

## **Migration, remittances and intra household resource allocation: Evidence from rural households of Sri Lanka**

**R. A. P. I. S. Dharmadasa\* and K. K. H. M. Rathnayake**

*Uva Wellassa University of Sri Lanka, Sri Lanka.*

*\*Corresponding author: [sdharmadasa@gmail.com](mailto:sdharmadasa@gmail.com)*

### **Introduction**

In the developing economies, internal and international migrants tend to remit a significant portion of their earnings to families back home. Remittances have an effect on both recipient households and the country as a whole. In household level, remittance is an important source of poorer households to reduce poverty and improve household welfare. Moreover remittance can change the intra-household resource allocation and bargaining power of individuals in the family (Haddad et al., 1997).

A critical issue in order to determine the impact on migration on the source country is how the remittances are used. Many researchers have found that remittances are primarily used to finance household expenditure, such as consumption and investment (Maitra & Ray, 2003). But some studies found that remittances are consumed instead of invested (Mosisa, 2012). Other studies show that remittances are used for productive investment like housing, education and health (Maitra & Ray, 2003). Intra household bargaining literature suggests that females prefer to allocate more remittances on education and health expenditure, while males spend more remittances on investment goods like housing and land (Gobel, 2013; Guzman et al., 2008; Haddad et al., 1997). This implies that males and females have different preferences on expenditure. Thus, it is important to identify the expenditure pattern especially focusing on gender of remittance receiver.

However, studies on impact of remittances on household expenditure pattern of Sri Lanka are lacking. Moreover, the existing knowledge on the impact of remittances household resource allocation is inadequate. Therefore, this study attempts to examine how the expenditure pattern of rural households changes with the receipt of remittances by paying attention intra-household bargaining and resource allocation.

### **Methodology**

In developing methodology, this study used an approach similar to that used in Guzman et al. (2008) to estimate the household expenditure pattern in Ghanaian households. Data from the Household Income and Expenditure Survey (HIES) conducted by the Department of Census and Statistics in Sri Lanka 2009/2010

period were used in this study. As the HIES data consists both remittance receiving and non-receiving households, the chosen functional form for the budget share equations should have following properties: (1) the same slope should not be imposed for all levels of expenditure; (2) a good statistical fit for different types of goods should be provided; and (3) the marginal propensities for all goods should equal unity.

In fulfilling those criteria, adjusted Working-Lesser model is used. It was derived from the Engle curve framework which describes how household expenditure on a particular good or service varies with household income.

$$q_i = g_i(y, z) \quad (1)$$

Where;

$q_i$  – Quantity consumed of good  $i$

$y$  – Total expenditure on goods and services

$z$  – Vector of other characteristics of a consumer

Engel curves are frequently expressed in the budget share form

$$w_i = h_i[\log(y), z] \quad (2)$$

Where;

$w_i$  – The fraction of  $y$  that is spent on buying good  $i$

When choosing a functional form, comparison of two groups of households (Remittance receiving and non-receiving) will produce bias results, if receivers of remittances differ systematically from non-receivers along observable and non-observable dimensions. To tackle this problem the preferred specification used in this study is the Fractional Logit model.

$$w_{hij} = \alpha_{ij} + \beta_{0ij}D\_RR\_INT + \beta_{1ij}D\_RR\_EXT + \beta_{ik}\log\text{totpcexp} + \gamma_{ij}\log n_{jh} + \theta_{ij}z_{hj} + u_{hij} \quad (3)$$

Where;

$w_{hij}$  – Budget share of expenditure category  $i$  by household  $h$  and gender of the household  $j$

$\text{totpcexp}$  – Total household per capita expenditure in Sri Lankan Rupees

$n_{jh}$  – Household size (Number of individuals in a family)

$z_{hj}$  – Vector of household characteristics that may affect the expenditure behavior

$D\_RR\_INT$  – Dummy variable (1=receive internal remittances, 0=otherwise)

$D\_RR\_EXT$  – Dummy variable (1=receive international remittances, 0=otherwise)

$j$  – Gender of the household head

$u_{hij}$  – Error term

The major challenge facing the research is how to find a variable to capture the intra-household decision making power. HIES data lacks these kind of predetermined exogenous variables typically used to measure the decision making power and the women empowerment (for example wealth upon marriage). However, the best proxy available is the sex of the household head. The very reason, according to Guzman et al. (2008), is that the household head is defined as the person who provides most of the needs of the household.

Therefore, we can expect him or her to be in a strong bargaining position within the households.

### **Results and discussion**

Table 1 in Appendix shows coefficients from the fractional logit regression which was run to examine the expenditure pattern of the female headed and male headed households. According to the results, the expenditure share devoted to food increase with the total expenditure per capita in both female headed and male headed households. The results also reveal that, having larger proportions of household members with 1 to 5 years education and 6 to 15 years education increases the food expenditure in both types of households. This implies that increasing education level improves the expenditure capability of household. Higher the number of old dependents in a family will reduce the expenditure share devoted to food. Results further reveals that female household heads spend significant proportion of internal remittances on food.

Results also show that there is a strong impact of total per capita expenditure and household size on the expenditure share devoted to education in both type of households. This is an indicator to show that rural households tend to increase the expenditure on education with the increasing income. As expected, having more number of members with 6 to 10 years of education and having more children less than 5 years decrease the education expenditure. But unexpectedly, with the receipt of remittances these households will not invest more on education. However, male headed households significantly reduce the expenditure on with the receipt of internal remittances.

The results further suggest that increasing total per capita expenditure enhances the housing investment in both types of households. The negative sign of the coefficient of household size implies that increase in household size leads to decrease in housing expenditure. Furthermore, results reveal that older educated male household heads prefer to invest more on housing. According to results having number of workers in the family and more old dependents in a family reduce the expenditure share devoted to housing. In general, these results imply that human capital variables do not have a significant effect on housing expenditure.

Health expenditure significantly increases with the total per capita expenditure and household size in male headed households. In contrast to male headed households, female household heads invest less on health with the increasing household size. Unfortunately, remittance receipt have not significant effect on household health expenditure. Results show that having more number of old dependents, people increase the health expenditure in female headed households.

There is a strong impact of total expenditure on consumer and durable goods expenditure on both types of households. Expenditure share devoted to consumer goods and durables expenditure increase with the number of members above 15 years in female headed households. Moreover, results show that older household heads invest less on consumer and durable goods. Education level of the household head has no any significant effect on consumer and durables goods expenditure in both type of rural households.

Other expenditure category includes expenditure on communication, entertainment, non-durables, transport and ad hoc items. With the increase in total per capita expenditure, the expenditure share devoted to this category reduces in both type of household heads. Significant positive coefficient in internal remittances receipt suggest that expenditure on communication, entertainment, non-durables, transport and ad hoc items increase with the receipt of internal remittances in male headed households. Having more number of workers and more number of old dependent people increase the expenditure share devoted to this category.

### **Conclusion**

The results suggest that with the receipt of internal remittances, male household head allocate less on education and more on ad hoc purchases, entertainment and transport expenditure, while female household head allocate more on food expenditure. The results further reveal that international remittances does not provide significant impact on household expenditure pattern in the rural sector households. Overall, the findings related to this study are important from policy perspective because they support a growing view in the literature that remittances (internal) play a significant role in intra-household resource allocation of rural sector of Sri Lanka.

**Keywords:** Expenditure pattern, Fractional Logit, gender, remittances, rural sector.

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### Appendices

**Table 1** Fractional Logit outputs by Gender and Expenditure Category

Variable	Food		Education		Housing	
	Male Headed	Female Headed	Male Headed	Female Headed	Male Headed	Female Headed
Log total expenditure per capita	2.1370***	1.1187	7.7215**	6.7191***	3.0053***	4.5565***
Log household size	-0.3120	-0.3266**	3.4580***	3.5687***	-0.4511	-0.6304**
Log total expenditure per capita square	-0.1349***	-0.0897***	-0.3191**	-0.2857***	-0.1430***	-0.2143***
Receive international remittances	-0.0134	0.0490	-0.219	0.0629	0.0552	0.0645
Receive internal remittances	-0.0299	0.0716**	-0.5211***	-0.0761	-0.0687	0.0643
Number of females above 15 years	0.0471	0.0283	-0.3764*	-0.4473*	0.0786	0.0755
Number of males above 15 years	0.0150	0.0051	-0.1780	-0.3925	0.0243	0.0175
Number of males above A/L	0.1016	-0.2272**	0.0749	-0.6779	0.0755	0.4561**
Number of females above A/L	0.1293**	-0.0498	-0.0871	0.0694	0.0974	0.0477
Females 6-10 yrs. of education	0.0089	-0.0237	-0.2087**	-0.1468**	-0.0818**	-0.0023
Males 6-10 yrs. of education	0.0205	0.0764**	-0.2491**	-0.1196	-0.0179	-0.0915
Number of female children less than 5 yrs.	0.0741	0.0254	-0.7781***	-0.7575***	0.0304	-0.0178
Number of male children less than 5 yrs.	0.0516	0.0897**	-0.9267***	-0.8899***	0.0037	-0.0981
Number of female children 6-15 yrs.	0.0232	0.0558	0.0135	-0.3681	-0.0758	-0.0418
Number of male children 6-15 yrs.	0.0366	0.0177	-0.1825	-0.3033	-0.0763	-0.0078
Number of workers in a family	-0.0326*	-0.0069	-0.3182***	-0.2711***	-0.1136***	-0.1431***
Number of old dependent people	-0.1033***	-0.0867***	-0.3072***	-0.2570**	0.0371	0.0310
Age of household head	-0.0134	-0.0094	0.1076**	0.0653*	0.0443***	0.0447***
Education of household head	-0.0129***	0.0029	0.0410***	0.0206	0.0263***	-0.0036
Age squared of household head	0.0001**	8.04E-05	-0.0010**	-0.0005	-0.0003**	-0.00034***
Ethnicity of household head	0.0532***	0.0591***	-0.0564	-0.0365	0.0265	0.0260
Marital status of household head	0.0237	0.0497	-0.0287	-0.2715*	-0.0436	-0.1759***
Proportion of durable goods utilized	-0.0004	-0.0013	0.0039	0.0032	0.0001	-0.0001
Constant	-6.4211*	-0.9454	-55.6108***	-46.6058***	-18.826***	-26.3275***
Number of observations	1229	977	1229	977	1229	977
Significance	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R <sup>2</sup>	0.0420	0.0440	0.0663	0.0457	0.0135	0.0176

Table 1 continue.

Variable	Health		Consumer and durable goods		Other	
	Male Headed	Female Headed	Male Headed	Female Headed	Male Headed	Female Headed
Log total expenditure per capita	3.9265*	5.4196	4.4281***	3.3565***	-0.8196	-0.2553
Log household size	1.3823**	-0.4750	0.2765	-0.1942	0.1986	0.7101***
Log total expenditure per capita square	-0.1579*	-0.2203	-0.2099***	-0.1576***	0.0829*	0.0605
Receive international remittances	-0.0139	-0.1503	-0.0216	0.0169	-0.0123	-0.0939
Receive internal remittances	0.0361	-0.2374	0.0231	0.0011	0.1319***	-0.0741
Number of females above 15 years	-0.3172**	0.0239	-0.0125	0.0238	-0.0100	-0.1016*
Number of males above 15 years	-0.2981**	-0.0747	0.0045	0.1376**	-0.0025	-0.0869
Number of males above A/L	-0.2644	-16.7341**	0.2360***	0.0566	-0.2231**	0.0642
Number of females above A/L	-0.3928**	0.2297	0.0531	0.3498**	-0.0689	-0.1371*
Females 6-10 yrs. of education	0.1713**	0.0404	0.0507*	0.0246	0.0051	0.0606*
Males 6-10 yrs. of education	-0.0035	0.2763	-0.0389	-0.0448	0.0157	-0.0776
Number of female children less than 5 yrs.	-0.1742	0.1329	0.0028	0.0156	-0.0134	0.0051
Number of male children less than 5 yrs.	-0.0222	0.4520***	-0.0938*	0.0360	0.0213	-0.1032
Number of female children 6-15 yrs.	-0.2708*	-0.0590	-0.0092	0.0313	-0.0581	-0.0944
Number of male children 6-15 yrs.	-0.3566**	0.2145	-0.0226	0.0781	0.0270	-0.1120*
Number of workers in a family	-0.2239***	-0.0321	0.0259	0.0237	0.1336***	0.1084***
Number of old dependent people	0.1013	0.2434**	-0.0250	-0.0439	0.1333***	0.1299***
Age of household head	0.0106	0.0363	-0.0103	-0.0283***	-0.0200*	-0.0138
Education of household head	0.0050	-0.0211	-0.0007	0.0045	0.0048	-0.0011
Age squared of household head	3.43E-05	-0.0003	0.00002	0.0001**	0.0001	0.0001
Ethnicity of household head	0.0618	0.1003	0.0073	-0.0271	-0.0735**	-0.0811***
Marital status of household head	-0.1797	-0.0132	0.0205	0.0050	0.0414	0.0582
Proportion of durable goods utilized	-5.8E-05	0.0050	-0.0007	-0.0003	-0.0001	0.0008
Constant	-28.7062***	-37.3847**	-25.912***	-19.5474***	-2.1138	-6.1115
Number of observations	1229	977	1229	977	1229	977
Significance	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R <sup>2</sup>	0.0264	0.0236	0.0067	0.0073	0.0580	0.0617

\*\*\* Significant at 1%, \*\* Significant at 5%, \* Significant at 10%  
All values are weighted