

Gender and Intra Household Allocation of Remittances: Evidence from Estate Sector of Sri Lanka

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Abstract

Using a nationally representative data set, we examine whether the individuals' bargaining power within households affect how remittances are allocated or spent in estate households in Sri Lanka. Using the gender of the household head as a proxy for household bargaining power, separate fractional logit models were estimated within the Engle's Curve framework for male headed and female headed households to examine the intra household bargaining on decision making on resource allocation. The results suggest that international remittances contribute to reduce food expenditure in female headed households while male headed households invest more in housing. The results further reveal that internal remittances are a major determinant of expenditures for food, communication, entertainment, non-durables, transport and ad hoc purchases of male headed households. Remitters also have a significant contribution over the allocation of resources. The contribution by them for the food expenditure share decreases while their presence as a migrant to the household increases the expenditure for education, housing, health, consumer goods, durables and expenditure for ad hoc purchases, entertainment and transport. Overall, the study concludes that remitter has a greater say over the allocation of household resources while household head play a significant role in allocating remittances on food and housing.

Keywords: Fractional Logit Model, Gender, Household Expenditure, Intra Household Bargaining, Remittances

INTRODUCTION

Receiving Remittances from internal or external migration by households in origin communities are a unique feature in developing economies. The impact of remittances on the economy is diverse in nature. For example, they play a significant role in poverty reduction with mixed impacts on income distribution of origin societies. Remittances change the expenditure pattern of remittance receiving households in these economies. In particular, remittances change the intra-household resource allocation as a result of change in bargaining power of individuals in the family (Haddad et al., 1997). The remitter also has an influence over the allocation of resources although he/she is not present in the household. Gender of the remitter and the gender of the receiver of remittances play a major role in this regard. For example, a higher female intra-household bargaining power seems to lead to higher expenditure on education, health and food (Göbel, 2013). Therefore, identifying how the household members spend the remittances and how the bargaining power of remitter and others affect the resource allocation within the household would provide important developmental implications for a society.

Sri Lankan society is characterized as a male dominant society where, in most cases, the principal male becomes the household head (Vithanage, 2015). So is the case with the estate sector¹ in Sri Lanka. Women in the plantation sector have the equal access in the case of employment and earnings. However, Ariyaratne et al. (2012) highlight that although women are the main household earners; it is often the male that collects their wages and control their money. On the other hand, the international migrants from estates are women and most of them tend to send remittances home. According to these facts, we can argue that it is the principle male who is engaged in decision making of allocating household resources. However, we can also assume that women should also have bargaining power over the allocation of resources as they contribute to the total household income through estate work and remittances. As remittances contribute to the household income, they should have a significance impact on the household resource allocation and the allocation of resources depends on the bargaining power of the individuals in the households. In most cases, the receiver of the remittances could be the spouse or the household head. Therefore, the role

¹ There are three commonly known sectors *viz* urban, rural and estate. Estate sector consists of all plantations which are 20 acres or more in extent and ten or more resident laborers.

played by the household head in allocating the resources is of great importance. On the other hand, the migrants also should have some control over household resource allocation when they send remittances. Therefore, by considering all these factors, this study attempts to answer the following questions;

- How does the expenditure pattern of estate households change with the receipt of remittances?
- How are the budget allocations affected by remitter?
- How are budget allocations affected by gender of receiver of the remittances?

MIGRATION, GENDER AND EXPENDITURE PATTERN

The remittances are considered as part of the development engine in developing communities and nations. Therefore, they should have an impact on consumption and productive investment on estate households of Sri Lanka as well. Although some studies related to other countries have concluded that remittances are devoted mainly to current consumption instead of being invested (Chami et al., 2003; Taylor et al., 1996), this may not be the case for Sri Lankan estate households as they are provided most of the infrastructure facilities and in most cases employment opportunities for the descendants of estate families by the estate management and therefore, they can make use of the remittances for investment purposes. Although the literature related to expenditure patterns of Sri Lankan households highlight the fact that remittances from females are invested in home improvements and acquisition of farm land and nonfarm assets, whereas remittances of men are channeled more toward housing assets and business ventures (De Silva, 2013) and have positive and significant effect on children health and education but not on conspicuous consumption or asset accumulation (De and Ratha, 2012), none of these studies has taken the intra-household bargaining process into account although women and men are typically assigned different responsibilities for different household decisions. This literature is further strengthened by Arunatilake et al. (2011) highlighting the fact that migrant households spend more on food, non-food, durable goods and housing. Sharma (2013) finds that the cumulative impact of migration and remittance to be significantly positive on key areas such as food consumption, health expenditures, and expenditure on basic non-food goods in Sri Lanka. In general, remittances help families maintain or increase consumption, housing and small business formation (Lasagabaster et al., 2005). However, there are hardly any evidences with regard to impact of remittances on gendered specific expenditure pattern in estate sector of Sri Lanka.

In allocating the remittances among the different preferences of the household members, basic assumption is that the women have more bargaining power over the use of remittances in female headed households while males have the more bargaining power in male headed households (Guzman et al., 2008). Apart from this assumption, it is assumed that all the migrant remittances are received and controlled by household head. The very reason for this is that, in particular, the head of the household is considered as a proxy for household decision making in maximization of welfare of the entire household. Although we consider the household head as the sole controller of remittances, it ignores even male headed households control over remittances could have impact on women's bargaining power and on the ability of the women to influence the resource allocation.

Throughout the literature on gender role and remittances in resource allocation, women have been given the priority and many authors emphasize that household expenditure on children's education, health and nutrition increases when resources are controlled by women (Quisumbing and Maluccio 2000; Haddad et al., 1997). Guzman et al., (2008) find that remittances affect expenditure shares in female headed households but not in the male headed households.

According to de la Cruz (1995), Mexican migrants in the US direct their remittances towards personal investments in land, housing, agricultural production and cattle. Particularly, female migrants send remittances to pay for cost of education of other household members. In contrast to this Pfeiffer and Taylor (2008) reveal that household with a female remitter invest a smaller share of total expenditure on education than household with a male remitter. They conclude that this result may be due to the intra-household bargaining power. Since women cannot monitor the education of their children, female migration leads to smaller expenses on education although remittances should affect education expenditure.

Generally, literature suggests that women prefer their remittances to be spent on food, clothing, education and health while men direct their remittances towards housing and purchase of consumer durables. This implies that women seem to function as an insurer for their families (Guzman et al., 2008). The main reason highlighted in the literature for the reason of influence of women is that they gain bargaining power over the allocation of household resources due to increase in household income via remittances from their earnings

abroad. Many studies have been focused on international migration. Hence the studies to estimate the impact of internal migration on expenditure patterns are lacking.

DATA

Data for this study come from household Income and Expenditure Survey (HIES) conducted by Department of Census and Statistics in 2009/10. The survey was comprehensive, collecting detailed information about wide range of topics like income, expenditure, demographic, education, health, remittances and transfers and assets etc. As this survey was not designed to gather information on migrant and remittance information, it had collected data on current remittances and transfers from outside the country and from within the country. HIES provide information on the persons who are members of the households and usually live with them. With respect to migration, the survey collected no information on migrants. The only information we can extract is whether the households receive remittances and where the remittances are coming from. On the other hand, it does not provide any information on either temporary or permanent migration. The survey collected information on remittances for the last 12 calendar months. The data set provides information related to rural, urban and estate sector of Sri Lanka separately.

The data include 54307 rural household members, 23346 urban household members and 7790 estate household members. This study employs only the data that belong to 7790 estate household members. These members belong to 1736 households. The data include 1273 non migrant households (73.33%) and 463 migrant households (26.67%). Among the migrant households, 331(71.49%) households are local (internal) migrant households and 93 (20.08%) households are international migrant households. The rest of the migrant households (8.43%) have both internal as well as international migrants. Out of these households, 286 households (61.77%) receive no remittances, 93 households (20.08%) receive internal remittances and 43 households (9.28%) receive international remittances. Further, 8.87% households receive remittances from both sources.

ECONOMIC THEORY AND EMPIRICAL STRATEGY

As the study deals with the household expenditure patterns of the remittance receiving and not receiving households and wide range of goods such as food, housing, and education etc., the chosen functional form should provide a good statistical fit. It should have the properties of increasing decreasing and constant marginal propensity to spend over wide range of goods and expenditure levels and satisfy the additivity criterion i.e. to be internally consistent, sum

of the marginal propensities for all goods should equal unity. In fulfilling those criteria, a form of working lesser model i.e. adjusted Working-Lesser model is used. This equation of interest of household expenditure is derived from the economic theory of consumer demand following the Engel curve framework which is the function of describing how a consumer's expenditures on some goods or services related to the consumer's total resources holding prices fixed. It expresses the share of each consumption item as a linear function of the logarithm of total expenditure, remittances, and other household's socio-economic characteristics.

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

Where;

q_i – Quantity consumed of good i

y – Income, wealth or total expenditure

z – Vector of other characteristics of a consumer

Engle curve is generally expressed in budget shares and therefore;

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

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

Accordingly, the expenditure function is set as follows;

$$w_{hi} = f(p_h, y_h, z_h) + u_{hi} \dots\dots\dots (3)$$

Where;

h - Household

i – Expenditure category

w_{hi} – Expenditure share on good i

p_h - Vector of price

y_h - Household income

z_h - Variables influencing marginal utilities

u_{hi} – Error term

A standard fractional logit model is used in estimating the model (1). Several factors are considered in choosing the fractional logit model. In developing the methodology, it is the recommendation that we must account for non-random selection into groups of remittance

receiving and not receiving households. Here the argument is that if receivers of remittances systematically differ from non-receivers along observable and unobservable dimensions (Acosta 2006), we cannot simply compare remittance receiving and non-receiving households due to the fact that it generates bias results. In controlling the issue of non-randomness, an instrumental variable approach is generally used. However, identification of a better instrument is not possible in HIES data. The next best solution is to use propensity score matching technique as an alternative approach. As there are several comparison groups that demand multinomial approach, it is difficult to implement matching approach as well. Therefore, standard fractional logit model is used where it does not demand instruments (Guzman *et al.*, 2008).

In estimating the fractional logit model, we specify the following functional form;

$$w_{hij} = \alpha_{ij} + \beta_{0ij}D_LOCAL_R + \beta_{1ij}D_INTER_R + \beta_{ik}\log TOTEXP + \gamma_{ij}\log n_{jh} + \theta_{ij}z_{hj} + u_{hij} \quad (4)$$

Where;

w_{hi} – Budget share of expenditure category i by household h

TOTEXP – Total household expenditure

n_h – Household size

z_h - Vector of household characteristics that may affect the expenditure behavior

D_LOCAL_R – Dummy variable (1=receive local/ internal remittances, 0=otherwise)

D_INTER_R – Dummy variable (1=receive international remittances, 0=otherwise)

j – defines the gender of the household head.

u_{hi} – Error term

The key dependent variables used in the analysis are the budget shares of six broad categories of expenditure items.

Table 1: Expenditure Categories – Key Dependent Variables

Expenditure category	Description	Examples
Food	Purchased foods Non purchased foods	Cereals, prepared foods, vegetables, meat, fats and oils, sugary, fruits, condiments, milk and milk foods, beverages, liquor etc.
Education	Expenses for education	Stationeries, school text books, tuition fees, school fees etc.
Housing	Annual use value	Estimated rental value of owner occupied housing units or freely occupied housing units.
Health	Health expenses	Consultant fees, Payments to medical laboratories for test analysis, Purchased of medical and pharmaceutical products, spectacles etc.
Consumer goods and durables	Expenses for consumer goods and household durables	Textiles, personal care, durable goods etc.
Other	Expenses for utilities, transport, communication, entertainment, non-durables	Ad hoc expenditure, communication, entertainment, non-durables, transport

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. According to Guzman *et al.*, (2008) 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. Finally, to analyze the impact of gender of the household head on expenditure patterns in remittance receiving households, separate regressions are run for female-headed households and male-headed households.

Apart from the above analysis, sex of the remitter also matters in intra-household decision making. Although the HIES data contain demographic information on household members, the data do not contain information on migrant demographics. However, we can identify the number of migrants in one family and their relationship to the household head. Based on this information, we examine the effect of remitter on the expenditure patterns of the estate households. Some households contain more than one migrant. The migrant could be the spouse, the son/ daughter, the parents or other relative of the household head. When there are more than one migrant, if we assume that all of them remit, there can be several remitters based on the relationship to the household head. For example remitter can be the spouse of the household head. In this case, the gender of the remitter can be identified. But in other cases, when remitter becomes the son/ daughter, the gender could not be identified as the data do not clearly distinguish whether the remitter is the son or daughter. Instead, the data only states the relationship as son/ daughter. On the other hand, if the remitter is the parent of the household head, we cannot identify the gender of the parent. As a result of nature of data available, we categorize the remitters as spouse remitter, Son/ daughter remitter, parent remitter, other relative remitter, spouse/ son/ daughter remitter, and son/ daughter /other remitter. Therefore, they are used as dummy variables. Apart from that, the gender of the household head is included as a dummy variable (1=female, 0=otherwise) to examine the effect of female household head on expenditure pattern. A separate fractional logit model is then estimated to find the impact of remitter on the expenditure pattern.

Model Specification and Descriptive Statistics

The fractional logit model includes characteristics of household heads, human capital variables and other household characteristics. In identifying those characteristics the standard literature was followed (See Guzman *et al.*, 2008, Göbel, 2013 etc).

Table 2: Variable definitions

Variable	Unit of Measurement
Age of household head	Years
Educational level of household head	Years
Sri Lankan Tamil	Dummy, 1=Sri Lankan Tamil, 0=otherwise
Indian Tamil	Dummy, 1=Indian Tamil, 0=otherwise
Living in a line room	Dummy, 1=living in a line room, 0=otherwise
Living in a single house	Dummy, 1=living in a single house, 0=otherwise
Number of males over age 15	Number
Number of females over age 15	Number
Number of male children under age 6	Number
Number of female children under age 6	Number
Number of workers over age 15	Number
Number of members over age 15 with 12 years and above education	Number
Number of members over age 15 with 6- 11 years of education	Number
Number of members over age 15 with 1-5 years of education	Number
Number of members over age 15 with no schooling	Number
Government or semi government employee of the household head	Dummy, 1= government or semi government employee, 0 = otherwise
Private sector employee of the household head	Dummy, 1=private sector employee, 0 = otherwise
region_1 Western Province	Dummy, 1= region_1
region_2 Central Province	Dummy, 1= region_2
region_3 Southern Province	Dummy, 1= region_3
region_4 North Western Province	Dummy, 1= region_4
region_5 Uva Province	Dummy, 1= region_5

We could see several interesting contrasts between female headed and male headed households. Accordingly, number of females in the female headed households is significantly higher than those in male headed households while number of males in the male headed households is significantly higher than those in female headed households. Female headed households have more schooling age children and children under age 6. Male headed households have more workers over age 15. This implies that male headed households have better endowment of human resources. Male household heads are more educated. Although the difference in educated years is significant, all of them have primary education. It is also

seen that male headed households spend more on their day to day activities than those of female headed households.

Table 3: Descriptive Statistics of Selected Variables

Variable	Female Headed Households					Male Headed Households					T – test
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	
Age of the household head	166	49.13	13.15	18	81	297	50.72	12.72	18	92	-1.278
Education level of the household head	166	3.99	3.59	0	17	297	5.21	3.16	0	16	-3.81***
Household Size	166	5.47	1.90	2	13	297	5.54	1.96	2	17	-0.38
Number of males over age 15	166	2.04	1.16	0	6	297	2.64	1.05	1	7	-5.63***
Number of females over age 15	166	1.99	.97	1	6	297	1.75	1.00	0	7	2.49**
Number of male children under age 6	166	.24	.45	0	2	297	.17	.44	0	2	1.45*
Number of female children under age 6	166	.18	.47	0	3	297	.18	.43	0	2	0.113
Number of male children age between 6-15	166	.56	.81	0	3	297	.34	.59	0	4	3.35***
Number of female children age between 6-15	166	.45	.69	0	3	297	.46	.78	0	5	-0.08
Number of workers over age 15	166	1.18	1.03	0	5	297	1.70	.95	0	6	-5.47***
Number of members over age 15 with 12 years and above education	166	.07	.28	0	2	297	.11	.39	0	3	-1.12

Number of members over age 15 with 6- 11 years of education	166	1.15	1.05	0	4	297	1.18	1.11	0	5	-0.29
Number of members over age 15 with 1-5 years of education	166	.76	.78	0	4	297	1.24	.94	0	5	-5.56***
Number of members over age 15 with no schooling	166	.43	.67	0	4	297	.38	.66	0	4	0.68
Per capita expenditure per year	166	44,748.72	21,134.03	12,056.58	13,6454.9	297	55,502.56	48,916.61	11,942.4	50,0703.7	-2.69**

*, **, *** Significant at 10, 5 and 1 percent probability level

RESULTS AND DISCUSSION

Impact of Migration and Remittances on Gendered Specific Expenditure Pattern

According to the results, the expenditure share devoted to food decreases with increase in the total expenditure of both types of households. The results also reveal that expenditure share devoted to food decreases with the increase in the number of males and females over 15 years age in both types of households. Furthermore, the results suggest that larger households tend to show greater consumption on average in male headed as well as female headed households. Having larger proportions of household members with 1 to 5 years education and 6 to 11 years education increases the food expenditure in both types of households. This is an indication that increasing levels of education enhances the spending capacity of the household. The results also show that older educated female household heads spend less on food. If the male household head is a private sector employee, he spends more food consumption. The private employee means that in most cases the household members work in estates. Therefore, their whole income may be devoted to consumption. Most of the estate workers live still in line rooms and they do not possess a larger extent of land. Most of the basic facilities are provided by the estate. Therefore, their total income may be spent on consumption only. However, private employment is not a significant factor in consumption of female headed households. Most importantly, receipt of internal remittances exerts statistically significant effect on food share in male headed households. The positive sign implies that receipt of internal remittances allows a greater family spending on the food of male headed households. On the other hand, the estimated coefficient capturing the effect of receipt of remittance from international migration is statistically significant in female headed households with a negative sign implying that receipt of remittances reduces the expenditure share on food by the female headed households. Most of the migrant from estate sector are internal migrants and they do ad hoc jobs outside the estate. Their earnings are not substantial. Therefore, the amount of remittances that the internal migrants send is less and those remittances are spent on consumption while international remittances may be used for other purposes other than consumption.

Table 4: Fractional Logit Outputs by Gender and Expenditure Category

Variable	Food		Education		Housing	
	Male Headed Households	Female Headed Households	Male Headed Households	Female Headed Households	Male Headed Households	Female Headed Households
Age of household head	.0062	-.0366**	-.1388**	.1048	.0158	.0339*
Squared Age of household head	-.00005	.00043***	.0011**	-.0009	-.0001	-.0002
Educational level of household head	-.0175	-.026*	-.1342**	.0046	.0532**	.0230
Log of household size	.8740***	.7246***	2.8706***	3.1289***	-1.1668***	-.1805
Sri Lankan Tamil	.07176	.0577	-.3501	-1.4752***	-.4453**	-.0939
Indian Tamil	.0453	-.0183	.7238	-.4345	-.6410***	-.2653**
Living in a line room	-.0706	-.0089	.3982	.2758	.0515	.3246
Living in a single house	-.0700	.0301	.6023	-.0149	.0723	.0998
Number of males over age 15	-.1270***	-.1842***	-.6537***	-.7223***	.2315***	.1802***
Number of females over age 15	-.1044	-.2847***	-.5058**	-1.5567***	.2079**	-.0075
Number of male children under age 6	-.0437	.1401	-.4928	-.8276**	.2048	-.0999
Number of female children under age 6	-.0191	-.01099	-.6565**	.0573	.15164	.0501
Number of workers over age 15	-.0221	.01834	-.2608*	-.1826	-.0750	-.2186***
Number of members over age 15 with 12 years and above education	-.0472	.0150	.4866	1.1358*	-.1326	-.1583
Number of members over age 15 with 6- 11 years of education	.1506**	.2286***	.0923	.6369**	-.0981	.0014

Number of members over age 15 with 1-5 years of education	.0948	.2703***	-.0991	.4878	.0797	-.0468
Number of members over age 15 with no schooling	.1163	.1212	-.0426	-.2085	-.0409	-.0987
Log of expenditure	-.9312***	-.5469***	.6321***	.1737	-.1537	-.5235***
Receipt of International Remittances	.0688	-.2499*	-.1156	-.0362	.3242**	.2501
Receipt of Internal Remittances	.1827**	-.0486	.07669	-.3790	.1599	-.0286
Government or semi government employee of the household head	.0511	.0137	-.6296	-.3223	.0693	.0934
Private sector employee of the household head	.1684*	-.0537	.2230	.8102**	-.0588	-.1554
region_1 Western Province	.0335	-.1203	-.1201	.6985	-.0680	-.2951
region_2 Central Province	.2299*	.1149	-.0809	-.2406	-.1691	-.0981
region_3 Southern Province	-.2317*	-.5116***	.1640	-1.3121	.0072	.2643
region_4 North Western Province	-.0013	.2229	-1.0571	-.07574	-.4991**	.37839
region_5 Uva Province	.0992	-.1874	-.0698	1.4527***	-.0705	-.2231
Constant	10.4151***	7.1121***	-9.9836***	-10.0856**	-.2762	2.6551
N	297	166	297	166	297	166
Significance	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R ²	0.0367	0.0273	0.0747	0.1311	0.0167	0.0262

*, **, *** Significant at 10, 5 and 1 percent probability level

Attention now turns to estimates concerning expenditure share on education. Expenditure devoted to education significantly increases with the increase in total household expenditure in male headed households although it is not significant in female headed households. Household size is a significant determinant of education share in both types of households implying that they invest more on education with the increase in the household size. With respect to education share, the results also suggest that expenditure share allocated for education decreases with the increase in number of male and female household members aged over 15, number of siblings aged below 6 and number of employed members in both household types except for female siblings aged below 6 years. Being a Sri Lankan Tamil is a significant determinant with a negative sign in expenditure share of education in female headed households. Human capital variables are important determinants of migration. Education level of the migrant as well as the education level of the other household members affects the migration decision positively. The results suggest that having more members with 6- 11 years education level and advanced level and above education level are important determinants of expenditure share on education in the female headed households. The variables are positive indicators of male headed households as well and it implies that they also invest more on education with the increase in number of educated members. Most importantly, the expectation is that these households should invest more on education with the receipt of remittances. However, the results suggest that receipt of remittances is not a significant determinant in expenditure share on education. This could be due to the fact that income from different sources may not have pooled together and some family members may have distinct preferences and distinct bargaining powers

Fractional logit results of housing share indicate that household size is an important determinant of housing share of male headed households. Negative sign of the coefficient suggests that increase in household size leads to decrease in expenditure for housing. Total expenditure is also a significant indicator of expenditure on housing share and the results show that the increase in total expenditure leads to decrease in housing expenditure share of the female headed households. Apart from those findings, female headed households as well as male headed invest more on housing when they have more members over age 15 while number of employees in the female headed households contributes negatively for the expenditure on housing. Many people who work in estates live in line rooms most of them work in estates. As the line space is very limited, they do not need to spend on housing. It is also seen from the results that human capital variables do not have a significant effect on

housing expenditure share. International remittance receiving male headed households invest on housing while female headed households also tend to invest on it. It is also noted that contribution from internal remittances is positive in investing on housing of male headed households while it is negative in female headed households. HIES data reveal that about 60.69% households still lives in lines while about 26.77% lives in single houses. Most of these household members belong either to Sri Lankan Tamils or Indian Tamils. The results of the fractional logit model on housing share further suggest that being an Indian Household reduces the expenditure on housing in male headed households.

Health expenses significantly increase when the total expenditure increases in both types of households. The households are more concerned on their health when their income increases. Moreover, with the increase in number of employed members in the households, the male headed as well as female headed households allocate less of their income to health. The estate areas in most cases are isolated from the rest of the Sri Lankan society. The estate management is responsible for providing most of the needs of the estate employees. Generally, estates have a hospital where the treatment is given free of charge. So is the case with other areas. But, when a person is sick, nowadays most of the people tend seek medical treatment from private medical practitioners. In most cases, estate employees do not have an access to private medical practitioners. Therefore, their private money may not spend on medical treatment. That is the reason why they spend less on health. However, they have inclined to spend on health when they have more children under age 6 except for female children in male headed households. With the receipt of the remittances either from abroad or Sri Lanka, male headed households spend less on health. However, female headed households tend to spend more on their health with the increase in receipt of internal remittances. Having more number of members with better education leads to reduce the expenditure share on health in male headed households although the it shows no statistical significance. In contrast to this, female headed households spend more on health when they have more members with 1-5 years and 6-11 years education levels. These results, however, are not significant. Apart from these findings, education level of the household head is a significant determinant in expenditure allocated to health. It is obvious that people are more concerned of their health when they are more educated. Very important contrast could be noted between these two types of households in relation to their employment status. That is male headed private employees tend to spend less on health while female headed employees

tend spend more on health. Finally, it could be highlighted that the expenditure devoted to health is reduced when the family size increases.

The expenditure share devoted to consumer goods and durables significantly increases with the increase in adult males, adult females and the little female children. It is also evident from the results that Sri Lankan Tamils and Indian Tamils spend more on consumer goods and durables in male headed households while they spend less on female headed households. Receipt of remittances also does not have a significant effect on this budget share. Log household size negatively affects the expenditure share in male and female headed households. Education level of the household head is also a significant factor in changing the expenditure share of consumer goods and durables in male headed households. In deciding the allocation of money to this expenditure category, the education level of the household plays a significant role and it changes the bargaining power of the household.

Table 4: Fractional Logit Outputs by Gender and Expenditure Category (continued)

Variable	Health		Consumer goods		Other	
	Male Headed Households	Female Headed Households	Male Headed Households	Female Headed Households	Male Headed Households	Female Headed Households
Age of household head	-.0308	-.0314	.0013	-.0057	.0126	.0376*
Squared Age of household head	.0002	.0004	-.0001	-.00005	-.00007	-.0004**
Educational level of household head	.0289	.0998**	-.0233*	-9.46e-06	.0119	.0113
Log of household size	-1.4928**	-2.4422***	-.0032	-.6032***	-.7931***	-.6956***
Sri Lankan Tamil	-.3170	.3298	.2771*	-.3321***	.0952	.2509*
Indian Tamil	-.2259	.1027	.4881***	-.0267	.0325	.2239**
Living in a line room	-.3386	.6523	.0239	-.2302	.0469	.0044
Living in a single house	-.4193	.6261	-.1037	-.1884	.0265	.01863
Number of males over age 15	.3787*	.1565	.0579	.2117***	.0785	.4079***
Number of females over age 15	.0347	.2694**	-.0171	.1201***	.1413**	.17896***
Number of male children under age 6	.5884***	.7228***	-.0522	-.0913	-.0501	-.1466
Number of female children under age 6	-.1901	.23656	.0565	.1478**	.0249	-.0616

Number of workers over age 15	-.0863	-.4116**	.0062	.0621	.0960*	.0455
Number of members over age 15 with 12 years and above education	-.1998	-.7731	.4419**	.0933	-.0893	-.1062
Number of members over age 15 with 6- 11 years of education	-.3249**	.1445	.0561	-.0636	-.13165	-.3155***
Number of members over age 15 with 1-5 years of education	-.0499	.2471	-.0029	-.1641**	-.1183	-.3271***
Number of members over age 15 with no schooling	-.1906	.0306	-.0327	-.0241	-.1153	-.1549
Log of expenditure	.7131***	.9269***	-.2417***	.0375	.9586***	.6890***
Receipt of International Remittances	-.3877	-.0274	-.1149	-.1052	-.0366	.2499
Receipt of Internal Remittances	-.2711	.01977	-.1306	-.0325	-.1966**	.1427
Government or semi government employee of the household head	-.0628	-.0965	-.0399	-.1045	-.0532	.0586
Private sector employee of the household head	-.9663***	.7192**	-.0909	-.0306	-.0966	-.03565
region_1 Western Province	.3050	-.0123	.2032*	-.1669	-.0532	.1035
region_2 Central Province	-.9529**	.1193	.1919	.0307	-.1251	-.1728

region_3 Southern Province	.51673	-.2320	.1738	-.4615***	.1586	.8006***
region_4 North Western Province	-2.1062***	-.9035	.4853	-1.2430***	.05208	-.0079
region_6 Uva` Province	-.1883	-.3224	.0596	-.0668	-.1185	.08494
Constant	-8.2403**	-13.4016***	.1903	-1.7289	-12.4659***	-10.0096***
N	297	166	297	166	297	166
Significance	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R ²	0.1184	0.0552	0.0069	0.0095	0.0358	0.0368

*, **, *** Significant at 10, 5 and 1 percent probability level

The last expenditure category (other) comprises of expenditure on communication, entertainment, non-durables, transport and ad hoc items. With the increase in total expenditure, the budget share allocated to this category is increased while it is decreased with the increase in the household size in both types of households. However household size affects the expenditure share negatively. Number of adult males and females, number of employees, being an Indian Tamil or a Sri Lankan Tamil household tends to increase the expenditure share for this category. With the increase in the number of educated persons in the household the expenditure devoted to this category decreases.

Impact of Remitter on the Expenditure Pattern

The results suggest that with the increase in the income households tend to decrease the expenditure on food, housing and consumer goods and durables whereas they tend to spend more on education, health, entertainment, transport, communication, ad hoc items etc. If the migrant/ migrants is/are spouse, son/ daughter, son/ daughter and other relative, spouse son/daughter or other relative of the household head, the contribution by them for the food expenditure share decreases while their presence as a migrant to the household increases the education share, housing share, health share, consumer goods and durables and expenditure for ad hoc purchases, entertainment, transport etc. (other share). The main defect is that we cannot observe the effect of son or daughter separately based on their gender. One important implication is that female household heads in the remittance receiving households spend less on food and more on health and the goods related to other expenditure category.

Table 5: Fractional Logit Outputs Including Remitters by Expenditure Category

Variable	Food	Education	Housing	Health	Consumer Durables	Other
Age of household head	.0352*	-.0753	-.0131	-.1067***	-.0158	-.01432
Squared Age of household head	-.0003	.0006	.00006	.0009***	.00009	.0002
Educational level of household head	.0055	-.1279**	-.0004	.1428***	-.0242	.0111
Log of household size	.6171***	2.1910**	-.9659***	-1.0381*	-.6348***	-.3905
Sri Lankan Tamil	.0192	-.9953	-.1089	.2557	.0294	.0214
Indian Tamil	-.1712	-.9375	.1935	.4512	.0612	.1585
Living in a line room	.0364	-.2769	-.3418*	.2937	-.0490	.12757
Living in a single house	-.0549	-.0522	-.5719***	.4143	.2270	.1777
Number of males over age 15	-.1003	-.7350**	.0792	-.0516	.1106*	.1481
Number of females over age 15	-.1582	-.9165**	.1516	-.3823	.1643*	.2187
Number of male children under age 6	-.1047	-1.0074***	.2275	.1934	-.0604	.15356
Number of female children under age 6	.0242	-.6142***	.1249	.0909	.1119	-.0579
Number of workers over age 15	-.0390	-.1046	.0168	-.1390	.0389	.0506
Number of members over age 15 with 12 years and above education	-.0327	.5421	-.1182	-.6497*	.0755	.0213
Number of members over age 15 with 6- 11 years of education	.1448	.7566*	.0821	.2743	-.0249	-.2905**
Number of members over age 15 with 1-5 years of education	.1185	.3983	.2656**	.5666**	-.0908	-.2513*
Number of members over age 15 with no schooling	.1946	.2657	.0113	.0966	-.0875	-.2498*
Log of expenditure	-.6242***	.1884	-.4567***	.2360	-.0108	.9126***

Female household head	-.2284**	-.1353	-.1271	.7069**	.0226	.3652**
Internal Migrant Household	.4943**	.1352	.1544	.1407	-.2418	-.6808***
International Migrant Household	.2032	.4271	.3251	.2034	-.3331**	-.2979
Percentage of Remittances Received	-.0019***	.0020	-.0004	.0016	-.0003	.0025***
Remitter is a son/ Daughter or Other Relative	-.6107**	1.5673*	1.1559*	3.3140***	.2409	.0442
Remitter is the spouse of the household head	-.7277***	1.3479*	1.0047	2.8348***	.3144	.2942
Remitter is a son or daughter	-.9183***	1.0852	1.0474*	3.4047***	-.0058	.6759**
Remitter is an other relative	-.6927**	1.2738*	.87990	2.9084***	.2463	.3272
Remitter is a son; daughter or spouse	-1.0872***	1.7625**	1.1304*	3.0490***	.3634	.6155*
Government or semi government employee of the household head	.12811	-1.0813*	-.0807	-.6073**	-.0389	.0356
Private sector employee of the household head	.0533	.1090	-.1733	-.1767	-.0029	.03028
region_1 Western Province	-.0749	.01370	-.3669*	.5317*	-.2689*	.1454
region_2 Central Province	.0547	.2132	.0604	-.9204***	-.0418	.0005
region_3 Southern Province	-.5121**	-1.0794	-.0366	.0340	.1634	.6241*
region_4 North Western Province	-.1862	.9565	.0736	-1.6030**	-.2459	-.0272
region_6 Uva` Province	.1240	1.003**	-.2731	-1.1499***	-.3449***	2.24e-07
Constant	7.027***	-5.5399	3.0752	-6.9869**	-1.2408	-12.1701***
N	175	175	175	175	175	175
Significance	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R ²	0.0227	0.0900	0.0209	0.0826	0.0103	0.0352

*, **, *** Significant at 10, 5 and 1 percent probability level

CONCLUSIONS

The results suggest that female headed households reduce the food expenditure with the receipt of international remittances and male headed households spend more on food with the receipt of internal remittances. As shown by the results, male headed households invest on housing with the receipt of international remittances and spend less budget share on ad hoc items, non-durables, communication and transport etc. with the receipt of internal remittances. The presence of remitter in the household expenditure model indicates that remitters want their money spend more on education and less on food. In particular, when the remitter is the spouse of the household head, the expenditure share allocated to education is greater. This implies that female remitters want spend their money less on food and more on education. Overall findings related to remitters indicate that they want to spend their remittances more on education and less on food.

Overall, the findings of the study are important from policy perspective because they support a growing view in the literature that migration and remittances help in developing the estate household economy by increasing the level of household investment in education, health and housing thereby contributing positively to economic development. It is also really important that gender perspective should be included in order to understand the development impacts.

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