*-ratios

: \*significant at 10%, \*\*significant at 5% and \*\*\*significant at 1%.

: *F*-ratio: 13.272 significant at 1%

From the above equation it can be seen that the variable Graduation Sex, Women's Average Income level, Women's Profession, and the education level of both women and their spouse's did not make a significant difference to the existing regression results. The variable which was highly significant was the spouse's average income level while the spouse's profession was significant at 5%. Higher income level of the spouses had a significant impact in the decision-making of the health of the child. In this equation it is also evident that the parents' altruistic behavior at higher education is not skewed in favor of either the girl or the boy child. This implies that on the grounds of health decisions both the parents are altruistic irrespective of the gender of the child. Spouse's Profession has a less significant impact on the Health of the child. The Spouse's having higher income and those who were self-employed were having a slightly larger say in the health of the child.

Further, an attempt was made to see the impact of parental altruism with regards to the intra-household decision-making on Financial Planning. In the sample the variable Sex of the child is included in the regression equation

The following is the estimated regression for the intra-household decision-making on Financial Planning:

**Equation 4:**

$$IHDH_i = 1.759 + 1SEX_i + 68135WAY_i + 132500SAY_i + 2.7WPF_i - 4.7SPF_i + 3.02WEL_i + 2.125SEL_i$$

(1.992) (0.00076\*\*\*) (0.1371) (0.000716\*\*\*) (0.6348) (-0.1910\*\*\*) (0.01172) (0.1021)

Note: Figures in the parentheses are the *T*-ratios

: \*significant at 10%, \*\*significant at 5% and \*\*\*significant at 1%.

: *F*-ratio: 36.847 significant at 1%

From the above equation it is evident that the parents' altruistic behavior for Financial Planning is more skewed to favor their sons, as it could give them greater satisfaction by investing more in their sons than in daughters apart from the consideration of security in old age. The three variables that were highly significant at 1% were Sex of the child, Spouse's Average income level, and spouse's profession. Self-employed spouse's have taken more efforts to make investment in their son's financial planning than their daughter's. Though for women who are more educated and well placed in their employment there has been equal and active participation in the financial planning of both their son's and daughter's. The results are significant as *F*-value which equals 36.847 is significant at 1%.

It has been seen from the above results that women's education, Income levels and profession have been significant variables in intra-household decision making, especially for the girl child, as they are positively correlated to the expenditure made on the girl child. This implies that girls have been given equal access to higher education by their 'altruistic parents' which increases their future participation in the labour market. Gender does matter, in addition and over and above the differences that are caused by human capital variables. The empirical study also shows gender discrimination among educated households in a large metropolis like Mumbai where traditional attitudes are less apparent. Second, in spite of parity in educational and health expenditure of both the girls and boys they continue to be deprived of parental altruistic decisions in education with regards to Financial Planning. Thus, gender discrimination and patriarchy should be considered as independent and important determinants of economic outcomes over and above the usual economic variables, as they help in explaining factors such as parental decisions in education, which otherwise would go unnoticed.

This empirical study was conducted under the Minor Research Grant received from University Grants Commission. The author owes her thanks to the UGC for its timely financial assistance.

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Dr. Suchitra S Kumar. “Intra-Household Decision-Making—A Gender analysis.”IOSR Journal of Humanities and Social Science (IOSR-JHSS). vol. 24 no. 1, 2019, pp. 12-18.