

**Household Matters: On the  
Usefulness of an Institutional  
Approach for Understanding  
Intrahousehold Allocation**

Nathalie Holvoet



Instituut voor Ontwikkelingsbeleid en -Beheer  
Institute of Development Policy and Management  
Institut de Politique et de Gestion du Développement  
Instituto de Política y Gestión del Desarrollo

Middelheimlaan 1 - Villa C, B-2020 Antwerpen  
België - Belgium - Belgique - Belgica

Tel: +32 (0)3 218 06 60  
Fax: +32 (0)3 218 06 50  
e-mail: [dev@ua.ac.be](mailto:dev@ua.ac.be)

<http://www.ua.ac.be/dev>

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Intrahousehold Allocation<sup>1</sup>**

Nathalie Holvoet<sup>1</sup>

**Institute of Development Policy and Management**  
University of Antwerp

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<sup>1</sup> About the author



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## **Abstract:**

This paper presents findings from a study testing the alternative of an institutional approach to model intrahousehold allocative behavior. It argues that the income-pooling test and the conventional neoclassical household models only capture part of allocative behavior as they start from the premise that human behavior is built upon free human agency only. The paper proposes an alternative economic institutional approach and sets out an expanded test framework. Research findings from my own south Indian household survey show that conventional and expanded test results may differ and that unveiling decision-making processes may indicate why individuals act as if they hold common preferences. The article demonstrates that changes in selected allocative outcomes only occur as a result of changes in underlying allocative processes. It further suggests that membership of women's groups is one effective way of changing intrahousehold decision-making processes and outcomes.

## Résumé

Cet article présente les résultats d'une étude qui teste la valeur ajoutée d'une approche institutionnelle pour modeler l'allocation et l'interaction au sein du ménage. Les modèles néoclassiques et le test conventionnel sont critiqués pour leur incapacité de visualiser l'entièreté de l'interaction familiale. Une approche économique institutionnelle et un test alternatif sont présentés. Les constatations de l'étude de cas en Inde du Sud montrent que les résultats du test conventionnel et alternatif peuvent différer. En plus, les données indiquent que des changements dans l'allocation peuvent seulement être réalisés suite aux modifications dans les processus de décision. Etre membre de groupements de femmes est une manière efficace de changer les règles de décision. This paper presents findings from a study testing the alternative of an institutional approach to model intrahousehold allocative behavior. It argues that the income-pooling test and the conventional neoclassical household models only capture part of allocative behavior as they start from the premise that human behavior is built upon free human agency only. The paper proposes an alternative economic institutional approach and sets out an expanded test framework. Research findings from my own south Indian household survey show that conventional and expanded test results may differ and that unveiling decision-making processes may indicate why individuals act as if they hold common preferences. The article demonstrates that changes in selected allocative outcomes only occur as a result of changes in underlying allocative processes. It further suggests that membership of women's groups is one effective way of changing intrahousehold decision-making processes and outcomes.





## 1. Introduction

International development organizations such as the United Nations Development Programme and the World Bank increasingly acknowledge that systematic discrimination of half of the world's population is one of the most important obstacles impeding economic growth and economic and human development (UNDP, 1995; World Bank, 2001). One of the crucial ingredients towards the achievement of these goals is the investment made in the next generation's human capital. While a nation's human capital efficiency influences the level and quality of investments, it is mainly within the household that the latter is decided upon. Furthermore, there is mounting evidence that investments made within the household may not be harmonious with government investments. In their 1992 Filipino research, Marito Garcia and Ben Senauer found for instance that supplementary feeding programs which target vulnerable individuals within the households, mostly girls of a higher birth order, resulted in failure because households were reallocating nutritional inputs which had been given earlier to the targeted individuals in order to compensate for the additional food these household members received through the feeding program.

Policy makers clearly need insights into what happens within the black box of the household in order to design thoughtful policy measures. If it is for instance the aim to increase investments in children's human capital and to attenuate male bias in allocation, they need to know which factors to influence in order to make policy interventions effective and efficient.

Exploring questions regarding household allocative behavior brings us within the realm of household economic models. The silence of neoclassical economics on matters related to intrahousehold allocation has lately been compensated by a rapidly expanding literature<sup>1</sup>. Despite the fact that neither approach may be considered a homogeneous block, most authors distinguish between unitary and collective preference models. In a first section of the paper I summarize the main characteristics of both groups of models and their policy implications.

The starting point of the present article is the income-pooling test, which is one of the tests used to distinguish empirically between both groups of models. I argue that the latter test leads to erroneous conclusions when allocative behavior is strongly influenced by norms. The criticism does not only affect the conventional test but also points to the limitations of both groups of conventional neoclassical approaches. The article proposes an economic institutional framework based on earlier contributions from feminist economists and critical institutional economists.

Testing the value added of the alternative institutional approach is done through the broadening of the conventional test. Firstly, rather than focusing exclusively on allocative outcomes, the expanded test also highlights under-

<sup>1</sup> Articles and books, which give a global or partial review of existing theories, include among others Beatrice L. Rogers and Nina P. Schlossman (1990); Lundberg and Pollak (1994); Folbre (1996); Alderman, Haddad and Hoddinott (1997); Cheryl R. Doss (1997).

lying decision-making processes. Secondly, the assessment of the impact of non-wage-income, which is at the core of the conventional test, is expanded towards the study of the impact of collective action, which is one of the instruments of institutional change.

Empirical testing was done on the basis of my own survey of 300 households in Tamil Nadu. In these households, living in the same area and belonging to the same socio-economic strata, credit entered in different ways, which allowed constructing a quasi-experimental research setting. More specifically, I compared the impact of direct credit to men and women (conventional test) with the impact of credit to men and credit to women who received credit through the financial and social intermediary of women's groups (expanded test). The research findings demonstrate that different tests lead to different conclusions regarding the appropriate model and the policy measures to be adopted. Unveiling allocative processes further reveals that the impact of women's group membership on allocative outcomes only occurred as a result of changes produced at the level of underlying allocative rules. Research findings indicate that women's groups, as actors of institutional change, were able to broaden the bargaining area within household decision-making which subsequently led to changes in children's and in particular girls' health care investments.

## **2. Conventional Neoclassical Economic Household Models and an Alternative Economic Institutional Approach**

### **2.1. Conventional neoclassical economic household models and testing between them.**

Unitary approaches consider the household as a socio-economic unit where different members pool their resources and redistribute them optimally following incentives from the outside world. The household utility function is considered to be equal to a one-person utility function<sup>2</sup>. Intra-household allocative outcomes are arrived at through the maximization of the one-person utility function subject to a general budget and time constraint. Factors which influence the allocation of resources, are total income, prices of different goods and personal endowments, the latter being exogenously given.

<sup>2</sup> Approaches within this strand, e.g. the consensus model of Paul Samuelson (1956) and the household model of Gary S. Becker (1981), differ in the way they equalize the household utility function with a one-person utility function.

The unitary approach is appealing because of its relative simplicity and the multiplicity of issues it can address. Moreover, it is not inconsistent with differences in individual welfare within the household, even when these differences are systematic along lines of sex and age. What may not be explained by a unitary approach, however, is the substantial evidence that has been gathered from diverse cultural settings on the existence of diverging preferences exhibited by mothers and fathers. Different studies lend support to the idea that mothers, as compared to fathers, prefer to allocate a higher percentage

of the household budget towards human capital goods, especially those of children (Joan P. Mencher, 1988; Eileen Kennedy and Pauline Peeters, 1992; Duncan Thomas, 1997 ; Shelly A. Phipps and Peter S. Burton, 1998). Based on survey data from Brazil, Duncan Thomas (1994) further found evidence of the phenomenon of 'gendered preferences', with mothers preferring to devote more resources to improve their daughters' nutritional status and schooling, while fathers preferred to invest in sons' health and education.

Efforts to explain this inconsistency bring the collective preference models into the picture. They consider the household as a locus of both conflict and cooperation. Partners are conscious of the fact that through cooperation their overall well-being might increase, but they do not necessarily agree on the division of the gains. The possibility of diverging preferences is explicitly pictured through the inclusion of different individual utility functions within the household utility function. How resources are finally allocated and which influencing factors are important, is dependent on the particular collective preference model adopted. The best-known collective preference models are the bargaining models<sup>3</sup>. In the latter, "threat points", i.e. the utility a person may arrive at in case of non-cooperation, play a crucial role in the determination of the final outcome<sup>4</sup>.

The debate among adherents of unitary and collective preference models is not merely of academic importance. Sharply different policy implications derive from both groups of models. The discussion about the effectiveness and efficiency of targeting interventions to individual household members is strongly influenced by the insights from intrahousehold interaction modeling. Proponents of a unitary approach consider targeting a useless and probably costly operation. For them the only way in which allocation outcomes may be changed, certainly in the short run, is through conventional price and income policy. Conversely, advocates of collective preference models conclude that targeting individual members in the household is necessary if particular allocative outcomes are to be obtained.

In order to distinguish empirically between the different models, several tests have been elaborated. Differentiating between the collective and unitary models has mostly been done by comparing the marginal impact of additional resources alternately controlled by men and women on specific intrahousehold resource allocation outcomes. While most authors did use a form of non-wage income for testing (see e.g. Thomas, 1990, 1994, 1997; Paul T. Schultz, 1990), others have focused on the impact of labor income (see e.g. François Bourguignon, Martin Browning, Pierre-André Chiappori and Valerie Lechene, 1994), assets brought to marriage (see e.g. Agnes Quisumbing and John Maluccio, 1999) or microcredit (see e.g. Mark M. Pitt and Shahidur R. Khandker, 1998).

<sup>3</sup> Bargaining models may be further classified into 'cooperative' and 'non-cooperative' on the basis of the acceptance of the assumption of binding and enforceable agreements and Pareto-efficient outcomes.

<sup>4</sup> Whether threat points are thought of as the utility function in case of divorce (outside threat point) or rather as a non-cooperative equilibrium within the household (inside threat point) further differentiates bargaining models from each other. While earlier versions of bargaining models (see a.o. Marilyn Manser and Murray Brown, 1980; Marjorie B. Mc Elroy and Mary Jean Horney, 1981) have mostly assumed an outside threat point, more recent contributions as the "Separate Spheres Bargaining Model" of Lundberg and Pollak (1992) and the "Conjugal Contract Model" of Michael R. Carter and Elizabeth G. Katz (1997) opt for a more realistic inside threat point.

## 2.2. Criticism on the income-pooling test and both groups of conventional neoclassical economic approaches

The most frequently cited problems with the income-pooling test relate to the degree of exogeneity of the measure of income used and the degree of control that each partner has over this income<sup>5</sup>. As Harold Alderman, Lawrence Haddad and John Hoddinott (1997) point out, most of these problems may be countered through the particular form of income chosen, or through specific research design and statistical controls at the moment of data analysis. However, I believe that a more crucial drawback flaws the income-pooling test.

The test relies on observed allocative outcomes to make inferences about the household members' preferences and decision-making processes. Limiting information to observed allocative outcomes might be an efficient strategy in a lot of cases. However it may lead to erroneous conclusions about allocative behavior if decisions are the outcome of norm following. It is highly unlikely that influencing the bargaining power of one of the partners will lead to changes in outcomes in cases where bargaining is not perceived by them to be a legitimate undertaking. In such cases the conventional test suggests that a unitary approach is valid and policy makers will rely on the corresponding basket of policy levers to influence the household's behavior. However, it is as unlikely that decisions based on norms will be influenced by price incentives, which also puts the unitary approach into perspective. Focusing merely on intrahousehold allocative outcomes while leaving the processes unveiled may thus lead to erroneous conclusions and potentially powerful policy levers may be disregarded. Insight into processes might enable us to understand why and for which particular items individuals act as if they hold common preferences and it might help us to formulate policy interventions which do not only change outcomes but also the allocative rules on which the outcomes are based.

On the basis of the foregoing analysis I question the ability of conventional approaches to grasp that part of household allocative behavior where individual agency is absent. For they all focus on that part of household reality where the legitimacy to bargain is already established, leaving other parts, not necessarily the least important ones, unveiled. As against this, I consider human behavior the result of individual agency, norm adoption and the interaction among them. I do not deny the importance of bargaining. I rather support Shelly Lundberg and Robert A. Pollak (1996) in their idea that an important part of bargaining takes place at a higher level where it is decided on which issues bargaining is legitimate and on which issues norms should be followed. To substantiate this, I turn to an economic institutional approach.

<sup>5</sup> Sen (1983) puts this element of criticism into perspective. He points at the fact that even in case a person does not fully control her/his income it may still produce a rise in her/his threat point due to the fact that it increases her/his "perceived" contribution, one of the elements of the "break-down points" as defined by Sen.

### 2.3. The alternative of an economic institutional approach

Putting the household within the context of an institutional analysis enables us to understand its origin and the causes of variation throughout time and space. Building on insights from the transaction cost literature (Oliver E. Williamson, 1985), the household may be conceptualized as an institutional arrangement, which has a comparative advantage in governing efficiently relational contracts among individuals<sup>6</sup> (see e.g. Yoram Ben-Porath, 1980).

Typical of relational contracts is their highly transaction-specific character and the lesser degree of standardization which leaves considerable room for influence from the state, the religion, culture (Robert A. Pollak, 1985). Inducing cooperation and regulating conflicts among different members is essentially done on the basis of two mechanisms, i.e., “shared norms and ideologies” and “hierarchy”. Some of the most entrenched norms and ideologies defining the realm of choice and regulating intrahousehold behavior are related to gender. Division of labor based on gender whereby each partner specializes in a number of particular tasks, is a powerful mechanism through which costs of coordination are diminished and through which gains of the household as a governance structure may be realized. The particular nature of social constructs such as gender also facilitates their enforcement. As the community wherein one resides shares them, disobedience leads to disapproval and in a number of cases even to expulsion from the community. As argued by Jon Elster (1989), where norms are strongly internalized, external sanctions are less needed as deviation triggers the powerful internal cost of shame.

Once gains from cooperation within a particular institution have been realized, they should also be redistributed. While the economizing function of institutions has been emphasized most in the explanation of the origin of institutions, history has proved that it is not always the primary motive for the establishment or the survival of a particular institutional arrangement (Margaret Levi, 1990; Justin Yifu Lin and Jeffrey Nugent, 1995). As Nancy Folbre (1994) argues, institutions and norms, such as gender, which regulate conflict between social groups, offer opportunities for “collective rent-seeking”. By constraining behavior and making it highly predictable, gender is clearly functional in facilitating human interaction. If however some groups are more constrained in their behavior than others and if the latter are able to impose their choices on the former, “the structures of constraint” become exploitive and even inefficient as they systematically hamper competition.

The New Institutional Economics (NIE) would not worry so much about such inequitable and inefficient situations as they are fairly optimistic about the possibility of institutional change. If individuals believe that alternative institutional arrangements are more efficient and if net benefits of the alternative governance structure outweigh the costs of institutional change, NIE is confident that a new institutional form will evolve. More critical insti-

<sup>6</sup> In rural communities, which are often characterized by highly imperfect or even absent markets and high transaction costs in exchange, also more non-transaction-specific contracts such as production, consumption, insurance are governed within the household or within families.

tutional economics and feminist economists<sup>7</sup> are clearly more skeptical about the possibility of institutional change.

<sup>7</sup> See among others Edna Ullman-Margalit (1977); Elaine McCrate (1987); Pranab Bardhan (1989); Levi (1990); Folbre (1994); Janet Seiz (1995).

Yet, notwithstanding all possible constraints on institutional change, historical evidence suggests that individuals are able to modify and defy norms and rules, especially when acting as a group. In the realm of gender, men and especially women were able to question, over the last century, the traditional gender roles that constrained their behavior and even to adopt, within limits, what society considered to be deviant behavior.

One powerful way in which relevant norms and the institutions that rely on them may be changed is through collective action. Based on research findings from among others Bina Agarwal (1994) and Naila Kabeer (1995), I consider women's groups as a powerful instrument to weaken the application of traditional gender norms and to enlarge the domain of free individual choice in household interactions. Often originally organized around the fulfillment of practical gender needs, women's groups may start engaging in extrahousehold bargaining with the community in order to make it legitimate to bargain within the household on issues which were before residing in the "non-choice" domain (Agarwal, 1997). Shifting issues into "the choice" area, broadening in this way the scope of household decisions open to individual agency, may, in many cases, be considered a necessary precondition for the effectiveness of more conventional policy incentives which are adopted to influence allocative behavior within the household. Starting from literature on collective action and building further on research findings from Agarwal (1994, 1997) and Kabeer (1995) I have tested the impact of collective action through women's groups on intrahousehold allocative behavior within a south Indian context.

#### **2.4. An expanded test framework**

Interestingly women's groups included in the field study were originally organized around credit and the local variety in credit models enabled to draw a linkage to the conventional income-pooling test. More specifically, households below the poverty line living in the area mainly received credit in three different ways: direct credit to men, direct credit to women and credit to women through the financial and social intermediary of women's groups.

Comparing the impact of credit targeted directly to men and women on selected intrahousehold allocative outcomes exemplifies conventional testing. Putting the results of the latter test against those which arise from a comparison of the effects of credit to men and credit to women through women's groups sheds light on the shortcomings of the conventional test. Broadening the information base to underlying decision-making processes highlights linkages among allocative outcomes and underlying rules which is useful in understanding why the conventional test may lead to erroneous conclusions.



### 3. Empirical Testing

#### 3.1. Methodology, Research Setting and Data

##### *i. Selection of Credit Programs*

The most serious drawback of using credit as an instrument for testing arises from the potential selectivity bias that might occur when assessing the impact of different credit schemes. The point is often made that different credit schemes recruit or attract different individuals. Members of women's groups are for instance thought to be those women who already had a higher stake in household decision-making at the outset, eventually explaining a women's group observed impact on intrahousehold allocative behavior.

As to circumvent potential threats to the validity of research results, I opted for a quasi-experimental cross-sectional research design that influenced the selection of the different credit programs, the research setting and the study population.

I selected credit programs that were highly similar in outlook except for the borrower's gender and the delivery model. The Integrated Rural Development Programme (IRDP) is a poverty alleviation program launched throughout India in 1978, which is directly targeting credit for productive use to men and women below the poverty line<sup>8</sup>. Although the IRDP guidelines point at the importance of the follow-up and training of beneficiaries, different studies (see a.o. World Bank, 1991; Raghav Gaiha, Katsushi Imai and P.D. Kaushik, 2001) have highlighted the inadequate supervision, which reduces the IRDP to a one-time dose of credit. The IFAD-funded Tamil Nadu Women's Development Programme (TNWDP) has been conceptualized together with local non-governmental organizations (NGOs) to remedy IRDP deficiencies in the selection, monitoring and enforcement process. It is operational in the southern state of Tamil Nadu since 1990, targets households with a similar socio-economic profile and uses similar financial conditions regarding interest rates, subsidies, loan repayment period and loan use requirements. The main innovative element within the TNWDP is the focus on women's groups, often called Self Help Groups, to channel individual IRDP loans, enterprise development training and social welfare services to group members. Within the selected research area of the Dharmapuri District, two NGOs, the Mysore Resettlement and Development Agency (Myrada) and the Rural Integrated Development Organization (Rido), have been operational in backing up women's groups. The main difference between the two NGOs is the more developed organizational and management structure of Myrada, explaining why it has been able to organize more training sessions, diversify its training content and supervise group formation and maturing more closely.

In order to test whether longer group membership had additional effects on decision-making patterns, thereby also dealing with a possible selec-

<sup>8</sup> In 1989, household below poverty line were identified as those whose annual household income was below 6 400 Rs., from 1996 onwards the cut-off point was set at 11 000 Rs.

tion bias, I included a membership duration variable. The highest variability in membership duration was found in the Dharmapuri District as it was the region where the TNWDP was first implemented and where groups were formed from 1990 until 1994.

Based on all these characteristics, I identified the following five credit program variables: i) direct credit to men through IRDP extended in 1993-4 (Male IRDP); ii) direct credit to women extended in 1993-4 (Female IRDP); iii) credit to women member of Myrada groups since 1993-4 (Myrada Young); iv) credit channeled in 1990-1 to women member of Myrada groups since 1990-1 (Myrada Old), v) credit channeled in 1990-1 to women member of Rido organized groups (Rido Old). Comparing the impact of the first and second credit scheme exemplifies the conventional test while a comparison of the impact of the first and third independent variable is illustrative of the expanded test<sup>9</sup>.

## *ii. Research Setting*

As the limitation of the sample size, imposed by time and resource constraints, posed a threat to statistical conclusion validity, I further standardized as much as possible between and within each of the credit schemes. One particular area within the Dharmapuri District, i.e. Morappur Block, was selected where IRDP and TNWDP loans are extended through three bank branches of the Indian Bank which use the same standard regulations and which are partly staffed by the same persons.

The research area is an exclusive agricultural area where about 42 percent of the population was identified as below the poverty line in 1991 and where Tamil is the dominant language. While south India is characterized by the Dravidian culture, which in general poses less severe restrictions on girls' and women's behavior than the Aryan culture of northern India<sup>10</sup>, any such appreciation should be put against the general background of female discrimination. Data from the National Information Center (NIC) of Dharmapuri shows that even in Tamil Nadu less human capital goods are invested in girls, which result in female/male sex ratios and literacy rates standing below unity. In Morappur Block, for instance, the female/male literacy rate stood at about 60 percent in 1991 and 74 percent in 1996 while sex ratios even declined from 971 per 1,000 men in 1981 to 935 in 1991 and 926 in 1996.

## *iii. Study Population and Sample*

The number of IRDP beneficiaries in the research area total 600 per year, 30 percent of which are women. For the period 1990-1, 497 women received a loan under the TNWDP in the Morappur Block. Of the 497 about 397 belonged to Myrada groups and 100 to Rido groups. In the period 1993-4, 247 women benefited from a loan, of these beneficiaries about 200 were affiliated with Myrada groups. From each of the five groups I randomly selected a

<sup>9</sup> For an overview of all test results, see Nathalie Holvoet (1999).

<sup>10</sup> While there is no agreement on the definition of "the north" and "the east", most researchers agree on the demarcation of "the south". Included are the states of Karnataka, Andhra Pradesh, Kerala and Tamil Nadu. On difference in women's status and female autonomy between northern and southern Indian states and underlying economic, cultural and religious rationale, see e.g. Agarwal (1994) and Partha Dasgupta (1995).



sample of fifty households. In order to avoid diffusion effects I have selected IRDP beneficiaries and control group households in villages where women's groups were not operational. With a view to gauging the net impact of a particular credit scheme and to accommodate for the selection bias that might differentiate all credit receivers from non-credit receivers, a control group of fifty households was selected at random from the 7,500 households who were identified as below poverty line on the basis of the survey of the District Rural Development Agency (DRDA). Within the 300 households, 1,026 births were reported of which 560 boys and 466 girls.

Table 1, which gives an overview of sampling details and scores on a number of selected background characteristics using retrospective data, illustrates that at the moment of credit receipt different sub-samples did not differ substantially from each other. Most of the households belonged to backward-casts, were landless or owned a small piece of land. The majority of the women and about fifty percent of their husbands could neither read nor write.

As this article mainly focuses on comparing i) IRDP Female versus IRDP Male beneficiaries and ii) TNWDP Young versus IRDP Male beneficiaries, we have tested formally for statistically significant differences between those groups. Results of t-tests<sup>11</sup> show that on average IRDP Female beneficiaries were more likely to belong to landless households while they at the same time had a higher chance of earning an independent income. Interviews with local keypersons have pointed out that the access to an independent income could be indicative of a lower gender norm application in general within those households. The same inverse relationship between socio-economic status and gender norm application is also visible when comparing IRDP with TNWDP Young beneficiaries. The latter were on average more likely to belong to households that owned land, which may be exemplary of their slightly higher socio-economic status, while at the same time they were less likely to have access to an independent income. Revealing an inverse relationship between the position of a woman within and outside the household is not new. Earlier studies (see e.g. Meena Acharya and Lynn Bennett, 1982; Agarwal, 1994) have described the same phenomenon. If anything, the data does not support the assertion that TNWDP Young beneficiaries tended to be the initially more empowered, on the contrary. It was rather the IRDP Female beneficiaries who belonged to households that applied gender norms less strictly. As this might even explain why those women (and not their husbands) did obtain the credit in the first place, a selection effect could be playing. As to avoid contamination in impact measurement, we will control for statistically significant differences in background characteristics in the outcome equations.

<sup>11</sup> Table 1 includes t-values and significance levels for those variables where the null-hypothesis of 'no difference' was rejected.

**Table 1: Sampling information and scores on selected background characteristics (initial status)**

	IRD Male	IRD Female	TNWDP Myrada Young	TNWDP Myrada Old	TNWDP Rido Old	Control Group
<b>Sampling Details</b>						
Number of households	50	50	50	50	50	50
Number of children born						
.girls	74	65	92	88	70	77
.boys	97	97	95	101	88	82
<b>Background characteristics</b>						
Caste						
% most backward	92	82	94	87	84	84
% scheduled	8	18	6	13	16	16
Landownership <sup>a</sup>						
% yes	56	45	65	58	62	46
% no	44	55	35	42	38	54
Mean quantity of land owned (in acres)	2.12 (1.6)	1.91 (2.1)	1.98 (1)	1.75 (1.2)	1.83 (1.12)	1.97 (1.5)
Mean age of female respondents (years)	33 (10.8)	36 (9.5)	36 (8.3)	38 (8.9)	37 (7.5)	33 (10.1)
Literacy status of female respondent <sup>b</sup>						
% yes	30	12	12	20	30	29
% no	70	88	88	80	70	71
Literacy status of husband						
% yes	65	56	55	54	50	54
% no	35	44	45	46	50	46
Independent income earned by female respondent <sup>c</sup>						
% yes	38	44	32	36	36	38
% no	62	56	68	64	64	62

Note: Figures in parentheses are standard deviations

- (a) difference between IRDP Female and IRDP Male (base category) is statistically significant at 10% level (t-value: 1.876); difference between TNWDP Young and IRDP Male is statistically significant at 10% level (t-value: 1.759)  
 (b) difference between IRDP Female and IRDP Male is statistically significant at 1% level (t-value: 3.486); difference between TNWDP Young and IRDP Male is statistically significant at 1% level (t-value: 3.492)  
 (c) difference between IRDP Female and IRDP Male is statistically significant at 5% level (t-value: 2.245)

#### iv. *Dependent Variables*

The dependent variables are regrouped under two main headings, i.e. allocative processes and allocative outcomes. Most empirical research about decision-making processes is somehow based on the influential work of Robert O. Jr. Blood and Donald M. Wolfe (1960) but so far no straightforward measures have been developed<sup>12</sup>. As decision-making patterns tend to differ alongside the issues to be decided upon, I opted to study different fields of decision-making separately rather than adding them up into one indicator (see also Susan P. Douglas and Yoram Wind, 1978). I further followed the suggestion of Acharya and Bennett who in their 1982 study of decision-making processes in Nepal, asked questions about easily defined past decisions rather than questioning behavior in too general terms, which helped to reduce social desirable answering and hypothesis-guessing. “Decision-making mechanism” was finally constructed as a categorical variable with seven answering categories, i.e. “the wife (female decision-making)”, “the husband (male decision-making)”, “others”, “norm following”, “jointly with equal influence”, “jointly with more influence for the wife”, “jointly with more influence for the husband”. At the moment of the analysis the last three categories were pulled

<sup>12</sup> A number of empirical studies on “decision-making”, “marital power” and “women’s status and empowerment” were reviewed. See among others Acharya and Bennett (1982); Benjamin White (1984); Frances Woolley and Judith Marshall (1995) on “decision-making”; Graig M. Allen and Murray A. Straus (1984); George H. Conklin (1988); Karen D. Pyke (1994); Constantina Safilios-Rothschild (1970) on “marital power” and Syed M. Hashemi and Sidney R. Schuler (1993); Carol Vlassoff (1994) on “women’s status and empowerment”.

together into one category “jointly (bargaining)” whereas the minor category “others” was joined with “norm following”.

Children’s health and education were chosen as the allocative outcomes under study. In the present article, the analysis is limited to girls’ and boys’ health input indicators. The choice for particular indicators has been guided by secondary literature<sup>13</sup>, by the gaps in existing research and the financial and time constraints of my own research. The focus of existing research has mainly been on food and nutrient intake, whereas considerably less attention has been paid to non-food health inputs as health care (Lawrence Haddad, Christina Pena, Chizuru Nishida, Agnes Quisumbing and Alison Slack, 1996). I have opted to study the incidence of medical treatment in case of illness and the incidence of paid medical treatment by a private doctor (versus free medical treatment in a public health care center). The latter was considered an indicator of the quality of medical care<sup>14</sup> while it also indicated to what extent parents were willing to invest money alongside time in the health of their children.

#### v. *Data Collection and Analysis*

The data was gathered late 1997 through a structured survey with female interviewees. In the 200 households where the wife was the beneficiary she herself was interviewed, in the fifty households with male beneficiaries their wives were interviewed. In control group households, the wife of the household head or the female household head was interviewed. Apart from the face-to-face interviews, which were taken from each of the women separately, I also conducted semi-structured interviews with twenty-one women’s groups and informal interviews with key non-sample informants. Self-reported information regarding children’s health care inputs was supplemented by data obtained from local public health care centers and private doctors. Relevant secondary literature and participant observation<sup>15</sup> were useful in interpreting the survey research findings.

Assessing the impact of credit programs on children’s health care inputs was done through logistic regression models. I tested for the differential impact of credit programs through the calculation of the odds ratios that summarize in a single statistic the effect of one credit program versus another. Wald statistics were used to indicate whether differences in impact were statistically significant<sup>16</sup>. Table 2 summarizes odds ratios obtained and indicates significance levels for those cases where the null-hypothesis of equality of effects was rejected. Regression results in table 2 further give an account of the differential impact of credit programs on the prevalence of different decision-making mechanisms. Odds ratios using norm following as the base-category were calculated on the basis of loglinear logit models and rejection of null-hypotheses was assessed on the basis of Wald statistics.

<sup>13</sup> See among others Chen, Huq and D’Souza (1981); Caldwell, Reddy and Caldwell (1983); Basu (1989); Barbara Harriss-White (1990); Dasgupta (1995).

<sup>14</sup> On the basis of several visits to both primary health care centers and private doctors, I concluded that there was a considerable difference in the quality of health care offered, which was partly due to different hygienic conditions. More important, however, was the attitude of the doctors. Most of the doctors at the public centers had at the same time their own private practice in the same village, which strongly influenced their work attitude. They often did not show up during opening hours, they did not deliver a number of medical services and recommended people to visit them instead at their own practice where medical care needed to be paid for.

<sup>15</sup> During the period of data collection (July 1997 till the end of November 1997) I lived in Kadattur, one of the villages of the Morappur Block. In order not to influence research results, none of the women living in the village was included within the sample. Participant observation within the village nevertheless helped the interpretation of the empirical findings.

<sup>16</sup> As multiple comparisons were performed, the Bonferroni technique was used to adjust for the inflation in the type I-error.

Regression results summarized in Table 3 demonstrate whether and to what extent the impact of credit programs on health inputs was produced through changes in underlying allocative processes. Adding the variable “decision-making mechanism” to the first model specifications yielded the results given in the second model specifications. They illustrate the remaining impact of credit program variables while the Step Chi-Square tests show their additional explanatory power.

### **3.2. Research findings and discussion**

#### *i. Conventional test results versus expanded test results*

Results of the statistical analysis summarized in Table 2 suggest that IRDP credit in hands of mothers and fathers does not produce any statistically significant differential effects. While boys, but especially girls seem to fare better when their mother receives credit (odds ratios IRDP Female/IRDP Male are all above unity), none of the recorded differences prove to be substantial enough to reject the unitary approach hypothesis.

Calculation of estimated probabilities indicates that in general the data lends support to evidence from earlier studies which have shown that when they are ill girls tend to receive less and worse medical treatment than their brothers (Alake Malwade Basu, 1989; John C. Caldwell, P.H. Reddy and Pat Caldwell, 1982; Lincoln Chen and Stan D’Souza, 1980; Lincoln Chen, Emdadul Huq and Stan D’Souza, 1981; Monica Das Gupta, 1987). The pattern slightly differs between IRDP Male and Female households. Extending IRDP loans to mothers tends to weaken the existing male bias more, but differences are too small to be significant. Illnesses of boys and girls in IRDP Male households have a 68 percent and 47.2 percent chance respectively of being treated, while in IRDP Female households probabilities stand at 69.9 percent and 51.8 percent. While the male bias regarding the treatment of illnesses is rather modest, it substantially increases when it comes to the kind of medical care sought. Boys in IRDP Male and IRDP Female households have respectively a 73.3 percent and 67.6 percent probability of being treated by a private doctor, these percentages decline to 38.2 and 41.1 in case of girls.

While some minor differences in effects are recorded when comparing impact of IRDP credit in hands of mothers and fathers, the unitary approach cannot be rejected. The conventional test results suggest that targeting of credit to women does not really pay off.

**Table 2: Overview of results of the conventional and expanded test**

Dependent Variables	Unitary Approach Restriction			
	I. Conventional Test (H <sub>0</sub> : IRDP Female= IRDP Male)		II. Expanded Test (H <sub>0</sub> : TNWDP Myrada Young= IRDP Male)	
	Failure to reject Odds Ratios	Rejection Odds Ratios	Failure to reject Odds Ratios	Rejection Odds Ratios
<b>1. Incidence of medical treatment in case of illness (N=917)</b>				
Allocative Outcomes				
all children	1.157			2.158*
boys	1.087		1.266	
girls	1.202			3.873**
Decision-Making Mechanism				
female decision-making/norm following	1.119			5.639**
male decision-making/norm following	1.446		0.464	
bargaining/norm following	0.963		0.780	
<b>2. Incidence of private medical treatment (N=629)</b>				
Allocative Outcomes				
all children	0.884		1.666	
boys	0.759		1.054	
girls	1.130			3.804*
Decision-Making Mechanism				
female decision-making/norm following	0.803			17.616**
male decision-making/norm following	0.814		1.689	
bargaining/norm following	1.691		5.369	

\* significance at 5% \*\* significance at 1%

Broadening the test to the impact of credit delivered through women's groups reverses the conclusions. While it does not seem to matter much for sons how credit enters the household, it clearly is important for daughters. Test results summarized in Table 2 suggest that the unitary approach restriction should be rejected for all children in case of the incidence of medical treatment, and for girls in case of both variables. Compared to children living in IRDP Male households, children whose mother received credit through Myrada Young women's groups have about 2.2 times more chance of being treated when ill rather than being left without treatment. For girls, this ratio even increases to 3.9. As regards the kind of medical treatment sought differential effects of women's group membership are more modest: only for daughters can the unitary approach be rejected. Girls whose mother is a member of a women's group are 3.8 times more likely to receive private medical care than their counterparts in IRDP Male households. Women's group membership clearly has a more outspoken beneficial effect on daughters than on sons. Calculated probabilities even point at a reversal of the male bias in case of the incidence of medical treatment, while the existing pattern of female discrimination remains regarding the kind of medical treatment sought. Probabilities of being treated upon illness stand at respectively 72.9 percent and 77.6 percent for boys and girls, while the probabilities of being brought to a private doctor stand at 74.3 percent and 70.1 percent respectively for boys and girls.

Expanding the test has in a number of cases led to the rejection of the unitary approach restriction and to other policy conclusions. Where the conventional test would have led to the conclusion that targeting to particular individuals did not have any results, the expanded test shows that this con-

clusion must be qualified. Research findings show that targeting of credit in combination with women's group membership has been effective in provoking changes in children's and especially girls' health care investments.

Broadening the analysis to decision-making processes shows that direct channeling of credit to mothers and fathers did not produce any substantial differential effects on allocative processes taking place within the household. This conclusion is put into perspective when expanding the test towards the TNWDP. Compared to spouses of IRDP male beneficiaries, it is about 5.6 times more likely that women who received credit through Myrada Young Groups decide alone about the incidence of medical treatment than that they follow norms. The latter odds ratio even increases to 17.6 for decision-making regarding the kind of medical treatment sought for.

*ii. Linkages between allocative processes and outcomes*

Comparing the results of testing for outcomes and decision-making processes reveals that in neither of the cases substantial changes were produced in the former without similar changes in the latter. Results of statistical analysis summarized in Table 3 support this conclusion and demonstrate that the impact of the TNWDP on allocative outcomes may be exclusively attributed to shifts in the underlying allocative rules. Adding the variable "decision-making mechanism" leads to a significant increase in the explanatory power of the models (Chi-square of the additional block is respectively 26.2, 3 df,  $p < 0.001$  and 34.9, 3 df,  $p < 0.001$ ) and washes out the previously recorded statistically significant impact of the TNWDP. Without shifts in decision-making patterns, which were provoked by women's group membership, no significant effects on the allocative outcomes would have been recorded.

The introduction of the "decision-making mechanism" in the logistic regression models further allows focusing on the linkage between different decision-making mechanisms and the allocative outcomes produced. A shift away from norm adoption or decision-making by other members of the household clearly leads to a significantly higher investment in boys' and girls' health care. Arriving at decisions through bargaining and female decision-making causes the most striking effects. Compared to their counterparts whose parents adopt norms or who leave decisions up to others, illnesses of boys and girls whose mothers take decisions alone are, for instance, about 5.4 and 46.43 ( $= e^{(1.689+2.149)}$ ) times more likely to be treated.

The interaction effect of "decision-making mechanism" and "sex of the child" shows that different decision-making mechanisms affect boys and girls differently. While norm adoption unexceptionally leads to a serious male bias, research findings suggest that bargaining and in particular female decision-making predominantly benefit girls, even to the extent of the male bias being reversed into a preferential treatment of girls. Whereas adopting local norms makes it about 8.4 ( $= 1/0.119$ ) times more likely that boys rather



than girls will be brought to a private rather than a government doctor, using other decision-making mechanisms attenuates the sex-differential pattern of investment. Despite the closing of the gap, fathers deciding alone still exhibit a strong preference for spending money primarily for the treatment of their sons' illnesses. Sons, as compared to daughters, are about 2.2 ( $1/0.453$ ,  $0.453 = e^{(-2.126+1.334)}$ ) times more likely to receive higher quality treatment. When decisions are arrived at together and especially when mothers decide alone, the effect on girls is significantly higher than the one produced on boys: it is about 2.15 ( $= e^{(-2.126+2.891)}$ ) times and 5.24 ( $= e^{(-2.126+3.782)}$ ) times more likely that higher quality medical care is sought for daughters rather than for sons. The latter observations lend support to evidence from other studies (Thomas, 1994; Thomas, 1997) about the existence of "gendered preferences" with mothers preferring to invest more in daughters and fathers in sons.

**Table 3: Logistic Regression Models: Effects of Different Credit Programs and Different Decision-Making Mechanisms on the 'Incidence of Medical Treatment in Case of Illness' and the 'Kind of Medical Treatment'**

	Dependent Variable: Incidence Of Medical Treatment In Case Of Illness						Dependent Variable: Incidence Of Private Medical Treatment					
	Model 1			Model 2			Model 1			Model 2		
-2 Log Likelihood	1086.358			874.600			801.196			533.835		
Chi-square Block (Df)				26.233 (3)						34.936 (3)		
Significance Level Block				0.000						0.000		
N	917			917			629			629		
Independent Variables	Additive Coeff.	Multiple Coeff. (odds)	S.E.	Add. Coeff.	Multiple Coeff. (odds)	S.E.	Add. Coeff.	Multiple Coeff. (odds)	S.E.	Additive Coeff.	Multiple Coeff. (odds)	S.E.
Constant	-1.148	-	1.201	-1.319	-	0.490**	-0.217	-	0.843	-1.591	-	0.479**
IRDP Male1	-0.201	0.818	0.289	-0.310	0.734	0.356	0.028	1.028	0.026	0.464	1.591	0.389
IRDP Female	-0.106	0.899	0.098	-0.161	0.851	0.121	-0.003	0.997	0.002	0.061	1.063	0.057
TNWDP Young	0.689	1.992	0.163**	0.066	1.068	0.047	0.784	2.190	0.365*	0.273	1.314	0.351
TNWDP Old Myrada	0.704	2.022	0.174**	0.181	1.199	0.153	0.943	2.568	0.258**	0.670	1.954	0.548
TNWDP Old Rido	0.515	1.674	0.264*	0.057	1.059	0.031	0.579	1.784	0.392	-0.056	0.946	0.041
Ln (Age Mother)	0.651	1.917	0.260*	1.026	3.340	0.519*	-	-	-	-	-	-
Initial Literacy Status of Mother (yes =1)	0.543	1.721	0.232*	0.549	1.732	0.278*	0.359	1.432	0.169*	0.348	1.416	0.153*
Initial Independent Income by female respondent (yes =1)	0.498	1.645	0.211*	0.449	1.567	0.184*	0.624	1.866	0.264*	0.657	1.929	0.276*
Birth Order	-0.163	0.850	0.059**	-0.219	0.803	0.053**	-	-	-	-	-	-
Number of Male Children <10	-0.117	0.889	0.120	-0.114	0.892	0.101	-	-	-	-	-	-
Number of Female Children < 10	0.256	1.291	0.121*	0.281	1.324	0.133*	-	-	-	-	-	-
Household Land Ownership (yes=1)	0.125	1.133	0.131	0.125	0.132	0.116	1.082	2.951	0.205**	1.126	3.083	0.324**
Sex of Child (female=1)	-0.548	0.578	0.095**	-2.026	5.850	0.774**	-0.516	0.597	0.184**	-2.126	0.119	0.619**
DM(female decision-making (FemDem)=1)2	-	-	-	1.689	5.414	0.516**	-	-	-	1.743	5.714	0.438**
DM(male decision-making (MDem)=1)	-	-	-	1.053	4.709	0.313**	-	-	-	1.638	5.144	0.347**
DM(bargaining=1)	-	-	-	1.532	4.627	0.425**	-	-	-	1.689	5.414	0.384**
FemDem*Sex of Child	-	-	-	2.149	8.576	0.743**	-	-	-	3.782	43.904	1.123**
MDem*Sex of Child	-	-	-	1.494	4.455	0.350**	-	-	-	1.334	3.796	0.318**
Bargaining*Sex of Child	-	-	-	2.463	11.470	0.893**	-	-	-	2.891	18.011	0.983**

<sup>1</sup> reference category for credit program is "control group"

<sup>2</sup> reference category for decision-making mechanism (DM) is "norm following and decision-making by others"

\* significance at 5%

\*\* significance at 1%

iii. *False consciousness*

In neither of the cases was I able to prove that the interaction effect of “credit program” and “decision-making mechanism” was statistically significant. This indicates that the use of a particular decision-making mechanism generated about the same effect in all sub-samples. Irrespective of the credit program, less norm following, for instance, leads to a weakening of the male bias. What differs between the different sub-samples is the actual use of different decision-making mechanisms, a factor which in itself largely influenced by exposure to different credit programs. The absence of an interaction effect casts some doubts on the prevalence of “false consciousness” (Amartya Sen, 1983) and lends support to the thesis of Agarwal (1994) that the absence of female claims about their own inferior treatment should not necessarily be considered as a proof of false consciousness. Rather, it is the absence of a legitimate forum to express the claims which explains their silence. Interviews indeed indicated that women did have a number of preferences that differed from those of their husbands. However, it is only after they became a member from a women’s group that they were convinced about the legitimacy of these diverging preferences and that they were able to express their preferences through the increased voice in household decision-making. Extra-household bargaining with the community through women’s groups further reduced the external sanctions on non-conform behavior and made expulsion from the community a less viable threat, which changed the perceived costs and benefits of ‘deviating’ behavior.

#### **4. Conclusions**

The present article argues that the income-pooling test, which is used to differentiate between unitary and collective preference approaches, may lead to erroneous conclusions. In case items are studied which do not reside (yet) within the bargaining area, the conventional test will unequivocally point at the prevalence of a unitary household model and will advise policy makers to rely on the toolkit of price and income incentives. However, it is unlikely that the latter will lead to changes in allocative outcomes as it is highly hypothetical that the underlying allocative rules will thus be changed.

I put forward the argument that the income-pooling test and neoclassical household models are based on the premise that behavior is the sole result of free human agency. Empirical evidence as well as contributions from feminist and critical institutional economics point at the importance of norm guided behavior, which is not necessarily a less important drive for human behavior. Starting from the idea that human behavior is the result of free human agency, norm adoption and the interaction among both, I endeavored to demonstrate the potential value added of an economic institutional approach.



In order to test the value added of the institutional approach I expanded the conventional test in two directions. Firstly, in addition to the comparison of impact of credit in hands of men and women, I studied the impact of credit combined with collective action through women's groups, the latter being a mechanism of institutional change. Secondly, I broadened the information basis from a mere focus on allocative outcomes to allocative processes. This enabled to focus on linkages between allocative outcomes and the underlying allocative rules.

Empirical findings from my south Indian research strongly suggest that in respect to girls' health care investments, conventional and expanded test results differ. While the former leads to the acceptance of the unitary approach hypothesis, the latter indicates that it is important how credit enters the household. If policy makers opt to increase the probability that girls will be treated upon illness and will receive higher quality treatment, they may use women's groups as an instrument to target resources to mothers.

Broadening the analysis towards decision-making processes has shown that the impact of women's groups on allocative outcomes is largely due to changes that have been induced in household allocative processes. My research findings suggest that the use of particular decision-making mechanisms lead to particular outcomes, which also differ for boys and girls. Norm following, for instance, leads to female discrimination in health care investment while bargaining and especially female decision-making are associated with a preference to invest in daughters. Furthermore, there is no evidence that the impact of different decision-making mechanisms differs across different credit programs, which puts into perspective the idea of women's "false consciousness". What differs is the actual use of different allocative rules, the latter being strongly influenced by the particular credit program in which one participates.



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