GENDER AND POVERTY: HOW WE CAN BE MISLED BY THE UNITARY MODEL OF HOUSEHOLD RESOURCES – THE CASE OF TAJIKISTAN

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ABSTRACT

Using the 2003 Tajikistan Living Standard Survey this paper looks at the relationship between gender and poverty and show how, by modifying the equal sharing assumption of the household resources, we can easily be misled by the poverty and gender relationship. This paper also shows how those gender analyses which use the female headed household and male headed household dichotomy in Tajikistan obscure the gender analysis of poverty due to the heterogeneity of female headed household types.

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Gender and Poverty: How we can be misled by the unitary model of household resources – the case of Tajikistan

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Abstract

Using the 2003 Tajikistan Living Standard Survey this paper looks at the relationship between gender and poverty and show how, by modifying the equal sharing assumption of the household resources, we can easily be misled by the poverty and gender relationship. This paper also shows how those gender analyses which use the female headed household and male headed household dichotomy in Tajikistan obscure the gender analysis of poverty due to the heterogeneity of female headed household types.

1. Introduction

According to the 'Gendered Analysis of the 2003 Tajikistan Living Standard Survey (TLSS)' (Falkingham and Baschieri, 2004), there appears to be few gender differentials in poverty in Tajikistan. This is true regardless of the type of poverty: 24 percent of women and 23 per cent of men live in households ranked in the bottom quintile i.e. are living in *relative poverty*[1]; and 64 per cent of women and 63 per cent of men live in a household with a per capita consumption less than 2.15$ PPP a day i.e. are *absolutely poor* [2]. Thus, despite the fact that there is evidence that poverty varies by age, region, and household size (Falkingham and Klytchnikova, 2004) it appears that there is little evidence of a gender difference in the likelihood of being poor. This is in large part a function of the fact that poverty is defined at household level, and people living in the same household are assumed to enjoy the same

[1] Proportion of men and women ranked in the bottom 20 percent of the household distribution of per capita household consumption adjusted for regional price differences.

[2] Share of the population living in household with a per capita consumption of less than US$2.15(using ECAPOV PPP conversion factor for 2000 inflated to May 2003 prices using CPI).

standard of living. We argue that within the context of Tajikistan this may be misleading.

Both the recent PAU(World Bank 2004) and the Gendered Analysis of the 2003 TLSS (Falkingham and Baschieri, 2004) adopted the *unitary model* of the household, which assumes that all the resources in the household are pooled and that all members share in these pooled resources in equal measure. However, recent research shows that in many instances this is not the case (Haddad, Hoddinott and Alderman 1994; Kanji 2004), and increasing women's share of cash income in a household increases the share of the household budget allocated to food (Garcia 1990; Hoddinott and Haddad 1995; Ulph 1988) and reduces the amount allocated to items such as tobacco and alcohol.

Using the 2003 Tajikistan Living Standard Survey this paper looks at the relationship between gender and poverty and shows how, by modifying the equal sharing assumption of the household resources, a completely different picture of the relationship between poverty and gender may be obtained. This paper also demonstrates that gender analyses which simply employ a female headed household and male headed household dichotomy obscure the gender analysis of poverty due to the heterogeneity of female headed household types in Tajikistan.

The paper is organised as follows: Section 2 briefly reviews previous studies which have examined the intra-household allocation of resources; in Section 3 we show the extent of poverty amongst women and men, and how this varies according to a range of different assumptions regarding the sharing of household resources; Section 4 examines the relationship between poverty and gender by looking at men and women living in FHH and MHH and illustrates the heterogeneous nature of FHH; some concluding thoughts are presented in Section 5.

2. The unitary model of the household, intra-household allocation of resources and gender

Virtually all poverty assessments carried out by the World Bank adopt the unitary model of the household in their analyses. The unitary model of the household[3] envisages the household as a single unit, implying the existence of a single household welfare function reflecting the preferences of *all* its members. However as Chiappori

[3] It has also been called the 'common preferences' model or the 'altruism' model.

et al. (1993) suggest, this is an assumption which is 'by no means an innocuous assumption' as individual household members are likely to have different preferences. Another fundamental assumption of the unitary model of the household is the pooling of all household resources, with the result that all members are assumed to enjoy the same level of welfare. However, sociological and anthropological studies show that this is rarely the case (Bruce and Dwyer, 1988; Evans, 1989; Moore, 1992). In particular, men are found to retain part of their income and 'spend some of their income on goods for their personal consumption'(Haddad et al. 1994). By contrast, women are believed to be more likely to purchase goods for children and for general household consumption. A study in Kerala in India suggested that a child's nutritional level is positively correlated with the size of mother's income, whereas there were no significant effect with the increase of parental income (Kumar 1977).

Finally, the unitary model often relies on an assumption that the household is an altruist, taking the well being of others into account. This assumption is difficult to maintain when the individual who is assumed to be altruistic is also the perpetuator of physical violence' (Haddad et al. 1994:41). As Haddad et al. (1994) notes, sociological and cross-cultural ethnographic studies show that wife-beating occurs in virtually all societies; Tajikistan is no exception. A study conducted by the Association of Women Scientists of Tajikistan in 1999 interviewed some 1,600 women in Dushanbe, and across the Republic in Kurgan-Tube, Kulyab, Kofarnihon and Tusunzade, on their understanding and experience of violence. A broad definition of violence was adopted, including physical, psychological and economic violence. Overall the study found that two-thirds (67%) of Tajik women were regularly exposed to some form of violence within the home (Falkingham, 2000). Given this it appears unlikely that the unitary model of the household will reflect the dominant form of household behaviour within Tajikistan.

Chiappori et al. (1993) argue that a better representation of real life may be provided by the collective model of the household. They suggest that there are two types of collective models, the cooperative and non-cooperative. In the non-cooperative models 'individuals within the household not only have differing preferences, but act as autonomous sub economies. Each individual controls their own income, and purchases commodities subject to an individual (non pooled) income constraint'(Haddad et al. 1994:17). In the cooperative model individuals have a choice of remaining single or of forming a household. The household decisions are an

outcome of some bargaining process. This model does not assume the pooling of *all* resources, but rather that men and women choose to pool some resources and retain sole control over others. Thus the key issues within the cooperative collective model are the extent to which resources are pooled and the relative strength of men and women in the bargaining process.

Studies which have looked at the intra-household allocation of resources have largely concentrated on the relationship between the share of the wife's income and the share of expenditure, treating the household as units of both production and consumption. Ulph (1988:45) notes 'a very clear relationship between the share of expenditure on commodities and the share of household income accruing to the wife', whereas Braun (1988) founds a positive relationship between the proportion of cereals produced under women's control and household consumption of calories in Gambian households. Garcia (1990) founds that higher the women's income share of the household income, the higher is the amount of calories and protein consumption. Hoddinott and Haddad (1995), using the Ulph (1988) non-cooperative bargaining model of household expenditure and nationally representative data from Ivory Coast , show the extent to which a bargaining model of household behaviour could be used to explain patterns of expenditure. They show that increasing wives' share of cash income increases the budget share of food, and reduces the budget share of alcohol and cigarettes. They support the view that the 'household are better modelled by collective entities in which bargaining occurs among members'(Hoddinott and Haddad 1995:94).

In his 1985 article, Sen (1985) notes that the relative bargaining position amongst household members depends on their perceived contribution to the household. Under this assumption women are more likely to be placed in a disadvantage position as much of their contribution may take form of non-market labour, which is less visible than wage employment. In Tajikistan, nearly three-quarters of economically active women are employed in agriculture (Falkingham and Baschieri, 2004, Table 30) where wages are low and payments in-kind frequent, and where often the goods that are produced are consumed within the household. Data on women's use of time also reflects a strongly gendered division of labour within the household, with Tajik women spending significant amounts of time on household tasks on a daily basis (Falkingham and Baschieri, 2004, Table 39). Both of these factors suggest that Tajik women's bargaining position may be low relative to men's.

Haddad and Kanbur (1990) show that if resources are unequally allocated within the household, poverty measures are sensitive to intra-household inequality. This suggests that that if the assumption of equal sharing of household resources is found *not* to be valid in Tajikistan, estimates of poverty amongst women and men might change dramatically according to the extent of intra-household inequalities. As a consequence a gendered analysis of poverty that uses the unitary household assumption might provide an entirely wrong picture of the relative levels of poverty amongst men and women.

In this paper we will show how we can be misled by the assumption of a unitary household in the analysis of gender differentials in poverty in Tajikistan and investigate the changes in poverty levels that result when we move away from the equal sharing assumption. The aim of the paper is not to provide incontrovertible evidence for the existence of a non-unitary household model in Tajikistan as sufficiently disaggregated data on expenditure and income for women and men are not available. Rather the aim is simply to highlight the importance from a gender perspective of interpreting with caution any analysis of poverty which assumes the unitary household.

3. Unitary versus collective household assumption: what happens to the gender and poverty relationship?

3.1 Welfare under the unitary and collective household models

As discussed above, the unitary household model implicitly assumes that all the resources in the household are pooled, that all members share equally in these pooled resources and, as a result, the welfare of each member is equal to that of the other members of the same household.

The per capita welfare of household members under the unitary model assumption, $W_{M,F,K}$, is equal to the sum of male income, y_M, and female income, y_F, divided by the total household members (M = total men, F = total women, K = total number of children assuming the absence of child labour).

$$W_{M,F,K} = \frac{y_M + y_F}{M + F + K} \qquad (1)$$

Moving away from the assumption of equal sharing, the welfare of different individuals within the household will depend on the proportion of income that is pooled into the household budget and how it is allocated. Here we assume that all pooled income is equally shared, but that unpooled income is retained for that member's exclusive use. Considering, c_m, the proportion of total male income which is pooled into the household budget, and c_f the proportion of total female income which is pooled into the household budget, the welfare of men and women is given by:

$$W_M = \frac{(1-c_m)y_M}{M} + \frac{(c_m y_M + c_f y_F)}{M+F+K} \quad (2)$$

and

$$W_F = \frac{(1-c_f)y_F}{F} + \frac{(c_f y_F + c_m y_M)}{M+F+K} \quad (3)$$

In this model, in the absence of child labour, the level of per capita child welfare is dependant on the amount of pooled resources divided by the number of household members.

$$W_K = \frac{c_f y_F + c_m y_M}{M+F+K} \quad (4)$$

This assumes that mothers do not pool their 'retained' income with their children. However sociological and anthropological studies have suggested that 'women generally more likely to purchase goods for children and general household consumption' (Haddad et al. 1994). An alternative scenario would be to assume that women prioritise the welfare of their children and pool all their resources with their children. In this case our previously proposed formulae of female welfare (3) and children welfare (4) will be substituted by formulae 5 which represent the welfare of women and children, where mothers share all their resources with children.

$$W_{F,K} = \frac{(1-c_f)y_F}{F+K} + \frac{(c_f y_F + c_m y_M)}{M+F+K} \quad (5)$$

In the unitary household assumption c_m and c_f are equal to 1 and the welfare of each household member is represented by the formula 1.

3.2 Applying the collective model of the household within the TLSS

Within the TLSS, total household income is comprised of:

- Total wage employment
- Social assistance
- Remittances
- Rent obtained from land
- Income from farm activities
- Income from family business
- Income from non-farm enterprise
- Imputed income from the consumption of home production and gifts of food received.

Unfortunately most of the information on income within the TLSS is collected at the household level and so it is not possible to attribute this directly to any one individual within the household. For example, although pension benefits have an individually based entitlement the question on pension income was phrased in such a way that it is not possible to directly assign this, or any other social assistance benefit, to the person with the entitlement. Similarly it is not possible to assign remittances or income from household enterprises to any one individual or group of individuals, although often is the men that manage these resources. The only source of income that can be directly and unequivocally attributed to an individual within the household is wage income, both cash and in-kind. Given this it is necessary to modify the formulae presented in section 3.1 above and introduce an additional component, household income y_H .

The welfare household members under the unitary household assumption can now be written as the sum of female income, male income and household income y_H .

$$W_{M,F,K} = \frac{y_M + y_F + y_H}{M + F + K} \tag{6}$$

Under the collective household assumption, the welfare of men, women and children can then be written as:

$$W_M = \frac{(1 - c_m) y_M}{M} + \frac{(c_m y_M + c_f y_F + y_H)}{M + F + K} \tag{7}$$

$$W_F = \frac{(1-c_f)y_F}{F} + \frac{(c_f y_F + c_m y_M + y_H)}{M+F+K} \quad (8)$$

$$W_K = \frac{c_f y_F + c_m y_M + y_H}{M+F+K} \quad (9)$$

assuming, for the time-being, that women do not pool all their resources with their children.

3.2.1 Poverty and gender under the unitary model of the household

Table 1 shows levels of absolute poverty amongst men and women by region as reported by the recent World Bank *Poverty Assessment Update*, using per capita household consumption adjusted for regional price differences as the welfare indicator and an absolute poverty line of US$ 2.15 a day (47.06 Somoni). As noted in Falkingham and Baschieri (2004), there appears to be no significant differences between men and women in the likelihood of being poor within region.

Table 1: Absolute poverty amongst women and men by region, TLSS 2003.

	Overall Poverty rate		Poverty rate amongst women		Poverty rate amongst Men	
	PO	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	84.1	80.0-88.3	84.3	79.9-88.6	84.0	79.6-88.2
Sugd	64.3	60.0-68.6	65.0	60.8-69.2	63.6	59.1-68.2
Khatlon	78.1	74.3-82.0	78.1	73.9-82.3	78.1	74.3-81.8
Dushanbe	48.9	42.5-55.5	49.3	43.2-55.5	48.5	41.3-55.7
RRS	45.1	39.8-50.4	45.5	40.1-50.8	44.7	39.4-50.1
Total	63.4	61.1-65.9	63.9	61.5-66.3	63.1	60.6-65.5

Source: TLSS 2003.
Note: Using per capita household consumption and $2.15 PPP poverty line.
CI are calculated using weighted data, applying the simple weighting factor rather than the grossing up weight supplied in the dataset as the latter will disproportionately reduce the standard errors.

Average per capita household income is approximately half that of per capita expenditure and this is fairly consistent across household types (see Table 20, Falkingham and Baschieri, 2004). This suggests that income is consistently under-reported by around 50 percent. Thus for the purpose of this illustrative exercise it seems appropriate to an absolute poverty line of $1.08 PPP a day rather than $2.15PPP. This gives a poverty line of 23.62 Somoni.

Table 2: Absolute poverty amongst women and men using per capita consumption expenditure and per capita income, $1.08 PPP a day poverty line.

	Consumption				*Income*			
	Poverty rate Amongst women		**Poverty rate Amongst men**		**Poverty rate Amongst women**		**Poverty rate Amongst men**	
	PO	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	35.6	27.2-44.1	36.2	27.8-44.6	73.0	66.6-79.3	73.4	67.3-79.4
Sugd	16.1	12.8-19.4	15.4	12.1-18.6	69.7	65.2-74.3	67.8	63.4-72.2
Khatlon	27.7	23.3-32.1	26.9	22.2-31.6	66.3	60.9-71.6	65.5	60.0-70.8
Dushanbe	11.6	8.5-14.7	12.3	8.6-16.1	68.0	60.5-75.5	70.5	63.6-77.4
RRS	8.5	5.2-11.8	8.4	5.2-11.6	60.0	54.6-65.1	59.5	54.6-64.4
Total	18.3	16.3-20.3	17.8	15.7-19.8	66.3	63.6-68.9	65.5	62.8-68-1

Source: TLSS 2003.
Note: CI here, and in the following tables, are calculated using weighted data, applying the simple weighting factor rather than the grossing up weight supplied in the dataset as the latter will disproportionately reduce the standard errors.

Table 2 shows levels of absolute poverty using two alternative measures of welfare - per capita household consumption and per capita income, both adjusted for regional price differences - with a poverty line of 23.62 Somoni. Although there are marked differences in the level of poverty according to which measure of welfare is used, there appear to be no gender differences within region with either measure. There are, however, fewer regional differences using income as opposed to consumption. This suggests that there may be regional differences in the underreporting of income, with unreported income being reflected in consumption patterns but not total income; certainly there are likely to be regional differences in the opportunities for earning non-cash and secondary incomes.

3.2.2 Poverty and gender under the collective model of the household

Under the collective model of the household, income is no longer equally pooled and shared amongst all members of the household. The critical assumptions in determining the welfare of different members of the household are now the proportion of income pooled by men i.e. c_m, and the proportion of income pooled by women i.e. c_f. As a first step we assume that both men and women decide to retain 50% of their wage income and pool 50%. If there is equality between men and women in the regional labour market, then we might expect y_M and y_F to be similar (if not the same) and thus for the welfare of men and women to also be similar. Table 3, however, reveals a very different picture.

Table 3: Absolute poverty by gender according to the unitary and collective household models, using income and $1.08 PPP a day poverty line

	Unitary household: c_f =1, c_m =1						*Collective household c_f =0.5, c_m =0.5*					
	Poverty rate amongst women		**Poverty rate amongst men**		**Poverty rate amongst children**		**Poverty rate Amongst women**		**Poverty rate amongst men**		**Poverty rate amongst children**	
	PO	**PO**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	72.3	65.9-78.6	71.3	65.3-77.3	75.8	69.4-82.1	75.7	69.8-81.7	66.6	60.4-72.7	83.3	76.7-89.8
Sugd	68.2	63.8-72.6	66.4	61.9-71.0	71.1	66.5-75.6	71.3	67.3-75.2	56.6	51.6-61.7	81.4	77.5-85.2
Khatlon	62.8	57.3-71.7	64.0	58.4-69.6	68.8	63.5-74.1	64.0	58.7-69.3	50.8	44.5-57.2	77.7	72.8-82.6
Dushanbe	63.9	56.5-71.4	66.2	58.0-74.3	75.5	68.6-82.1	67.0	60.7-73.3	52.7	45.6-59.8	88.6	84.8-92.3
RRS	57.7	52.2-63.3	56.7	51.4-61.9	63.1	58.2-68.1	59.4	53.4-65.5	47.4	41.7-52.9	68.0	63.1-72.9
Total	63.9	61.2-66.6	63.5	60.8-66.3	68.9	66.2-71.6	66.1	63.5-68.7	52.7	49.7-55.7	77.6	75.7-80.0

Source: TLSS 2003.

Moving from the unitary household to collective household model results in an increase in absolute poverty rates amongst women and children, and a fall amongst men. The changes in the welfare position of men and women are sufficiently large to result in a statistically significant gender gap. Under the unitary model, and using per capita household income as the welfare measure, around 64 percent of both men and women are absolutely poor; under the collective model, 66 percent of women are defined as poor compared to 53 percent of men. These gender differentials directly reflect the differentials in wage income between men and women in the household, which in turn reflect the gendered division of labour within the household, with women being more likely to engaged in unpaid family work.

The assumption of individuals only pooling half their wage income is a strong one. In reality in an agricultural society like Tajikistan, where extended families with large numbers of children are the norm, it is unlikely that men or women would want, or be able, to retain as much as half their wage income for their own purposes. A more realist scenario is presented in Table 4 which assumes c_f = 0.8 and c_m = 0.8, i.e. women and men retain one-fifth their wage income and pool four-fifths. Under this stronger pooling scenario the gender poverty gap is reduced from 13 percentage points to 7 percentage points. By pooling a greater share of their income men experience a heightened risk of poverty, whilst women experience a slight fall. The greatest gainers, however, are children with poverty rates falling from 78 percent, under the moderate pooling assumption in Table 3, to 72 percent, under the stronger pooling assumption in Table 4).

Table 4: Absolute poverty by gender according to the collective household model (strong pooling assumption), using income and $1.08 PPP a day poverty line.

	Collective household, c_f =0.8, c_m =0.8					
	Poverty rate Amongst women		**Poverty rate amongst men**		**Poverty rate amongst children**	
	PO	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	73.4	66.9-79.8	69.4	63.4-75.3	77.7	71.3-84.3
Sugd	69.5	65.4-73.5	61.5	56.5-66.4	75.1	70.7-79.4
Khatlon	62.7	57.3-68.3	57.7	51.8-63.5	72.1	66.6-77.5
Dushanbe	63.9	56.9-71.0	59.2	51.2-67.2	80.6	75.2-86.1
RRS	58.7	53.1-64.4	51.7	46.6-56.8	64.6	59.6-69.6
Total	64.6	61.9-67.2	58.1	55.3-60.9	72.1	69.4-74.7

Source: TLSS 2003.

So far we have assumed that women do not share their 'retained' resources with their children. Thus in Table 4, children, with 'access' only to communal household resources, experience much higher rates of poverty than their mothers or fathers. However, as noted above, this is unlikely to be the case, and women and children's welfare may be better represented as being:

$$W_{F,K} = \frac{(1-c_f)y_F}{F+K} + \frac{(c_f y_F + c_m y_M + y_H)}{M+F+K} \qquad (10)$$

Applying this alternative allocation assumption results in the gender and poverty gap between men and women widening, with 66 per cent of women and 71 per cent of children having a per capita income below the poverty line compared to 58 per cent of men (see Table 5).

Table 5: Absolute poverty by gender according to the collective household model (strong male and female pooling assumption, female and child sharing), using income and $1.08 PPP a day poverty line.

	Collective household c_f =0.8, c_m =0.8					
	Poverty rate Amongst women		**Poverty rate amongst men**		**Poverty rate amongst children**	
	PO	**PO**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	73.6	67.2-79.9	69.4	63.4-75.3	76.9	70.4-83.5
Sugd	71.3	67.3-75.2	61.5	56.5-66.4	74.1	69.8-78.4
Khatlon	65.6	60.0-71.1	57.7	51.8-63.5	71.4	65.8-76.9
Dushanbe	65.5	58.4-72.6	59.2	51.2-67.2	78.7	72.7-84.8
RRS	59.1	53.5-64.8	51.7	46.6-56.8	64.4	59.469.5
Total	66.3	63.6-68.9	58.1	55.3-60.9	71.3	68.6-74.0

Source: TLSS 2003.

A final scenario is presented in Table 6 which assumes c_f = 1 and c_m = 0.8, i.e. women put all their income into the shared household pot and men retain one-fifth their wage income and pool four-fifths. By women pooling all their income, the poverty rate amongst women and children increases slightly as all women's resources are now shared with both their children and their menfolk. Moreover poverty amongst males is reduced yet further, with the result that the poverty gender gap is just under ten percentage points. It is worth noting that it is assumed that all the other household income except wage income is equally shared by the household members. This is a strong assumption as in reality men rather than women may be managing these resources. Thus the stimulation presented in Table 6 represents only a relatively small step away from the unitary household assumption and probably represents an underestimate of actual gender differentials in welfare in Tajikistan.

Table 6: Absolute poverty by gender according to the collective household model (strong male pooling assumption, total female pooling), using income and $1.08 PPP a day poverty line.

	Collective household c_f =1 c_m =0.8					
	Poverty rate Amongst women		**Poverty rate amongst men**		**Poverty rate amongst children**	
	PO	**PO**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	73.9	67.6-80.2	69.0	62.8-75.2	77.2	70.7-83.6
Sugd	71.8	67.9-75.7	60.8	55.8-65.7	74.4	70.0-78.6
Khatlon	65.8	60.2-71.3	56.6	50.8-62.4	71.4	65.9-76.9
Dushanbe	66.5	59.5-73.6	58.2	49.9-66.5	79.1	73.1-85.1
RRS	59.4	53.7-65.1	51.5	46.4-56.6	64.6	59.6-69.6
Total	66.7	64.1-69.3	57.4	54.6-60.2	71.5	68.8-74.2

Source: TLSS 2003.

Taking this last scenario of the collective household, Table 7 shows poverty levels by region and urban and rural residence using both the unitary and collective models. This provides a clear illustration of the sensitivity of estimates of welfare by gender to assumptions regarding the allocation of resources within the household. As is the case with poverty defined using expenditure in the main World Bank PAU, there are no marked gender differences in poverty under the unitary household model although there are significant differences within gender across regions. Under the collective household assumption, however significant poverty differentials by gender

emerge. The gender gap is least marked in GBAO (5-6 percentage points) and most marked in Sugd and Khatlon. The gap is generally higher in urban areas, where wage income constitutes a larger share of total household income, with poverty rates amongst women in urban Khatlon being nearly 16 percentage points higher than amongst men (78% v 62%).

Table 7: Absolute poverty amongst men, women and using both unitary and collective household model by oblast and urban and rural residence, using income and $1.08 PPP a day poverty line.

	Unitary household: $c_f = 1,\ c_m = 1$						*Collective household* $c_f = 1\ c_m = 0.8$					
URBA	**Poverty rate amongst women**		**Poverty rate amongst men**		**Poverty rate amongst children**		**Poverty rate Amongst women**		**Poverty rate amongst men**		**Poverty rate amongst children**	
	PO	**PO**	**PO**	**95% CI**	**P**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
GBAO	61.7	45.1-78.4	61.4	46.3-76.6	62.7	48.2-77.1	65.4	49.9-80.9	59.4	42.5-76.6	65.5	52.1-78.9
Sugd	66.3	59.2-73.4	65.5	58.0-72.9	72.9	65.1-80.7	69.4	62.2-76.5	57.7	49.1-66.3	76.6	69.4-83.9
Khatlo	73.3	67.5-79.3	75.4	70.7-80.1	79.7	73.0-86.4	78.0	71.1-84.9	62.4	53.5-71.2	83.7	76.7-90.6
Dusha	63.9	56.5-71.5	66.2	57.9-74.4	75.5	68.8-82.2	66.5	59.4-73.6	58.2	49.8-66.6	79.1	73.0-85.1
RRS	66.4	53.0-79.6	66.8	54.9-78.8	70.7	54.3-87.3	69.2	58.1-80.3	61.8	51.2-72.5	74.6	60.7-88.4
Total	66.7	62.8-70.7	67.7	63.6-71.7	75.1	71.1-79.1	69.9	66.1-73.7	59.3	54.7-63.8	78.8	75.1-82.6
RURA												
GBAO	74.5	67.7-81.2	73.3	66.7-79.7	77.8	70.5-84.2	75.6	68.8-82.5	70.9	64.4-77.4	78.6	71.5-85.6
Sugd	69.0	63.5-74.5	66.8	61.1-72.6	70.5	64.9-76.1	72.9	68.2-77.6	61.9	55.9-67.9	73.5	68.4-78.8
Khatlo	60.4	53.9-66.8	61.6	55.1-68.3	66.5	60.4-72.7	63.0	56.6-69.4	55.5	48.6-62.2	68.9	62.6-75.2
RRS	56.5	50.4-62.5	55.3	49.7-60.9	61.9	56.8-67.1	57.0	51.6-64.1	50.1	44.6-55.6	63.1	57.9-68.4
Total	62.7	59.4-66.1	62.1	58.7-65.5	75.1	71.0-79.1	65.4	62.1-68.6	56.7	53.3-60.2	78.8	75.1-82.6

Source: TLSS 2003.

Poverty rates by age under the two different scenarios are shown in Table 8. Employing the collective model, the poverty gender gap is greatest amongst those aged 25-29 when 67 percent of women are poor compared to 50 percent of men – a differential of 17 percentage points. Gender differences are least marked amongst those aged 60 and over, but nevertheless there remains a gap of over 5 percentage points.

Table 8: Absolute poverty amongst men, women and children using both unitary and collective household model by age group, using income and $1.08 PPP a day poverty line.

AGE	*Unitary household: c_f =1, c_m =1*						*Collective household c_f =1 c_m =0.8*					
	Poverty rate amongst women		**Poverty rate amongst men**		**Poverty rate amongst children**		**Poverty rate Amongst women**		**Poverty rate amongst men**		**Poverty rate amongst children**	
	PO	**PO**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
Below 16	none		none		68.9	66.2-71.6	non		none		71.5	68.8-74.2
16-19	65.5	61.8-69.2	63.6	59.7-67.4	none		67.4	63.9-71.0	58.9	55.2-62.7	none	
20-24	63.1	59.1-67.1	63.4	59.7-66.9	none		66.1	62.3-69.9	58.6	54.9-62.2	none	
25-29	63.7	59.7-67.6	58.1	53.7-62.5	none		67.2	63.3-71.1	51.9	47.3-56.6	none	
30-39	68.1	64.7-71.4	67.9	64.6-71.3	none		70.7	67.5-74.0	59.4	55.6-63.1	none	
40-49	65	61.6-68.4	67.6	64.1-70.9	none		67.6	64.4-70.7	59.7	56.1-63.5	none	
50-54	56.5	51.6-61.4	56.5	51.0-62.0	none		60.4	55.5-65.3	50.0	44.5-55.6	none	
55-59	59.4	51.7-67.1	60.6	53.8-67.5	none		62.5	54.9-70.1	56.4	49.6-63.3	none	
60+	59.3	54.9-63.6	60.6	56.4-64.8	none		61.9	57.6-66.3	56.5	52.2-60.8	none	
Total	63.9	61.2-66.6	63.6	60.8-66.3	68.9	66.2-71.6	66.7	64.1-69.3	57.4-	54.6-60.2	71.5	68.8-74.2

Source: TLSS 2003.

4. Investigating the poverty of Female and Male Headed Households

Due to lack of nationally representative information on intra-household resource allocation, gendered poverty analyses have often focused on the gender of the household head. However, recent studies have questioned the suitability of such a simple dichotomy to highlight the gender gap in poverty. Using the unitary model of the household, Falkingham and Baschieri (2004) report that there appear to be no significant differences in the level of poverty between individuals living either in female headed or male headed households Tajikistan.

Table 9: Absolute poverty between men and women living in FHH or MHH, using income and $1.08 PPP a day poverty line.

Unitary household assumption	**Poverty rate amongst women**		**Poverty rate Amongst men**		**Poverty rate amongst children**	
	PO	**95% CI**	**PO**	**95% CI**	**PO**	**95% CI**
MHH	64.6	61.6-67.5	63.4	60.5-66.3	69.3	66.4-72.2
FHH	61.2	57.2-65.2	65.1	60.2-69.8	66.5	62.2-70.9

Source: TLSS 2003.

In order to unpack this further it is useful to develop a typology of female-headed households based on their age (i.e. whether they are aged under 60 years of age or over 60) and their household composition. Overall, 39 percent of female household heads are aged 60 and over and the majority of these live in extended households. Single pensioner households make up just 5 percent of all rural FHH and 11 percent of urban FHH. The majority of FHH are headed by younger women and most FHH contain children. Table 10 shows the distribution of FHH by type within urban and rural areas.

Table 10: Distribution of Female Headed Households by type within urban and rural areas, TLSS 2003

Type of female headed households	**Urban**	**Rural**	**All FHH**
Single pensioner	11.3	5.4	8.5
60+ living with other adults only	5.6	4.0	4.9
60+ living in extended household with kids	13.8	38.9	25.8
Single younger adult	8.2	-	4.4
Lone parent	15.6	8.1	12.0
Under 60 living with other adults only	15.8	6.4	11.3
Under 60 living in extended household with kids	29.6	36.8	33.1
Total	100%	100%	100%

Source: TLSS 2003

Of course, the fact that a household is headed by a female does not mean that there are no males living in it. Indeed many FHH containing children will contain a male child, but they may also contain male adults too. Table 11 below shows the share of women, children and men within each type of FHH. Overall women constitute a greater share of FHH than men (38.2% v 22.3%) but it is notable that over a fifth of the members of FHH are adult males. This rises to nearly two-fifths amongst FHH headed by a woman under 60 living with other adults only.

Table 11: Proportion of males, females and children within MHH and FHH, by types of FHH.

	Proportion of female	**Proportion of children**	**Proportion of male**
MHH	28.4	41.6	30
FHH	38.2	39.5	22.3
Single pensioner	100	0	0
60+ living with other adults only	65.4	0	34.5
60+ living in extended household with kids	35.6	42.4	22.3
single younger adults	100	0	0

Lone parent	31.5	68.5	0
Under 60 living with other adults only	59.1	0	40.1
Under 60 living in extended household with kids	33.6	41.6	24.7
Total	29.8	41.3	28.8

Source: TLSS 2003.

Tables 12 and 13 show estimates of headcount poverty amongst *individuals* living in different household types. Interestingly even when the unitary model of the household is employed, males living in MHH have a slightly lower likelihood of living in poverty than women or children living in MHH. This may reflect a compositional effect, as single male households are the household type least likely to be poor. There are no differentials in poverty according to gender within FHH (Table 12).

Table 12: Absolute poverty for men and women living in a MHH and FHH by types under the unitary household model, using income and $1.08 PPP a day poverty line.

Unitary household $c_f = 1,\ c_m = 1$	**Poverty rate amongst women**		**Poverty rate amongst men**		**Poverty rate amongst children**	
			PO	**95% CI**	**PO**	**95% CI**
All MHH	64.6	61.6-67.5	63.4	60.5-66.3	69.3	66.4-72.2
All FHH	61.2	57.2-65.2	65.1	60.2-69.8	66.5	62.2-70.9
Single pensioner	42.7	31.7-54.2	n.a	n.a	n.a	n.a
60+ living with other adults only	42.6	23.8-61.4	44.3	20.9-67.8	n.a	n.a
60+ living in extended household with kids	65.3	58.4-72.1	67.2	59.5-74.9	65.9	58.4-73.5
single younger adults	43.1	26.4-59.8	n.a	n.a	n.a	n.a
Lone parent	58.7	49.6-67.9	n.a	n.a	58.6	47.8-69.4
Under 60 living with other adults only	44.2	31.4-56.9	44.7	30.9-58.5	n.a	n.a
Under 60 living in extended household with kids	67.1	60.6-73.5	69.6	62.8-76.2	69.6	63.2-76.1
Total	63.9	61.2-66.6	63.5	60.8-66.3	68.9	66.2-71.6

Source: TLSS 2003.

However, when the analysis is repeated using the collective household model, there are marked gender inequalities even within FHHs (Table 13). A priori one might expect gender differentials to be most marked in those household types where adult males comprise the larger share, i.e. female head aged under 60 living with other adults. However this is not the case. Rather they are higher within extended

households headed by a women aged 60 and over containing younger family members. The presence of children means that younger women within the household are less likely to be in waged employment, and so even a small shift away from the assumption of the unitary household results in a widening of the poverty gender-gap.

Table 13: Absolute poverty for men and women living in a MHH and FHH by types under the collective household model, using income and $1.08 PPP a day poverty line.

Unitary household $c_f = 1, c_m = 0.8$	**Poverty rate amongst women**		**Poverty rate Amongst men**		**Poverty rate amongst children**	
			PO	**PO**	**PO**	**95% CI**
MHH	67.5	64.6-70.3	57.3	54.4-60.2	71.9	69.1-74.8
FHH	63.7	59.9-67.4	58.2	52.9-63.4	68.9	64.7-73.1
Single pensioner	42.7	31.7-54.2	n.a	n.a	n.a	n.a
60+ living with other adults only	42.6	23.8-61.4	44.4	20.9-67.8	n.a	n.a
60+ living in extended household with kids	68.9	62.2-75.5	57.7	49.1-66.3	69.2	61.7-76.7
single younger adults	43.1	26.4-59.8	n.a	n.a	n.a	n.a
Lone parent	58.7	49.6-67.9	n.a	n.a	58.6	47.8-69.4
Under 60 living with other adults only	45.7	33.1-58.5	41.3	27.3-55.3	n.a	n.a
Under 60 living in extended household with kids	69.7	63.4-75.9	63.4	56.5-70.3	71.8	65.5-78.3
Total	66.7	64.1-69.3	57.4	54.6-60.3	71.5	68.8-74.2

Source: TLSS 2003.

5. Conclusion

This paper has explored the impact of varying assumptions concerning the intra-household allocation of resources upon estimates of absolute amongst men women and children in Tajikistan. There is little evidence available to guide the choice of assumptions concerning the extent of income pooling within Tajikistan. Thus a range of scenarios are presented. Moving away from the unitary model of the household, where resources are shared equally amongst household members and each member of the household is assumed to enjoy the same level of welfare, has profound implications for any analysis of poverty by gender. Significant gender differentials result even if relatively moderate assumptions concerning male control over resources are employed. If men are assumed to retain just 20 percent of their wage income for their own use and all other sources of income, including social assistance benefits, remittances and the imputed value of consumption of home production, are equally

shared, on average women experience a headcount income poverty rate of ten percentage points higher than men. Children are the most disadvantaged, with poverty rates 14 percentage points higher than adult males. Although the true extent of gender differentials within Tajikistan remains uncertain, the message is clear; by utilising the unitary model of household allocation we are in danger of underestimating significant differences in the welfare of men and women.

The paper also serves to illustrate the limitations of using the gender of the household head as an indicator of gender differentials in any analysis of poverty. Caution needs to be exercised on two fronts. First female-headed households are heterogeneous in nature. Treating such households as a homogeneous group is not appropriate; individuals living in some types are much less likely to be poor than on average and others face a significantly heightened risk of being poor. Second, simply using FHH does not circumvent the problems inherent in applying the unitary household model. If we are serious about 'gendering development' then it is important that the evidence base used for policy making is gender sensitive. We would argue that the traditional approach to measuring poverty employed in a standard poverty assessment fails on this count. For future poverty analysis to be more meaningful and reflexive of the reality of women's lives it is essential that the 'black box of the household' is unpacked.

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