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RESEARCH REPORT

Migration Patterns and the Impact of Internal Remittances on Poverty and Human Capital in Timor-Leste



Tambri Housen, Sandra Hopkins, Jaya Earnest

2012

This Report presents the findings of a Migration and Remittance study that examined the impact of remittance receipts on poverty and human capital the districts of Baucau, Ermera and Viqueque in Timor-Leste. The study findings add to the limited body of knowledge on the impact of internal remittances in post conflict and low-income countries and will inform government departments with the aim of guiding policy formulation that strengthens the link between migration and poverty-reduction at village and household level.

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The lead author of this paper is Tambri Housen, Research Associate and PhD Candidate, Centre for International Health, Curtin University. All queries should be directed to t.housen@curtin.edu.au

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PREFACE AND ACKNOWLEDGEMENTS

This research was initiated after the Centre for International Health was made aware of the lack of Migration and Remittance data in Timor-Leste. The study was conducted in 2010 across the three districts of Baucau, Ermera and Viqueque, using a mixed methods approach. The results of the data analysis, from the three Districts under study, will provides the government of Timor-Leste and partners with important baseline data on current Migration and Remittance flows within Timor.

First and foremost, we would like to thank the 654 households who generously gave of their time and provided the research team with personal details of their household. We would like to thank the Chefe de Aldeia's and Chefe de Suco's who also gave of their time and supported the teams during the fieldwork.

Our special thanks to the survey research team, who worked tirelessly, traveling many hours, accessing remote areas in difficult conditions to administer the research survey and collect data to a high standard. Our thanks also to Mr. Afonso Martins for his invaluable assistance during the fieldwork for helping coordinating the research study.

Prior to the actual collection of data many people provided important contributions. We would like to thank Professor Ross Taplin for his assistance with sampling, Miss Evangelita Pereira for translation and transcription of the questionnaire from English into Tetun, the team from World Bank Dili who provided initial feedback on the survey questionnaire and students of Instituto Catolico Formacao de Professores and Mrs. Ermelinda Monteiro for cross-checking the translation. We would also like to thank Mr. Richard Seymour for the econometric analysis that enabled the exploration of the impact of government solidarity pensions on poverty and household consumption.

It is our hope that the information in this report will have a impact by directing the formation of policy and services aimed at improving the lives of those in rural Timor-Leste.

TAMBRI HOUSEN, JAYA EARNEST AND SANDRA HOPKINS



EXECUTIVE SUMMARY

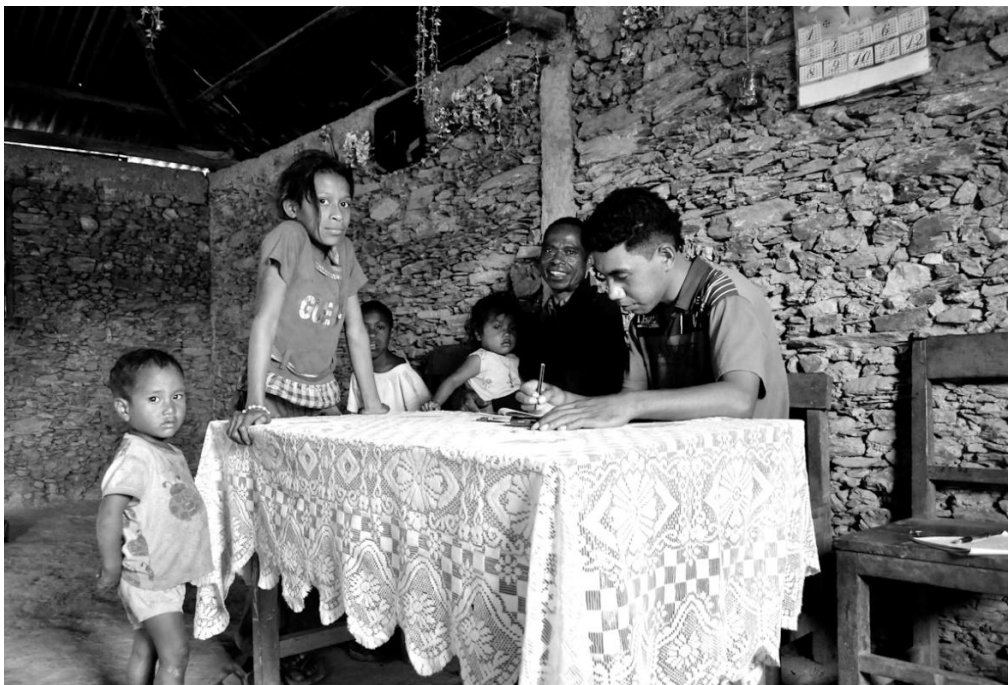
This paper uses data from a 3 District household survey in Timor-Leste to analyze migration patterns and the impact of internal remittance receipts on poverty and human capital. The term ‘remittances’, as defined in this study, refers to money and goods that are transferred to a household by others living outside the community such as migrants, family, friends and/or government solidarity or NGO transfers¹. Multistage sampling methodology was utilized to randomly select 675 Households from 45 randomly selected villages in Baucau, Ermera and Viqueque, the final sample represented a total of 4272 individuals. In addition, focus group discussions and interviews were carried out in each district providing subjective and qualitative insights into the lived experience of migration and remittances in the study areas.

The main findings of the study are:

- The desire for higher education both secondary and tertiary education was found as the predominant reason for migration with human capital benefits such as increased education, and skill development, having the greatest effect on migrant households.
- Migrant households were larger, had more members employed and higher education levels than non-migrant households. This translated into higher incomes, irrespective of remittance receipts.
- Migrant households also experience a larger asset value base, in particular, values of house and cultivable land were higher among migrant households.
- Households participating in migration were also shown to have different spending behaviors than households without migrants. Budget shares to education were substantially higher for households with at least one migrant while budget shares to food and housing were lower.
- Public remittances were shown to be far more common than private remittances with government pension payments accounting for a significant proportion of cash remittance receipts.
- Remittance-receiving households had older household heads, fewer children under the age of 15yrs, more household members over the age of 15 years and a greater number of seasonal and contract workers.
- Gender differences were also found among remittance-receiving households with a significantly higher proportion of female-headed households reporting receipt of remittances.
- The spending behavior of remittance receiving households was shown to be qualitatively different from non-receiving households with marked increases in expenditure on housing, education and health in households receiving formal and/or informal transfers.
- Econometric analysis, specifically examining the impact of government solidarity pensions on household spending showed households receiving the pension spent more at the margin on education at less on ‘conspicuous’ consumption.
- The findings also show that receipt of the government solidarity pensions has a positive impact on poverty incidence, depth and severity.

¹ We adopt a broader definition of remittances in this study as we predicted in the current context of Timor-Leste of high unemployment, lack of employment opportunities and active NGO’s combined with the recent introduction of government solidarity payments, formal transfers may have more of an impact on household income/expenditure than informal transfers.

This migration and internal remittances survey is a first for Timor-Leste. The findings offer new and important information on migration patterns and flows of cash and goods in and out of rural households. It is hoped the government can use these findings to inform policies and strategies for poverty reduction.



MIGRATION PATTERNS AND THE IMPACT OF INTERNAL REMITTANCES ON POVERTY AND HUMAN CAPITAL IN RECIPIENT HOUSEHOLDS IN TIMOR LESTE

I. INTRODUCTION

Increases in rural-urban migration in Timor Leste have occurred since independence with the 2010 population census reporting 44.5% of the population in Dili was born elsewhere. Dili's population has increased by 33.3% since the 2004 national census (NSD, 2011; UNDP, 2005). Push factors encouraging rural urban migration are strong with the UN stating that rural communities are confronted with the following challenges; low human and financial capital, non availability of support institutions, lack of organized product and input markets, inadequate infrastructure – roads, irrigation, electricity, health care, etc, poor reach of extensions services, lack of repair and maintenance services, absence of institutional credit and limited micro finance services, as well as distorted labor markets (United Nations, 2009).

Timor-Leste's returnees have aided urbanization as many seek to develop a livelihood in the capital rather than return to their place of origin, this has been exacerbated by land ownership issues brought about by repeated displacements. The additional impact of international development agencies since independence has also been a driving force in the rapid urbanization of Dili.

This study explores whether rural-urban migration leads to improved livelihoods for those left behind through remittance receipts or if the high unemployment in the urban centers places an increased burden on rural households as they struggle to survive and support unemployed migrants in urban centers with increased costs in food, accommodation and transport.

With Timor-Leste's recent history of population displacement, unemployment and poverty, there is a need to understand rural-urban migration patterns and the impact of remittances on households and communities. There is no published or informal data on internal remittances in Timor-Leste. The overall purpose of the study was to map migration and internal remittance flows in Timor-Leste while analyzing the impact of these remittances on the level, depth and severity of poverty and human capital.

This paper is structured into six sections. The second section introduces the methodology including sampling and data analysis. The third section discusses findings related to migration patterns and characteristics of migrants and migrant households. The fourth section presents the findings related to remittances received and characteristics of remittance receiving households, with a further discussion on remittances sent by households to others. The fifth section analyses the impact of migration/remittances on consumption, looking at budget shares and impact on poverty and inequality sixth presents recommendations for policy derived from the findings of the study and the final conclusions.

II. SUMMARY OF METHODOLOGY

Sample and Sample size

The analysis of migration patterns and impact of remittances presented in this report is based on data from a detailed household survey on migration and remittances conducted from September to November 2010. The surveyed households were located in 45 Aldeia's, across 45 Suco's in the districts of Baucau, Ermera and Viqueque². Sampling followed cross-sectional design common to household surveys, utilising the 2004 Census Enumeration Areas as Primary Sampling Units. Annex 1 presents the sampling frame in detail. Table 1 shows the distribution of the sample across the study districts.

TABLE 1: DISTRICT SAMPLE DISTRIBUTION: NUMBER OF HOUSEHOLDS

| District | Urban | | Rural | | Total Households | Proportion of Total Sample |
|-----------------|-------|--------|-------|---------|------------------|----------------------------|
| <i>Baucau</i> | 15 | (6.9%) | 202 | (93.1%) | 217 | 33.2 |
| <i>Ermera</i> | 15 | (6.8%) | 206 | (93.2%) | 221 | 33.8 |
| <i>Viqueque</i> | 15 | (6.9%) | 201 | (93.1%) | 216 | 33.0 |
| <i>N</i> | 45 | (6.9%) | 60 | (93.1%) | 654 | 100.0 |

Source: Timor Leste Migration and Remittance Survey 2010

Rural/urban distribution is similar across the districts with an overall 93.1% rural representation. The 2010 census reported a 90.4% combined rural representation for these 3 districts (NSD, 2011). The gender distribution was equitable with 49.2% female and 50.8% male. The large majority of households had a male household head (87.2%) with only 12.8% of households headed by a female.

The age distribution is consistent with developing nations and that known for Timor-Leste, a nation that has received much attention for its extremely high fertility rate compared to global standards. Figures 1-4 provide graphical illustrations of the gender, age, education and main activity of the total sample population, which covered 654 households and 4272 individuals.

² Originally, four districts were to be included in the study based on the 2004 Census data on Population Flows. The 4 districts with the greatest recorded out-migration were selected for the study. Baucau, Viqueque, Bobonaro and Ermera were recorded as having an out-migration rate representing 16%, 20%, 15% and 9% of the district populations respectively. The combined out-migration of all 4 districts was 50 902 representing 48% of the national total recorded out-migration from all 13 districts. Nearly 6% of the population of Timor-Leste had migrated out of these 4 districts in 2004. Due to resource limitations on completion of 3 districts, the fourth district Bobonaro had to be cancelled.

FIGURE 1: AGE DISTRIBUTION OF SAMPLE (N=4272)

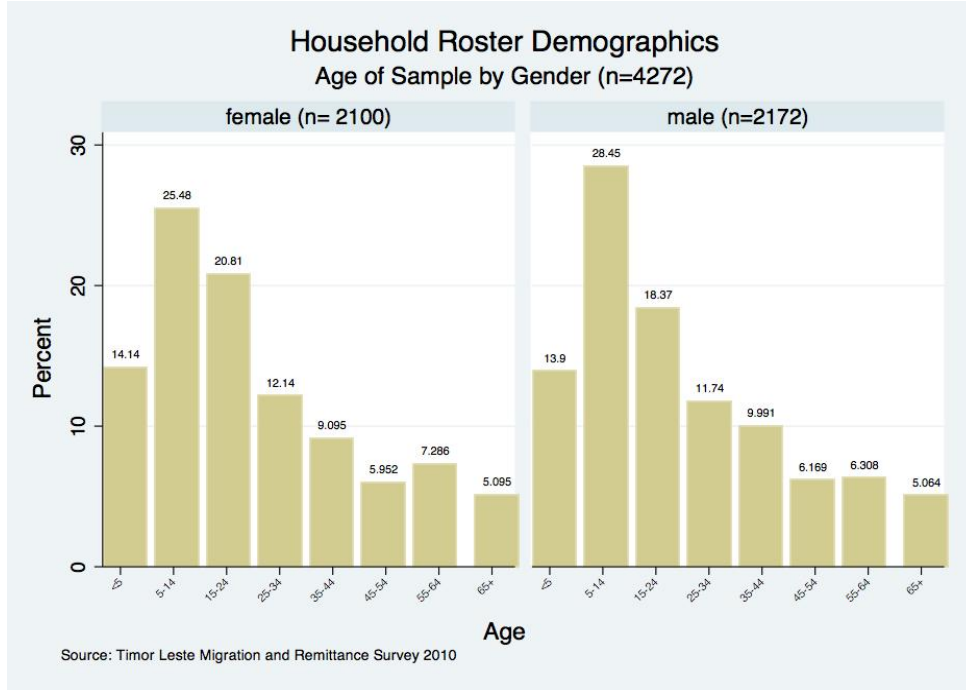


FIGURE 2: MAIN ACTIVITY OF THE SAMPLE (N=4272)

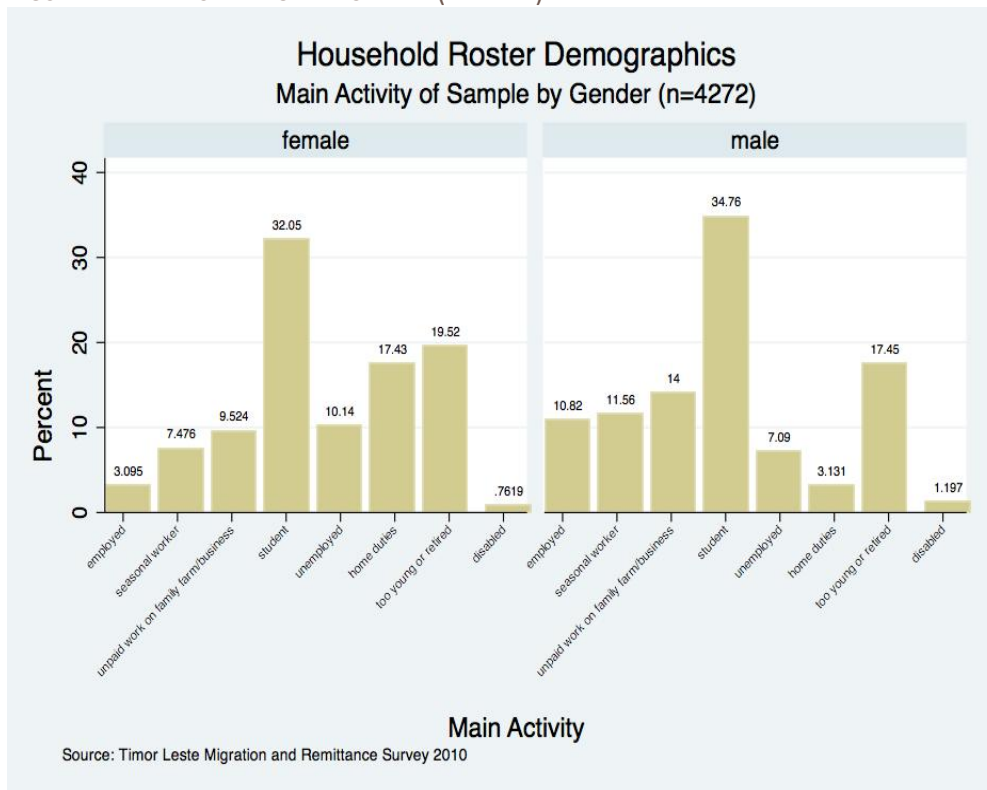
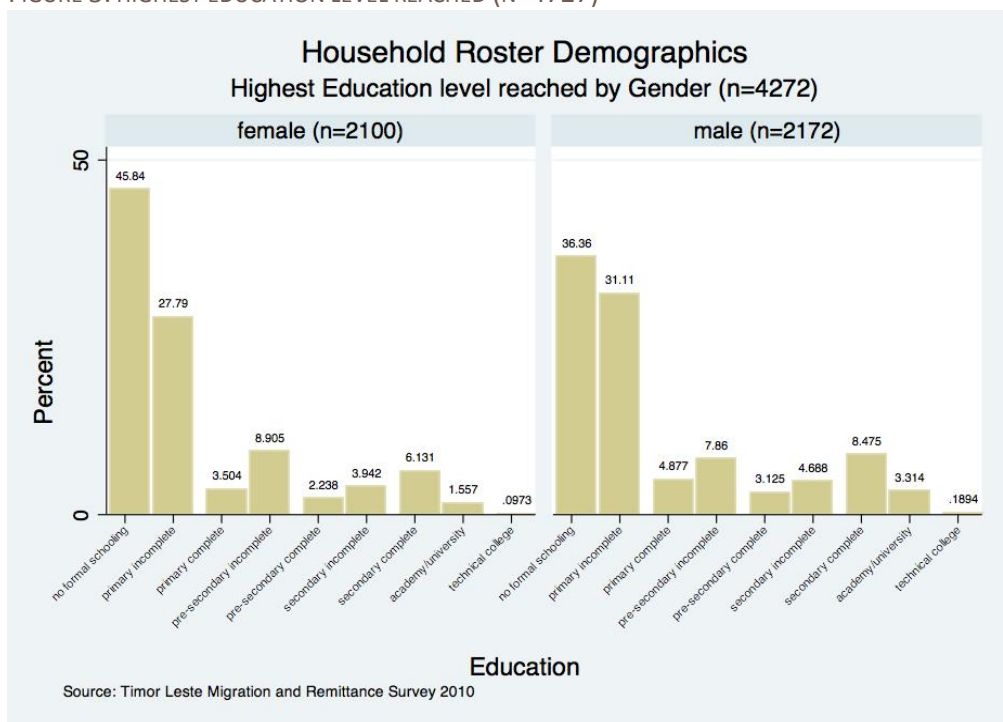


FIGURE 3: HIGHEST EDUCATION LEVEL REACHED (N=4727)



Migration and Remittance Data

The survey collected information at household level via a household questionnaire. Data was collected on the demographics of each household member³, migration⁴ history of the household, information on remittances sent and received by the household, household savings, loans and assets, income and expenditure. Subjective data was also collected on the respondents perception of household well-being, how migration has influenced household well-being, perception of the current economic climate in general and of the household. This subjective data provided important insight into the perceptions of households, complementing the quantitative results.

It is important to clarify that the term 'remittance' is defined in this study as all in-kind and cash transfers that the household has received from any source that is not a payment for goods or services provided by the household. Remittances included both private and public transfers, which is significant in the context of Timor-Leste where NGOs are active in all districts providing both food parcels and goods. The government solidarity payment (pension) provided to over 60yr olds was found to make up a significant share of remittances. In some analysis the solidarity payment has been removed from remittance totals where it was necessary to examine informal transfers more closely. Where this has occurred it is clearly stated.

The questionnaire collected detailed income/expenditure data recording household income from agricultural and non-agricultural production, wages and salary from additional work, informal and formal remittance transfers, income from house/property rental and

³ A household member was defined as a person who eats and sleeps in the household for at least 3 months of the past 12 months, with the exception of babies born in the past 3 months and person who have moved to live permanently with the household in the past 3 months, with the principle that each person belongs to one household only.

⁴ A Migrant is defined as a person who has left the household to live somewhere else, spending more than 3 months away from the household in the past 12 months.

other sources. Details on consumption/expenditure were collected using a 37-item food and non-food expenditure list. Non-food expenditures included utilities, durables, education, health, social events, transport, housing and commodities. Annex 2 provides a more in-depth explanation of the development of the data collection tool with Annex 3 providing a detailed breakdown of consumption categories.

Fieldwork

A team of 11 students were recruited from universities in Dili. During a week of training in Dili the students were selected for 3 research teams. The teams consisted of one supervisor and 2 enumerators with both male and female representation in each team. An extra enumerator floated between teams, joining the team that was traveling the greatest distance, the additional enumerator relieved time pressures to complete required interviews. A research assistant worked with the researcher providing assistance in quality control, interviews and focus group discussions. A pilot test was conducted in Dili prior to commencement of fieldwork to identify any weaknesses in the data collection instrument and also to provide the team with valuable experience and feedback on the interview process. The supervisors, who were required to check all surveys prior to leaving the village and clarify any missing data, maintained quality control. The questionnaires were again checked at the end of each day by the researcher and feedback to the teams provided before the next day of interviews.

Data Processing

Data was entered in to STATA, cleaned and cross-checked for errors. Household data from a total of 654 Households was used in the analysis. This report presents the results of descriptive analysis providing an overview of migration patterns and remittance flows in and out of households. Regression analysis of specific impacts will be presented in peer reviewed journal publications following this report.



III I. FINDINGS - MIGRATION

Households with at least one migrant represented 45% of the study population; nearly 93% of migrants had migrated internally

Migration Patterns

Of the overall sample of 654 households, 45.0% reported having at least one migrant, with an average of 1.8 migrants per migrant household. The majority of migration, 92.6% occurred internally, with just 7.4% migrating internationally.

“Only the [wealthy] can afford to send their children overseas, for us, even studying in Dili is already difficult... the state secretary for youth provides training to youth preparing them to work overseas... [this training] is still centralized, thus it is difficult for people in districts to attend these trainings.” 26 year old from Viqueque

The migration data included all household members that had migrated regardless of timeframe. Thus, these figures represent lifetime migration from a household. Nearly 40% of migrants (n=203) had come from households in Baucau district with a further 32% (n=165) and 28% (n=147) originating in Viqueque and Ermera, respectively. As evident from Table 3, 87% of migrants who had migrated to a different district had moved to Dili. This strong rural/urban migration pattern is expected given the physical and economic context.

With most upper secondary schools located in larger centers and limited transport infrastructure, it is common for young people to move to live with relatives or friends to be closer to senior high schools or other training centers. For university education, students must relocate to Dili, the nation’s capital. During focus group interviews in more remote villages the problem of access to schooling was highlighted with one village stating that the primary school was a 6hr round trip walk from the village. For those that have migrant networks, it is not uncommon for them to send younger children to live with family or friends for primary education.

“The nearest primary school is 3 hrs walk up the mountain. Our parents send us and think we attend our classes but we play in the forest all day and come back in the evening. It is too far for us to walk and then focus on our studies...many in the village have done this, our education in this village is very poor.” 17 year old from a remote village in Ermera district.

Table 2 presents descriptive statistics of non-migrant and migrant households. The average annual household income was US\$1073.33 with the average annual income of migrant households (US\$1554.44) significantly higher than that of non-migrant households (US\$681.91). Per capita income is also significantly higher for migrant households. Both migrant and non-migrant households received remittances⁵, these remittances accounted for 26.8% of total household income for migrant households and 27.8% of total household income for non-migrant households. Of the 294 Households with at least one migrant only 18.7% received a cash or in-kind remittance from a migrant. Interestingly, 28.6% of migrant households reported receiving the government solidarity pension. Less than 5% (4.4%) of migrant households receiving both the pension and migrant remittances, providing some

⁵ Remittances here are classified under the broader definition including informal and formal transfers.

TABLE 2: DESCRIPTIVE STATISTICS OF MIGRANT AND NON-MIGRANT HOUSEHOLDS

| Variable | All Households (n=652) | Non-Migrant Households (n=360) | Migrant Households (n=292) | Difference |
|---|---------------------------|-----------------------------------|-------------------------------|--------------------|
| <i>Average Total Income (\$US)</i> | 1073.33 | 681.91 | 1554.44 | -872.54 (-3.46)*** |
| <i>Average Home Income (\$US)</i> | 908.42 | 488.30 | 1427.44 | -938.92 (-3.27)*** |
| <i>Average Remittance Income⁶ (\$US)</i> | 290.77 | 189.70 | 415.94 | -226.24 (-1.81) |
| <i>Average Per capita Income (\$US)</i> | 196.54 | 146.64 | 257.45 | -110.81 (-3.08)** |
| <i>Average number of employed persons</i> | 0.45 | 0.39 | 0.52 | -0.13 (-2.20)* |
| <i>Average number of seasonal/contract workers</i> | 0.63 | 0.59 | 0.68 | -0.89 (-1.10) |
| <i>Household Size</i> | 6.51 | 6.26 | 6.82 | -0.56 (-2.61)** |
| <i>Gender of Household Head</i> | 1.87 | 1.88 | 1.86 | 0.02 (-0.53) |
| % Males | 87.2% | 87.8% | 87.2% | |
| % Females | 12.8% | 12.2% | 12.8% | |
| <i>Average Age of Household Head</i> | 35-44 | 35-44 | 45-54 | -0.54 (5.14)*** |
| <i>Average number of dependents</i> | 3.00 | 2.98 | 3.03 | -0.28 (-0.44) |
| <i>Average number of children under 15yrs</i> | 2.67 | 2.68 | 2.66 | 0.02 (0.13) |
| <i>Average number over 15yrs</i> | 3.85 | 3.57 | 4.20 | -1.46 (4.29)*** |
| <i>Average number of males over 15yrs</i> | 1.91 | 1.78 | 2.09 | -0.31 (3.26)** |
| <i>Average number of females over 15yrs</i> | 1.94 | 1.79 | 2.11 | -0.32 (3.53)*** |
| <i>Average number over 65yrs</i> | 0.33 | 0.30 | 0.37 | -0.65 (-1.31) |
| <i>Cultivable land (Ha)</i> | 2.67 | 2.19 | 2.50 | -0.31 (-0.92) |
| <i>Average number of Migrants</i> | 0.79 | | 1.75 | |
| <i>Members over 15yrs Completed Primary school education</i> | 0.21 | 0.19 | 0.23 | -0.04 (1.06) |
| <i>Members over 15yrs completed Pre-secondary education</i> | 0.17 | 0.16 | 0.18 | -0.02 (0.80) |
| <i>Members over 15yrs completed Secondary school education</i> | 0.46 | 0.35 | 0.60 | -0.25 (4.05)*** |
| <i>Members over 15yrs with Academy/University education</i> | 0.15 | 0.01 | 0.25 | -0.24 (4.60)*** |
| <i>Members over 15yrs with Technical college education</i> | 0.01 | 0.01 | 0.01 | 0.0 (0.25) |
| <i>Average education level completed of Household Head</i> | Primary incomplete | Primary incomplete | Primary incomplete | -0.18 (-1.05) |
| <i>Nearest transport road to the Aldeia (walking minutes)</i> | 31.62 | 30.03 | 33.56 | -3.53 (-1.02) |
| <i>Nearest market to the Aldeia (walking minutes)</i> | 74.43 | 70.17 | 79.66 | -9.49 (2.23)* |
| <i>Nearest urban centre to the Aldeia (walking minutes)</i> | 109.29 | 116.33 | 100.66 | 15.67 (2.42)* |
| <i>Nearest Primary school to the Aldeia (walking minutes)</i> | 36.97 | 38.89 | 34.66 | 4.19 (1.30) |
| <i>Nearest Secondary school to the Aldeia (walking minutes)</i> | 92.09 | 96.97 | 86.12 | 10.85 (2.16)* |

Source: Timor Leste Migration and Remittance Survey 2010

NB: 2 extreme outliers were excluded (1 from Baucau and 1 from Ermera) as they were shown to significantly drive the means upward. t-statistics are in Parentheses * Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level.

⁶ Remittance income is inclusive of all in-kind and monetary transfers including both formal and informal.

indication that government pensions could have a ‘crowding out’⁷ effect on migrant remittances.

Human resource and capital outcomes are higher for migrant households with a higher number of both employed persons and seasonal/contract workers in households with at least one migrant. The average number of household members with higher education both secondary and tertiary is also significantly higher for migrant households. Households reporting at least one migrant have on average larger households, older household heads and a greater number of household members over the age of 15yrs.

Migrant Characteristics

Education was the main reason for migration, with 60% of migrants between 15-24yrs of age

Other migration studies⁸ have shown a higher tendency toward male migration; however, our study showed that cultural restrictions on women migrating within their country do not seem to be strong in Timor-Leste, with 44.3% of all internal migrants being female. Conversely there was a marked gender difference among international migrants who were predominantly male (80%).

Children of the household head made up the largest proportion of migrants (73%) with a further 13% being siblings of the household head. The mean level of pre-migration education was 8.4 years with education the primary motivator for migration, cited by 60% of migrants as the main reason for leaving. Figure 4 clearly shows the age distribution of migrants with nearly 60% falling in the higher education age bracket (15-24yrs).

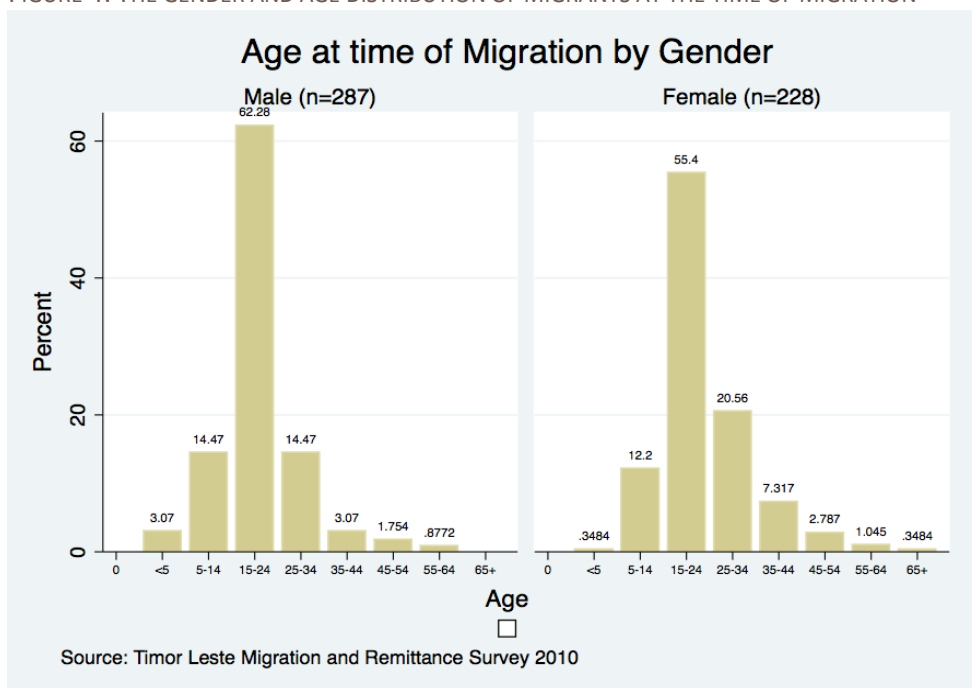
Gender differences were again noted when examining the reason for migration (Table 3), while the percentage of males and females stating education as the primary reason for migration was the same (60%), 21% of males compared to 6.7% of females reported employment related reasons for migration and 18.9% of females compared to 4.6% of males cited ‘accompanying spouse’ as the main reason for migration.

“When we talk about migration [it is] dependent on cultural practices. The women will have to leave the parents to stay with her husband.... in practice it is mostly the men who migrate from one place to another to find jobs.” 26 year old from Baucau district.

⁷ The “crowding out effect” is described in economic literature as the propensity for migrants to decrease or cease sending remittances as a direct result of increased government transfers such as introduction of pensions. In a study examining the effect of transfers on household expenditure patterns and poverty in South Africa the crowding out effect was found only in households below the poverty line. (Pushkar Maitra & Ray, 2003)

⁸ Survey data from four counties in rural China showed a male migration rate 40% higher than the female migration rate (Du, Park, & Wang, 2005) A study of migration patterns in rural Bangladesh stated that religious beliefs placed restrictions on the migration of women for labor purposes (Deshingkar & Farrington, 2006).

FIGURE 4: THE GENDER AND AGE DISTRIBUTION OF MIGRANTS AT THE TIME OF MIGRATION



Impact of Migration on Origin Households

Human capital gains are the most commonly reported affect of migration on the household of origin

When examining migration patterns and impact, it is important to also examine the perceived impact of migration on the household of origin. Not all households with a migrant will benefit from a remittance. This is especially relevant in the context of Timor-Leste where the primary reason for migration is education. Subjective data from the household survey portrayed a perception among respondents that the sending of a migrant had had a positive impact on the household. Most households reported multiple effects of migration with nearly 25% of migrant households experiencing a mix of positive and negative effects. Over 80% of households with at least one migrant felt migration had a largely positive impact on their household, 16.3% reported no effect and 2.4% reported migration was solely a negative experience.

Increases in human resource and capital outcomes were felt to be the greatest effect of migration on a household with a large majority reporting increases in education and skill of the migrant (48.6% and 41.8%, respectively) and increased education of the household in general (43.5%). Costs associated with migration were seen as a negative effect (16.0%) along with increased workload of those left behind (13.6%).

“I think when we talk about life, there is always conflict, it is inevitable. It depends on how we make [a] decision, now we reach [an] agreement. Surely when the husband migrates to find [a] job, the wife will have to look after the children herself, there is always difficulty, but that is how to respond to the needs, if we continue to live here, there will not be a change in our lives. If we want to improve our lives we need to migrate.” 22 year old from Viqueque district.

TABLE 3: CHARACTERISTICS OF OUT-MIGRANTS BY STUDY DISTRICTS

| Variable | Baucau (n=203) | Ermera (n=147) | Viqueque (n=165) | Total (n=515) |
|---|-------------------|-------------------|---------------------|------------------|
| Proportion of Migrants from each district | 39.4 | 28.5 | 32.0 | 100.0 |
| Gender of Migrants (%) | | | | |
| <i>Female</i> | 45.8 | 44.9 | 41.8 | 44.3 |
| <i>Male</i> | 54.2 | 55.1 | 58.2 | 55.7 |
| Gender of Internal Migrants (n=185) | (n=185) | (n=138) | (n=154) | (n=477) |
| <i>Female</i> | 48.11 | 45.65 | 42.21 | 45.49 |
| <i>Male</i> | 51.89 | 54.35 | 57.79 | 54.51 |
| Gender of International Migrants (n=18) | (n=18) | (n=9) | (n=11) | (n=38) |
| <i>Female</i> | 22.22 | 33.33 | 36.36 | 20.95 |
| <i>Male</i> | 77.78 | 66.67 | 63.64 | 79.05 |
| Age at time of Migration (%) | | | | |
| (5-14yrs) | 8.4 | 10.9 | 21.2 | 13.2 |
| (15-24yrs) | 60.1 | 63.3 | 52.1 | 58.5 |
| (25-34yrs) | 18.7 | 15.0 | 19.4 | 17.9 |
| Pre-Migration Education (yrs) | 8.65 (0.51) | 8.36 (0.31) | 8.16 (0.32) | 8.41 (0.24) |
| Pre-Migration Activity (%) | | | | |
| <i>Employed</i> | 14.3 | 4.1 | 9.2 | 9.7 |
| <i>Contract work</i> | 12.3 | 8.2 | 3.7 | 8.4 |
| <i>Student</i> | 60.1 | 69.4 | 73.2 | 66.9 |
| <i>Unemployed</i> | 4.9 | 8.8 | 10.4 | 7.8 |
| Family Status (%) | | | | |
| <i>HHH</i> | 4.4 | 0.7 | 1.2 | 2.3 |
| <i>Child of HHH</i> | 74.9 | 74.8 | 68.5 | 72.8 |
| <i>Sibling of HHH</i> | 11.8 | 13.6 | 15.2 | 13.4 |
| <i>Other relative</i> | 3.0 | 6.2 | 10.9 | 6.4 |
| Destination (%) | | | | |
| <i>Same sub-district</i> | 15.3 | 15.7 | 11.5 | 17.3 |
| <i>Same District different sub-district</i> | 23.2 | 15.7 | 11.5 | 17.3 |
| <i>Different District</i> | 52.7 | 59.2 | 62.4 | 57.7 |
| <i>Dili</i> | *43.8 | *50.3 | *58.2 | *50.3 |
| <i>Outside Timor-Leste</i> | 8.9 | 6.1 | 6.7 | 7.4 |
| Reason for Migration (%) | | | | |
| <i>Education</i> | 53.7 | 61.8 | 67.5 | 60.4 |
| <i>Seeking Employment</i> | 20.7 | 11.8 | 11.0 | 15.1 |
| <i>Accompany Spouse</i> | 14.3 | 8.3 | 9.2 | 11.0 |
| Visits home | 5.17 (0.58) | 3.57 (0.32) | 3.04 (0.34) | 4.02 (0.27) |

Source: Timor-Leste Migration and Remittance Survey 2010

Results expressed as a proportion of total migrant population except for variables Pre-Migration education and Visits home which are expressed as a mean with standard deviations in parenthesis.

*Migrant destination was examined looking at Dili specifically. Nearly 50% of all migrants moved to the nations capital.

Participation in migration enabled households to increase the value of their assets

Households reported both positive and negative effects of migration on household assets. Nearly 33% said that migration had enabled an increase of household assets while 26% reported the selling of household assets to fund migration. Table 5 provides a comparison of asset value for both migrant and non-migrant households. Migrant households possess

TABLE 4: REPORTED EFFECT OF MIGRATION ON HOUSEHOLD OF ORIGIN

| Effect of Migration on the Household | Households with at least 1 Migrant (n = 294) | Proportion of Migrant Households |
|---|--|----------------------------------|
| <i>Increased Income of Household</i> | 106 | 36.1% |
| <i>Increased education of Household</i> | 128 | 43.5% |
| <i>Increased education of Migrant</i> | 143 | 48.6% |
| <i>Increased skills of Migrant</i> | 123 | 41.8% |
| <i>Lower cost of living as a result of absence of migrant</i> | 30 | 10.2% |
| <i>More leisure time</i> | 2 | 0.7% |
| <i>No effect</i> | 48 | 16.3% |
| <i>Forced to spend money on migration</i> | 47 | 16.0% |
| <i>Household members work longer and harder</i> | 40 | 13.6% |
| <i>Emotional stress as a result of family separation</i> | 8 | 2.7% |
| <i>Lack of parents care</i> | 2 | 0.7% |
| <i>Forced to hire labor</i> | 0 | 0.0% |
| <i>Other</i> | 5 | 4.4% |

Source: Timor-Leste Migration and Remittance Survey 2010

NB: Respondents were encouraged to provide multiple answers, if relevant, therefore percentages reflect the proportion of households with at least 1 migrant who indicated the particular effect on their household.

significantly higher house and cultivable land value, this finding could indicate that migrant households have more resources which enable them to take the risks associated with sending a migrant or such a finding could indicate that migration and resultant remittances enable households to increase investment in housing and land⁹.

“If my brother did not go, our live[s] would not have changed as it is now, because of his support now we can fix our house. Before he went, we had lived in a house with [a] roof made of coconut leaves” 40 year old from a village in Baucau district.

Households with at least one migrant are also more likely to own a motorcycle, television, satellite dish and mobile telephone.



⁹ Studies in Guatemala and the Philippines showed households receiving internal remittances spent more at the margin on housing. (Adams Jr & Cuecuecha, 2010; Quisumbing & McNiven, 2010)

TABLE 5: AVERAGE VALUE OF ASSETS (US\$ 2010)

| Asset | All Households (n=654) | Non-Migrant Households (n=294) | Migrant Households (n=360) | Difference Between Non-Migrant and Migrant Households |
|--------------------------|---------------------------|--------------------------------------|----------------------------------|---|
| <i>House</i> | 1561.54 | 1225.15 | 1996.55 | -771.40 (-3.32)*** |
| <i>Cultivable Land</i> | 7027.40 | 4312.29 | 10 938.98 | -6 626.69 (-3.96)*** |
| <i>Livestock</i> | 1520.88 | 1025.50 | 2154.18 | -1 128.68 (-1.84) |
| <i>Car</i> | 858.99 | 32.24 | 1881.79 | -1 849.55 (-1.91) |
| <i>Motorcycle</i> | 110.07 | 67.40 | 162.71 | -95.32 (-1.98)* |
| <i>Washing Machine</i> | 0.23 | 0.0 | 0.51 | -0.51 (1.11) |
| <i>Television</i> | 19.72 | 10.7 | 30.81 | -20.11 (-3.27)** |
| <i>TV Satellite Dish</i> | 8.98 | 4.88 | 14.03 | -9.15 (2.94)** |
| <i>Mobile Telephone</i> | 43.99 | 28.74 | 62.81 | -16.52 (-2.06)* |
| <i>Radio</i> | 13.97 | 11.84 | 16.59 | -4.74 (-1.26) |
| <i>Jewelry</i> | 106.37 | 38.13 | 191.20 | -153.07 (0.97) |
| <i>Other Assets</i> | 27.01 | 49.17 | 0.0 | 49.17 (1.06) |

Source: Timor Leste Migration and Remittance Survey 2010

t-statistics are in Parentheses *Significant at the 0.05 level. **Significant at the 0.01 level. ***Significant at the 0.001 level.

Conclusion

Findings have shown that the desire for more education is the predominant reason for migration with human capital benefits such as increased education and skill base, having the greatest effect on migrant households. Migrant households are larger, have more workers and higher education levels than non-migrant households. This translates into higher incomes, irrespective of remittance receipts. Migrant households also experience a larger asset value base, in particular values of house and cultivable land are higher among migrant households indicating it is households with greater available resources that are sending migrants.

It is important to realize that many migrant households do not receive remittances with less than 20% receiving remittances from household migrants. The most common cash transfer received by migrant households is the government pension. Crowding out of private transfers among poor households receiving government pensions has been reported in the literature¹⁰, this may be occurring in Timor-Leste especially with low wages and high cost of living in migrant destinations.

“Life in Dili is difficult because everything is about money. So, for example if the person is just an ordinary labor[er] whose monthly salary is around USD85.00, that person will find it difficult to send some money home and some will have to be used to sustain his life in Dili.” 26 year old from Viqueque.

¹⁰ In a study conducted in South Africa on the effects of public and private transfers on household expenditure, Pushkar *et al.* (2003) found the “crowding out” of private transfers occurred only among the poorest households.

IV. FINDINGS – REMITTANCES

Remittances Received

The receipt of cash and/or in-kind remittances was reported by nearly 50% of households

Remittances received included both internal and international transfers and were received by 49.2% of the study population. Both migrant and non-migrant households received remittances; 57.8% of households with at least one migrant and 42.2% of households with no migrant reported receiving a remittance in the 12 months preceding survey interview. Of the remittance-receiving households (n=307), 73.3% received a cash remittance, 44.7% received an in-kind remittance and nearly 23% received both. As both migrant and non-migrant households received remittances, data were analyzed by comparing the differences between remittance receiving and non-receiving households with the focus on origin of income flows in preference to the presence or absence of a migrant.

Remittances are defined according to the broad definition previously mentioned including both informal and formal transfers. On finding government solidarity payments to over 60yr olds made up a significant proportion of household remittances it was decided in some instances to separate the analysis of remittances into two categories, with and without government pension payments. Limitations in data¹¹ prevented further breakdown of the value of in-kind remittances by source. It is important to note that where Total remittances values are given 'excluding Pension' they are inclusive of all other non-pension government solidarity and NGO payments.

The government of Timor-Leste has been providing over 60yr olds with US\$360 per annum since mid-2008, given as a lump sum payment once a year. Cash transfers are also provided for veterans (Falintil soldiers who fought for independence) and widows of veterans in addition to vulnerable households including disabled and female-headed households. This pension has made a significant contribution to household income/consumption with over 27% of study households receiving the government pension¹². The impact of the pension will be examined in forthcoming sections. In addition to the government pension, government solidarity payments also include the unconditional cash transfers initiated to fund the return of internally-displaced people with payments received in late 2009 for assets lost during the 2006 crisis. The survey reported information on any transfers received in the 12 months preceding interview and therefore would capture any solidarity payments administered between September-November 2009 and September-November 2010.

Cash remittances received

Transfers sent by the Timorese government/NGO's account for almost 80% of all cash remittances received by households

¹¹ One shortfall in the survey was that total value of in-kind remittances was pooled into one question, making it impossible to extrapolate value by sender. It was therefore not possible to separate the value of in-kind remittances from public and private sources.

¹² Individuals entitled to benefit from the scheme need to be a citizen of Timor-Leste, have been residing within the national territory for at least 2 (two) years before the date of submission of application for the benefit, and at least 60 (sixty) years of age.

Table 6 provides the average values of remittances received by source and type. Nearly 80% of all cash remittances received by households were provided by government solidarity payments or NGO's. Only 16.6% of cash remittances were received from current or former household members and 4% received from other relatives.

“Migrants often have many extra's in their house they are supporting, so although they may not be sending money back they are supporting many relatives.... one of my teachers has 6 children he is educating that are staying with him, he pays for their food and education.” Key informant from Baucau

Of the households that reported receiving cash remittances from migrants, males sent 72% of migrant transfers, with nearly 50% of senders between 25-34yrs of age. Migrants sent cash remittances an average of 3.6 times in the 12 months preceding survey with an annual average value of USD150.85. Over 50% of migrant transfers came from Dili with a member from the household responsible for collecting the money and bringing it back to the household.

TABLE 6: MEAN ANNUAL VALUE OF CASH REMITTANCES RECEIVED BY SOURCE AND TYPE (\$US 2010)

| Type of Transfer | Total Sample | Baucau | Ermera | Viqueque |
|---|----------------------|----------------|-----------------|------------------|
| <i>Average Total Annual Value of Cash Remittance (n=283)</i> | 464.98 (46.77) | 395.34 (41.58) | 510.46 (112.57) | 487.64 (69.80) |
| <i>Average Annual Cash Remittance by Source</i> | | | | |
| <i>Migrant (n=47)</i> | 150.85 (27.12) | 152.64 (31.42) | 177.00 (77.20) | 175.50 (61.33) |
| <i>Other relative (n=12)</i> | 69.00 (15.09) | 120.00 (60.00) | 56.67 (14.98) | 55.00 (5.00) |
| <i>Solidarity/NGO (n=224)</i> | 446.17 (46.62) | 436.03 (47.63) | 492.44 (124.20) | 421.50 (59.18) |
| MEAN ANNUAL VALUE OF ALL REMITTANCES RECEIVED BY REMITTANCE RECEIVING HOUSEHOLDS (\$US 2010) | | | | |
| (N=320) | | | | |
| Type of Transfer | Total Sample (n=320) | Baucau (n=98) | Ermera (n=108) | Viqueque (n=114) |
| <i>Average Annual Cash Remittance</i> | 359.94 (35.90) | 346.13 (34.76) | 324.73 (80.51) | 405.44 (58.54) |
| <i>Average Annual In-Kind Remittance</i> | 62.41 (10.55) | 29.88 (10.52) | 84.29 (22.80) | 72.81 (18.87) |
| <i>Average Annual Total Remittance Received</i> | 422.35 (35.26) | 376.01 (36.29) | 409.02 (86.52) | 478.25 (47.34) |
| <i>Average Annual Total Remittance (excluding Pension)</i> | 163.24 (34.27) | 117.41 (35.22) | 222.33 (84.34) | 147.84 (45.04) |

Source: Timor Leste Migration and Remittance Survey 2010

NB: 2 extreme outliers were excluded (1 from Baucau and 1 from Ermera) as they were shown to significantly drive the means upward. Standard deviations are in parenthesis.

Differences were highlighted between the 3 study districts with households in Baucau receiving 31% of cash remittances from household migrants and 66% from Solidarity/NGO payments, where households in Ermera and Viqueque received a much smaller proportion of cash remittances from household migrants (12% and 9% respectively) and a much larger proportion from NGO/Solidarity payments (80% and 89%, respectively). Households in Ermera reported a higher proportion of cash remittances from 'other relatives' (over 7%) compared to Baucau (3.4%) and Viqueque (1.8%). The strong practice of cultural celebrations in Ermera where family members are required to contribute may offer some explanation to why remittances from 'other relatives' are more prevalent in this district.

“We, in Ermera, are recognized for spending much money on cultural celebrations than other districts. We can receive US\$4000 or US\$5000 for our coffee harvest and when it is received much is spent on cultural celebrations..... they [relatives] are expected to also contribute.” 28 year old from Ermera

The large majority of cash remittances were sent to either the household head (63.4%) or the spouse of the household head (26.4%). When asked which member of the household decided on how the cash remittances was spent 54.2% of households said the household head and 36.9% of households reported the spouse of the household head. A further 10% of cash remittances were received by a member of the household classified as 'other relative', these were over 65yrs and therefore most likely recipients of the government pension. Interestingly they were also reported as the decision maker, indicating that families tend to allow the recipient of the remittance to make the decision of how it is spent.

In-kind remittances received

Food was the predominant in-kind transfer, reported by 67.7% of households receiving in-kind remittances.

In contrast to cash transfers, nearly 40% of in-kind transfers are received from migrants of the household with just over 50% received from government solidarity or NGO's¹³. Again it is households in Baucau that receive a much greater proportion of in-kind remittances from household migrants (69.2%) and a lesser proportion from government solidarity or NGO's (15.4%). This is the reversal of what is occurring in Ermera and Viqueque where a lesser proportion of in-kind remittances are sent by household migrants (25.4% and 31.3%, respectively) and a much greater proportion are sent by government solidarity and NGO's (61.9% and 62.5%, respectively).

Food was the predominant in-kind transfer received, 76.9% of in-kind transfers in Baucau included food items and over 69.8% and 60.0% of in-kind transfers included food in Ermera and Viqueque, respectively.

Remittances Receiving Households

Remittances accounted for 40% of total household income for remittance receiving households.

Table 7 presents descriptive statistics of remittance receiving and non-receiving households. The average household income was US\$1073.33 with the income of remittance receiving households (US\$1094.16) higher than that of non-remittance receiving households (US\$1052.87). Remittances accounted for nearly 40% (39.8%) of total household income for remittance receiving households.

Human resource and capital outcomes are higher for remittance receiving households with a greater number of both employed persons and seasonal/contract workers in remittance receiving households. The number of seasonal/contract workers increased by over 24% when a household received a remittance, this increase was found to be statistically significant. An interesting finding was that households receiving remittances generally had a household head with significantly lower education when compared with non-receiving households. No significant difference was found among other household education outcomes for remittance receiving and no-receiving households.

¹³ Due to the data limitations previously mentioned (footnote 11) we are unable to separate value of in-kind remittances by source.

TABLE 7: DESCRIPTIVE STATISTICS OF REMITTANCE RECEIVING AND NON-RECEIVING HOUSEHOLDS

| Variable | All Households (n=652) | Non-Remittance Receiving HH (n=347) | RRHH (inc Pension) (n=305) | RRHH (exc Pension) (n=173) | Difference (RRHH inc Pension v's NRRHH) | Difference (RRHH exc Pension v's NRRHH) |
|---|---------------------------|---|----------------------------------|----------------------------------|---|---|
| <i>Average Total Income (\$US)</i> | 1073.34 | 1052.87 | 1094.16 | 845.92 | -41.29 (-0.17) | 206.95 (0.84) |
| <i>Average Home Income (\$US)</i> | 908.42 | 1052.87 | 690.06 | 688.18 | 362.81 (1.47) | 364.69 (1.44) |
| <i>Average Remittance Income¹⁴ (\$US)</i> | 290.77 | - | 435.23 | 178.25 | - | - |
| <i>Average Per capita Income (\$US)</i> | 196.54 | 171.87 | 199.77 | 141.98 | -27.90 (-0.89) | 29.31 (0.93) |
| <i>Average number of employed persons</i> | 0.45 | 0.42 | 0.47 | 0.51 | -0.052 (-0.89) | -0.90 (-1.27) |
| <i>Average number of seasonal/contract workers</i> | 0.63 | 0.56 | 0.71 | 0.72 | -0.16 (-1.97)* | -0.16 (-2.26)* |
| <i>Household Size</i> | 6.51 | 6.47 | 6.54 | 6.60 | -0.07 (-0.34) | -0.05 (-0.20) |
| <i>Gender of Household Head</i> | 1.87 | 1.91 | 1.83 | 1.84 | 0.08 (2.96)** | 0.07 (2.35)* |
| % males | 87.2% | 90.8% | 83.1% | 83.8% | | |
| % females | 12.8% | 9.2% | 16.9% | 16.2% | | |
| <i>Average age of Household Head</i> | 35-44 | 35-44 | 45-54 | 45-54 | -0.67 (-6.51)*** | -0.46 (-3.96)*** |
| <i>Average number of dependents</i> | 3.00 | 3.03 | 2.97 | 2.90 | 0.61 (0.39) | 0.13 (0.70) |
| <i>Average number of children under 15yrs</i> | 2.67 | 2.90 | 2.41 | 2.59 | 0.49 (3.13)** | 0.31 (1.67) |
| <i>Average number over 15yrs</i> | 3.85 | 3.65 | 4.08 | 4.01 | -0.42(-2.90)** | -0.35 (-2.01)* |
| <i>Average number of males over 15yrs</i> | 1.91 | 1.84 | 2.00 | 2.00 | -0.61 (-0.69) | -0.56 (-1.36) |
| <i>Average number of females over 15yrs</i> | 1.94 | 1.82 | 2.07 | 2.00 | -0.26 (-2.88)** | -0.18 (-1.71) |
| <i>Average number over 65yrs</i> | 0.33 | 0.13 | 0.56 | 0.31 | -0.43 (-0.93)*** | -0.18 (-4.03)* |
| <i>Cultivable land (Ha)</i> | 2.67 | 2.05 | 2.66 | 3.11 | -0.61 (-1.84) | -1.07 (-2.50)* |
| <i>Average number of Migrants</i> | 0.79 | 0.60 | 0.99 | 1.13 | -0.39 (-4.46)*** | -0.52 (-5.16)*** |
| <i>Members over 15yrs Completed Primary school education</i> | 0.21 | 0.23 | 0.18 | 0.21 | 0.05 (1.37) | 0.02 (0.42) |
| <i>Members over 15yrs completed Pre-secondary education</i> | 0.17 | 0.20 | 0.13 | 0.13 | 0.07 (2.04)* | 0.07 (1.76) |
| <i>Members over 15yrs completed Secondary school education</i> | 0.46 | 0.41 | 0.53 | 0.58 | -0.12 (-1.94) | -0.17 (-2.29)* |
| <i>Members over 15yrs with Academy/University education</i> | 0.15 | 0.18 | 0.12 | 0.13 | 0.55 (1.44) | 0.05 (1.08) |
| <i>Members over 15yrs with Technical college education</i> | 0.01 | 0.01 | 0.01 | 0.01 | -0.00 (-0.15) | 0.00 (0.35) |
| <i>Average education level completed of Household Head</i> | Primary incomplete | Primary incomplete | Primary incomplete | Primary incomplete | 0.40 (2.35)* | 0.14 (0.65) |
| <i>Nearest transport road to the Aldeia (walking minutes)</i> | 31.62 | 32.69 | 30.40 | 28.77 | 2.29 (0.66) | 3.93 (0.98) |
| <i>Nearest market to the Aldeia (walking minutes)</i> | 74.43 | 71.41 | 77.85 | 81.79 | -6.44 (-1.52) | -10.38 (-1.97) |
| <i>Nearest urban centre to the Aldeia (walking minutes)</i> | 109.29 | 104.22 | 115.01 | 118.29 | -10.79 (-1.67) | -14.07 (-1.83) |
| <i>Nearest Primary school to the Aldeia (walking minutes)</i> | 36.97 | 36.72 | 37.25 | 36.35 | -0.53 (-0.16) | 0.37 (0.10) |
| <i>Nearest Secondary school to the Aldeia (walking minutes)</i> | 92.09 | 89.02 | 95.57 | 91.65 | -6.55 (-1.30) | -2.63 (-0.45) |

Source: Timor Leste Migration and Remittance Survey 2010 NB: RRHH = Remittance receiving Household. NRRHH = Non-remittance receiving household. 2 extreme outliers were excluded (1 from Baucau and 1 from Ermera) as they were shown to significantly drive the means upward. t-statistics are in Parentheses * Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level.

¹⁴ Remittance income is inclusive of all in-kind and monetary transfers including both formal and informal.

The characteristics of households in receipt of remittances reflect the characteristics of those in receipt of the government solidarity pension. Remittance receiving households also had a greater number of female-headed households, representing nearly 17% (16.9%) of total remittance receiving households, slightly more than their total representation in the sample (12.8%). The average age of the household head was higher for remittance receiving households. They also had fewer children under the age of 5yrs and more members over the age of 15yrs. Two expected results were the significantly higher number of migrants in remittance receiving households (49.4%) and the higher number of over 65yr olds in remittance receiving households when government solidarity payments are included in remittance totals.

Remittance Use

Daily needs, education, social events and health are the four main reported priorities for remittance use.

The survey included a section on remittance use. Data analysis of remittance receiving households showed that 'daily needs' was considered the first priority for over 77% of households. Education and social events were identified as the second and third priority by 19.5% and 17.9% of remittance receiving households, respectively, with health care listed as the fourth priority. Additional survey questions directed at health and education expenditure attempted to gain greater insight into remittance use directed at these assets.

Nearly 51% of remittance receiving households reported using remittance transfers to pay for education costs including materials, uniforms, transport, fees and other costs. Of these nearly 70% said the education would not be possible without the remittance.

Over 57% of remittance receiving households reported remittances spent on health care costs in the past 12 months including consultation fees, medicines, hospital treatment and transport. Of these, over 54% said the health care would not have been possible without the receipt of remittances. Interestingly, both informal interviews and focus group discussions revealed a frustration for the strong cultural practice of giving money to social events such as funerals, *barlake*¹⁵ and parties.

"They use [remittances] also for cultural events, that makes me angry. Culture first, second is housing and education is third priority. If an elder brother works [to] support his younger siblings in education [the money] is less compared to spending for cultural events" 35 year old from Ermera.

These cultural events are recognized as an important social fabric of Timorese culture but the expectation put on individuals and families to contribute large amounts of cash is a frustration expressed by many who feel it limits families from improving their economic situation.

"You can do the payment from generation to generation, no end, even until death you still pay money, [it is] never enough" 45 year old from Ermera.

Table 8 provides a comparison of the value of assets for both remittance receiving and non-receiving households. Interestingly, in contrast to migrant households, no significant

¹⁵ Barlake refers to the payments provided by families during wedding celebrations. It often includes livestock, jewelry, clothing and cash and can amount into the thousands of USD.

differences in asset values between remittance receiving and non-receiving households were noted, with the one exception of livestock. Remittance receiving households were shown to have significantly higher values of livestock but differences in values of all other assets were not statistically significant.

TABLE 8: AVERAGE VALUE OF ASSETS (US\$ 2010)

| Asset | All Households (n=654) | Non-Remittance Receiving Households (n=294) | Remittance Receiving Households (n=360) | Difference |
|--------------------------|---------------------------|--|--|-------------------|
| <i>House</i> | 1561.54 | 1548.88 | 1576.90 | -28.03 (-0.12) |
| <i>Cultivable Land</i> | 7027.40 | 5795.46 | 8963.30 | -3167.85 (-1.83) |
| <i>Livestock</i> | 1520.88 | 912.27 | 2231.68 | -1319.41 (-2.17)* |
| <i>Car</i> | 858.99 | 1498.86 | 133.11 | 1365.74 (1.41) |
| <i>Motorcycle</i> | 110.07 | 93.88 | 128.27 | -34.38 (-0.71) |
| <i>Washing Machine</i> | 0.23 | 0.0 | 0.49 | -0.49 (-1.07) |
| <i>Television</i> | 19.72 | 20.15 | 19.24 | 0.91 (0.15) |
| <i>TV Satellite Dish</i> | 8.98 | 8.65 | 9.36 | -0.72 (-0.23) |
| <i>Mobile Telephone</i> | 43.99 | 35.71 | 53.36 | -17.65 (-1.07) |
| <i>Radio</i> | 13.97 | 12.79 | 15.32 | -2.52 (-0.67) |
| <i>Jewelry</i> | 106.37 | 10.45 | 214.96 | -204.51 (-1.30) |
| <i>Other Assets</i> | 27.01 | 44.36 | 7.38 | 36.99 (0.80) |

Source: Timor Leste Migration and Remittance Survey 2010

t-statistics are in Parentheses * Significant at the 0.05 level ** Significant at the 0.01 level ***Significant at the 0.001 level.

Conclusion

Public remittances are shown to be far more common than private remittances with government pension payments accounting for a significant proportion of remittance receipts and a higher proportion of households with members over the age of 65yrs reporting receiving remittances. Remittance-receiving households also have older household heads, fewer children under the age of 15yrs, a greater number of seasonal/contract workers and more household members over the age of 15yrs. Gender differences were also found among remittance-receiving households with a significantly higher proportion of female-headed households reporting receiving a remittance.

Remittances were reportedly spent primarily on daily needs, education, social/cultural celebrations and health care. In all districts when the pension is removed the mean total remittance received reduces substantially. When the value of government pensions received is removed from remittance totals, remittances are reduced by 44.5%. Any examination of impact of remittances on poverty or household well-being must acknowledge the significance of this pension.

Remittances Sent

42.2% of households sent remittances to others, predominantly consisting of food and cash transfers for basic needs and education costs.

A surprising finding in the data was the number of households sending remittances to others. In all three districts more than 40% of households reported sending remittances. Table 9 summarizes the average remittances sent by households. Food and clothes were the most commonly sent goods transfer with 95.4% of households who sent an in-kind remittance, reporting sending food¹⁶ and 12% reporting sending clothes. A further 69.4% of households sending cash remittances sent transfers to help support the basic needs of the recipient and 64.4% reported sending cash to help pay for education costs. Households on average sent both cash and in-kind remittances 1.7 times in the 12 months preceding survey.

TABLE 9: MEAN VALUE OF REMITTANCES SENT BY REMITTANCE SENDING HOUSEHOLDS (US\$ 2010)

| Mean | Total (n= 275) | Baucau (n=96) | Ermera (n=91) | Viqueque (n=88) |
|--|-------------------|------------------|------------------|--------------------|
| <i>Mean value of in-kind remittance sent in the 12 months preceding survey</i> | 57.27 | 55.19 | 59.49 | 57.13 |
| <i>Mean value of cash remittance sent in the 12 months preceding survey</i> | 180.31 | 191.96 | 176.53 | 172.53 |
| <i>Mean Total Remittance Sent. In the 12 months preceding survey</i> | 242.28 | 253.34 | 237.42 | 236.12 |

Source: Timor-Leste Migration and Remittance Survey 2010

A large majority of remittances sent from households were sent to urban areas (69.5%) with 73% of these remittances going to Dili. 3.5% of remittances sent went to household members studying in Indonesia, with the mean annual value of remittances sent to Indonesia equal to US\$ 1017.28. Nearly 66% of recipients were between 15 and 24yrs of age. Considering the migration figures previously reported, it can be assumed that households send food, clothes and cash to household members who are studying in other locations to assist with living and education costs. This assumption is supported by the fact that over 56% of households with at least one migrant sent a remittance.

Remittance-sending households differed from non-sending households in some important characteristics (refer to Table 10). Remittance-sending households reported significantly higher total incomes and significantly higher per-capita incomes compared to non-sending households. The average age of the household head was higher in remittance-sending households as were the number of household members (both male and female) over the age of 15yrs. Remittance-sending households also possess significantly higher human capital indicators with more members completing primary, secondary and tertiary studies. Not surprisingly the number of migrants is also significantly higher for remittance-sending households. Interestingly the receipt of the government pension did not seem to effect the sending of remittances; 29% of households receiving the pension, and 38% of households not receiving the pension sent remittances.

¹⁶ Rural-urban linkages and resultant reverse remittances have been shown to be a vital livelihood strategy for poor urban households in other developing countries. (Frayne, 2007; Owuor, 2007)

TABLE 10: DESCRIPTIVE STATISTICS OF REMITTANCE SENDING AND NON-SENDING HOUSEHOLDS

| Variable | All Households (n=652) | Remittance Non-Sending Households (n=378) | Remittance Sending Households (n=276) | Difference |
|---|------------------------|---|---------------------------------------|-------------------|
| <i>Average Total Income (\$US)</i> | 1073.34 | 811.54 | 1659.39 | -811.54 (-2.58)** |
| <i>Average Home Income (\$US)</i> | 908.42 | 614.62 | 1293.45 | -678.83 (-2.33)* |
| <i>Average Remittance Income¹⁷ (\$US)</i> | 290.77 | 202.05 | 385.56 | -183.51 (-1.46) |
| <i>Average Per capita Income (\$US)</i> | 196.54 | 161.46 | 237.05 | -75.59 (-2.90)* |
| <i>Average number of employed persons</i> | 0.45 | 0.43 | 0.47 | -0.04 (-0.72) |
| <i>Average number of seasonal/contract workers</i> | 0.63 | 0.60 | 0.67 | -0.67 (-0.83) |
| <i>Household Size</i> | 6.51 | 6.24 | 6.88 | -0.63 (-2.93)** |
| <i>Gender of Household Head</i> | 1.87 | 1.87 | 1.88 | -0.02 (-0.58) |
| <i>% males</i> | 87.2 | 86.5 | 88.0 | |
| <i>% females</i> | 12.8 | 13.5 | 12.0 | |
| <i>Average age of Household Head</i> | 35-44 | 35-44 | 45-54 | -0.30 (-2.77)** |
| <i>Average number of dependents</i> | 3.00 | 2.96 | 3.06 | -010 (-0.60) |
| <i>Average number of children under 15yrs</i> | 2.67 | 2.06 | 2.70 | -0.64 (-1.91) |
| <i>Average number over 15yrs</i> | 3.85 | 3.60 | 4.20 | -0.61 (-4.12)*** |
| <i>Average number of males over 15yrs</i> | 1.91 | 1.80 | 2.07 | -0.27 (-2.79)** |
| <i>Average number of females over 15yrs</i> | 1.94 | 1.79 | 2.13 | -0.34 (-3.76)*** |
| <i>Average number over 65yrs</i> | 0.33 | 0.30 | 0.37 | -0.07 (-1.4) |
| <i>Cultivable land (Ha)</i> | 2.67 | 2.50 | 2.19 | -0.31 (-0.92) |
| <i>Average number of Migrants</i> | 0.79 | 0.40 | 1.32 | -0.92 (-11.24)*** |
| <i>Members over 15yrs Completed Primary school education</i> | 0.21 | 0.18 | 0.25 | -0.08 (-2.03)* |
| <i>Members over 15yrs completed Pre-secondary education</i> | 0.17 | 0.17 | 0.17 | -0.00 (-0.10) |
| <i>Members over 15yrs completed Secondary school education</i> | 0.46 | 0.40 | 0.54 | -0.14(-2.19)* |
| <i>Members over 15yrs with Academy/University education</i> | 0.15 | 0.07 | 0.26 | -0.19 (-5.1)*** |
| <i>Members over 15yrs with Technical college education</i> | 0.01 | 0.01 | 0.01 | -0.00 (-0.39) |
| <i>Average education level completed of Household Head</i> | Primary incomplete | Primary incomplete | Primary incomplete | -0.21 (-1.20) |
| <i>Nearest transport road to the Aldeia (walking minutes)</i> | 31.62 | 33.26 | 29.36 | 3.91 (1.12) |
| <i>Nearest market to the Aldeia (walking minutes)</i> | 74.43 | 71.52 | 78.42 | -6.90 (-1.61) |
| <i>Nearest urban centre to the Aldeia (walking minutes)</i> | 109.29 | 113.60 | 103.39 | 10.21 (1.56) |
| <i>Nearest Primary school to the Aldeia (walking minutes)</i> | 36.97 | 39.04 | 34.13 | 4.91 (1.51) |
| <i>Nearest Secondary school to the Aldeia (walking minutes)</i> | 92.09 | 95.98 | 86.78 | 9.20 (1.81) |

Source: Timor-Leste Migration and Remittance Survey 2010

NB: 2 extreme outliers were excluded (1 from Baucau and 1 from Ermera) as they were shown to significantly drive the means upward. t-statistics are in Parentheses * Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level.

Conclusion

The findings indicate that support of household migrants pursuing higher education is the predominant reason households send remittances, the majority of which are sent to urban areas. Remittance-sending households have, on average, larger households, higher incomes and higher education outcomes than non-sending households.

¹⁷ Remittance income is inclusive of all in-kind and monetary transfers including both formal and informal.

V. FINDINGS – INCOME, CONSUMPTION AND POVERTY

Poverty Indicators

One of the primary aims of this study was to estimate the effect of remittances on poverty in the study districts. Here a brief explanation of poverty indicators used is provided¹⁸.

- The most recent poverty figures available for Timor-Leste are from the Living Standards Survey in 2007¹⁸. The basic needs poverty line was estimated at US\$ 0.88¹⁹ per person per day. This figure represents the cost of attaining 2100 calories per person per day and some basic non-food items. The average lower poverty line was calculated at US\$ 0.71 per person per day. The lower line indicates extreme poverty.
- Per capita consumption is used to measure household welfare. Consumption figures are calculated using the total value of food and non-food items consumed, including those purchased, self-produced and received as gifts or transfers. A household is considered poor if the per capita consumption is below the poverty line.
- Three poverty indices were considered in the analysis:
 1. The headcount index – the poverty headcount index provides the percent of the population living below the poverty line but does not provide any indication as to the severity or depth of poverty experienced.
 2. The poverty gap – the poverty gap index gives the ‘depth’ of poverty, providing a measure of by what percent the average expenditure of the poor falls below the poverty line.
 3. The squared poverty gap –The squaring of the poverty gap is sensitive to changes in distribution among the poor, by putting more weight on observations that fall well below the poverty line. The squared poverty gap is therefore a good indicator of the severity of poverty (WorldBank, 2005).

The three districts under study provide interesting contrasts of geography, population and economy. Table 11 provides general information on the population. While average incomes are similar across the districts,

- Baucau district has a notably higher average wage income, likely due to greater employment opportunities with the district containing Timor-Leste’s largest city, after the capital Dili.
- The district of Ermera shows a higher average farm income, expected due to the strong coffee industry in the district.
- Average household consumption is higher for households in Ermera, although per capita household consumption is highest for households living in Viqueque.
- In all districts the inclusion of the government solidarity pension markedly increases the average remittance received by households.

¹⁸ For details on how these values were calculated refer to: WorldBank, & NSD. (2008). Timor-Leste: Poverty in a Young Nation. Unpublished preliminary draft. World Bank and Direcção Nacional de Estatística Timor Leste.

¹⁹ This is likely to be higher in 2010 as food prices in Timor-Leste were reported to increase by 14% in 2008 (UNDP, 2009) with anecdotal reports indicating that prices have risen further. Results in this section must be viewed with this in mind.

TABLE 11 GENERAL INFORMATION ON STUDY DISTRICTS

| Description | Total (n=654) | Baucau (n=217) | Ermera (n=221) | Viqueque (n=216) |
|--|------------------------|----------------------|---------------------|---------------------|
| Population | 298,794 | 111,694 | 117,064 | 70,036 |
| Land area (km ²) | 18,989 km ² | 1600 km ² | 746 km ² | 877 km ² |
| Average area of cultivable land per HH (Ha) | 2.33 | 2.31 | 2.34 | 2.34 |
| Average HH total income (US\$) | 1073.34 | 1210.01 | 1019.15 | 1286.03 |
| Average HH wage income (\$US) | 470.78 | 738.59 | 296.45 | 378.40 |
| Average HH farm Income (\$US) | 244.48 | 214.60 | 348.18 | 166.78 |
| Average remittance including Pensions (\$US) | 290.77 | 287.93 | 307.49 | 243.69 |
| Average remittance excluding Pensions (\$US) | 168.27 | 194.16 | 208.24 | 100.73 |
| Average HH consumption (US\$) | 3669.29 | 3434.96 | 3816.62 | 3750.37 |
| Average per capita HH consumption (US\$) | 668.99 | 646.68 | 659.70 | 700.78 |
| Average Adult Equivalent HH consumption (US\$) | 857.40 | 833.81 | 856.46 | 881.86 |
| Poverty headcount index (incidence) | 29.5% | 40.0% | 26.7% | 23.1% |
| Poverty gap index (depth) | 9.6% | 14.1% | 7.4% | 7.3% |
| Squared poverty gap index (severity) | 4.5% | 7.4% | 2.8% | 3.4% |

Source: Timor Leste Migration and Remittance Survey 2010 and Timor-Leste Census 2010. Poverty indices calculated using Foster-Greer-Thorbecke with poverty line equal to US\$321.20.

Over 29% of households are living below the basic needs poverty line of \$0.88/person/day with nearly 20% living below the lower poverty line of \$0.71/person/day

Poverty estimates indicate that nearly one third of households in the study live below the upper poverty line of \$0.88/person/day with 1 in 5 households experiencing extreme poverty, living below the lower poverty line of \$0.71/person/day. The poverty gap index measuring the depth of poverty indicates that the average household's per capita consumption falls short of the poverty line by 9.6%.

Table 12 breaks household consumption down further into decile groups. The lower 2 decile groups represent the poorest households living below the lower poverty line of \$0.71/person/day. The third decile group represents the poor living below the basic needs poverty line of \$0.88/person/day. 27.8% of households surveyed in Baucau fall below the lower poverty line, while 39.1% fall below the upper poverty line. The number of poor households is less for the other two districts with 26.7% and 23.1% of surveyed households reporting consumption below the upper poverty line in Ermera and Viqueque, respectively.

TABLE 12: HOUSEHOLD AVERAGE ANNUAL CONSUMPTION BY DECILE GROUP

| Rank | Total Pooled sample (n=654) | Annual Per Capita HH Consumption (US\$) | | | |
|------------|-----------------------------|---|----------------|------------------|--|
| | | Baucau (n=217) | Ermera (n=221) | Viqueque (n=216) | |
| Lowest 10 | 135.48 | 121.03 (15.1%) | 158.19 (7.2%) | 141.32 (7.9%) | |
| Second 10 | 226.12 | 224.37 (12.74%) | 231.29 (10.4%) | 221.32 (7.0%) | |
| Third 10 | 295.11 | 293.94 (11.3%) | 296.78 (10.0%) | 294.66 (8.8%) | |
| Fourth 10 | 356.75 | 348.74 (4.7%) | 355.65 (11.8%) | 360.49 (13.4%) | |
| Fifth 10 | 435.37 | 443.57 (10.9%) | 426.66 (11.8%) | 437.73 (7.4%) | |
| Sixth 10 | 532.16 | 536.05 (8.5%) | 525.30 (10.9%) | 536.30 (10.7%) | |
| Seventh 10 | 630.92 | 620.65 (10.9%) | 636.65 (9.1%) | 636.44 (10.2%) | |
| Eighth 10 | 786.87 | 784.64 (6.6%) | 770.38 (12.2%) | 807.68 (10.7%) | |
| Ninth 10 | 1047.24 | 1008.01 (8.0%) | 1050.14 (9.1%) | 1068.98 (13.0%) | |
| Top 10 | 2854.72 | 2259.89 (11.3%) | 2584.19 (7.7%) | 3641.17 (11.1%) | |

Source: Timor Leste Migration and Remittance Survey 2010. NB: Households ranked into decile groups on the basis of annual per capita household consumption. The proportion of households in each decile group are recorded in parenthesis.

The measures of poverty depth and severity show that in spite of having the higher average wage income, households in Baucau are at higher risk of being in poverty, while also experiencing more severe poverty than the other study districts (an average of 4.5% higher than the other districts).

Nearly one third of households in the lower three consumption deciles report at least 1 migrant from their households (Table 13), although this does not translate into higher remittance receipts. Remittance receipts are reported fairly evenly across the consumption deciles when pensions are included or excluded. The impact of pensions can be seen when looking at remittance receiving households separately and examining remittances as a percent of total household consumption. Remittances without pensions make up nearly 20% percent of consumption among the poorest households (lowest 2 deciles), this increases to nearly 50% when government pensions are included in remittances, providing some indication that remittances (in particular government pensions) can allow the poorest households to increase consumption which may then lead to improvements in household welfare.

TABLE 13: DISTRIBUTION OF MIGRANT HOUSEHOLDS AND REMITTANCE-RECEIVING HOUSEHOLDS BY DECILE GROUP, RANKED BY PER CAPITA HOUSEHOLD EXPENDITURE, INCLUDING REMITTANCES

| Rank | All Households (n=654) | | | For Remittance Receiving Households (n= 305) | |
|-------------------|------------------------------------|--------------------------|--------------------------|--|--|
| | Households with at least 1 migrant | RRHH (including Pension) | RRHH (excluding Pension) | Remittance as a percent of total HH consumption (inc. Pension) | Remittance as a percent of total HH consumption (exc. Pension) |
| | (1) (percent) | (2) (percent) | (3) (percent) | (4) (percent) | (5) (percent) |
| <i>Lowest 10</i> | 12.0 | 9.5 | 8.2 | 47.4 | 18.3 |
| <i>Second 10</i> | 10.3 | 11.2 | 11.7 | 26.4 | 9.9 |
| <i>Third 10</i> | 10.7 | 8.5 | 7.6 | 17.9 | 5.0 |
| <i>Fourth 10</i> | 9.3 | 10.8 | 10.5 | 31.1 | 19.4 |
| <i>Fifth 10</i> | 8.6 | 7.9 | 8.2 | 34.3 | 26.2 |
| <i>Sixth 10</i> | 12.4 | 10.2 | 9.4 | 25.4 | 17.4 |
| <i>Seventh 10</i> | 10.0 | 11.5 | 11.1 | 17.0 | 4.1 |
| <i>Eighth 10</i> | 8.9 | 10.8 | 12.9 | 16.9 | 11.6 |
| <i>Ninth 10</i> | 9.3 | 10.2 | 11.1 | 10.7 | 3.9 |
| <i>Top 10</i> | 8.6 | 9.5 | 9.4 | 14.1 | 7.0 |

Source: Timor Leste Migration and Remittance Survey 2010 RRHH refers to Remittance Receiving Household.

NB: Households are ranked into decile groups based on per capita HH consumption (including remittances). Column (1) shows the percent of HH in each consumption decile with at least 1 migrant. Columns (2) and (3) shows the percent of HH in each decile that are remittance-receiving households. Columns (4) and (5) show remittances as a percent of total per capita household expenditure for remittance receiving households in each consumption decile.

Further analysis was undertaken in order to measure the impact of remittances on poverty within study households using the poverty lines and measures of poverty previously described. As evident from Table 14 remittances are shown to decrease poverty incidence, depth and severity. Households receiving a remittance (from all sources) had a poverty headcount 1.7% less than households who did not receive a remittance. Remittance receiving households experienced a 9.3% drop in depth of poverty and 20.8% decrease in severity of poverty. These results support research findings from other low-income nations that also show a negative correlation between remittance receipts and poverty²⁰, although due to limitations experienced during data analysis²¹ these results are to be viewed with caution.

²⁰ In South Africa remittance receipts were shown to decrease poverty headcount by 8.8% when included in household income, compared to no remittances (P Maitra & Ranjan, 2003). Adams (2004) reported a decrease of poverty headcount in Guatemala of 0.6% and a decrease of the squared poverty gap of 21.1% when internal remittances are included in household expenditure.

²¹ For further detail on poverty analysis refer to Annex 4.

TABLE 14: POVERTY ANALYSIS FOR REMITTANCE-RECEIVING AND NON-RECEIVING HOUSEHOLDS.

| Poverty Indices | All Households | Households Receiving no remittance | Households Receiving Remittance (including Pension) | Percent Change (No remittance v's Remittance including Pension) |
|---|----------------|------------------------------------|---|---|
| | (1) | (2) | (3) | (4) |
| <i>Poverty Headcount (percent)</i> | 29.54 | 29.88 | 29.56 | (-1.71) |
| <i>Poverty gap (percent)</i> | 9.56 | 10.08 | 9.14 | (-9.34) |
| <i>Squared Poverty gap (percent)</i> | 4.50 | 5.04 | 3.99 | (-20.83) |
| <i>Mean per capita household consumption (including remittances) \$US2010</i> | 668.99 (28.68) | 682.42 (46.19) | 653.23 (33.81) | (-4.28) |
| <i>N</i> | 646 | 328 | 318 | |

Source: Timor-Leste Migration and Remittance Survey 2010.

NB: Column (1) excludes data from 2 outlier households and 4 households with missing data. Column (2) measures the situation for households who reported receiving no remittances. Column (3) measures the situation for all households receiving a remittance, inclusive of the government pension. Column (5) measures the situation for households receiving remittances but not receiving the government pension.

Government Solidarity Pension payments were shown to decrease poverty incidence, depth and severity.

The impact of government pensions on poverty was analyzed as government solidarity pensions are a significant addition to household income and are truly exogenous as pensions are provided to all persons over 60yrs of age irrespective of other household unobserved characteristics. Table 15 reports the results for these measures of poverty for remittance receiving households receiving and not receiving the pension.

A decrease of poverty headcount by 1.0% was observed in remittance receiving households that received the pension when compared to remittance receiving households who did not receive the pension. Households receiving the pension had a poverty gap 10.5% lower and a poverty severity 18.6% lower than remittance receiving households not receiving the pension. These results show that government solidarity pensions are having an important effect on household welfare in recipient households.

TABLE 15: COMPARISON OF POVERTY INDICES WITH AND WITHOUT PENSION FOR REMITTANCE RECEIVING HOUSEHOLD

| Indices | Pension not received Observed | Pension Received Observed | Percent Change Pension vs no Pension (Observed) |
|--|-------------------------------|---------------------------|---|
| <i>Mean per capita household expenditure (US\$ 2010)</i> | 672.06 | 634.65 | -5.89% |
| <i>Poverty headcount index (incidence)</i> | 29.5% | 29.2% | -1.02% |
| <i>Poverty gap index (depth)</i> | 9.5% | 8.5% | -10.5% |
| <i>Squared poverty gap index (severity)</i> | 4.3% | 3.5% | -18.6% |
| <i>N</i> | 176 | 144 | |

Source: Timor-Leste Migration and Remittance Survey 2010

NB: Column (1) uses predicted consumption equations excluding Pension for all 654 Households. Column (2) includes Pensions. Poverty calculations were made using the poverty line of US\$321.20 per person per year, the most recent available Poverty line for Timor-Leste. (WorldBank & NSD, 2008)

Budget Share

The spending behavior of households receiving remittances is qualitatively different from households who do not receive remittances.

Budget shares for expenditure categories were calculated to identify at the margin how the receipt of remittances affects the expenditure patterns of households. Table 16 presents the marginal budget shares for households on the various categories of expenditure²². Although differences in budget shares are noted between remittance receiving and non-receiving households, the only difference of significance was found on health, where households receiving remittances reported a significantly greater budget share to health than non-recipient households.

TABLE 16: BUDGET SHARES ON EXPENDITURE BY REMITTANCE AND MIGRATION STATUS

| Expenditure Category | All Households (n=654) | Households Receiving no remittance (n = 347) | Households Receiving Remittance (including Pension) (n=307) | Percent Change (No remittance v's Remittance including Pension) | Non-Migrant Households (n=360) | Households with at least 1 migrant (n=294) | Percent Change (No Migrant v's at least 1 migrant) |
|----------------------|------------------------|--|---|---|--------------------------------|--|--|
| <i>Food</i> | 70.3 | 69.3 | 71.4 | +3.0 | 71.4 | 69.0 | -3.4 |
| <i>Non-Food</i> | 20.3 | 21.0 | 19.4 | -7.6 | 19.4 | 21.3 | +9.8 |
| <i>Housing</i> | 2.3 | 1.8 | 2.9 | +61.1 | 2.5 | 2.1 | -16.0 |
| <i>Utilities</i> | 8.1 | 8.3 | 7.8 | -6.0 | 7.7 | 8.5 | +10.4 |
| <i>Durables</i> | 1.4 | 1.4 | 1.4 | 0.0 | 1.4 | 1.3 | -7.1 |
| <i>Education</i> | 5.0 | 4.1 | 6.0 | +46.3 | 2.8 | 7.9 | +182.1** |
| <i>Health</i> | 1.6 | 1.3 | 1.9 | +46.2* | 1.4 | 1.8 | +28.3 |

Source: Timor Leste Migration and Remittance Survey 2010

*Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level..

Comparison of migrant and non-migrant households found the presence of at least 1 migrant in a household significantly increased budget shares to education. Households with at least one migrant reported spending over 180% more on education than households with no migrants. This significantly higher budget share to education among migrant households is not surprising given the previous findings relating to characteristics of migrants and migrant households, where education featured strongly as the primary motive for migration. The significant higher budget shares to education and health illustrate that both migration and remittances can raise the level of human capital in Timor-Leste.

The separation of housing from the Non-Food category showed the budget shares to housing increase by more than 61% for households receiving both formal and informal transfers and by over 127% for households receiving only informal transfers when compared to non-remittance receiving households. Interestingly, the budget share to housing decreased by 16% when a household had at least 1 migrant, providing some indication of household budget re-prioritization. Considering previous findings that showed 56% of households with at least one migrant sent a remittance out, it is probable that household resources are re-directed toward support of the migrant.

²² For a detailed breakdown of expenditure categories refer to Annex 3

Households receiving the government solidarity pension spent significantly more at the margin on education.

This analysis was extended for households receiving government solidarity payments. Econometric techniques were employed to derive counterfactual consumption estimates, with and without receipt of a government pension. Budget shares were examined to determine the impact of government solidarity pensions on household budget. The results are presented in table 17.

TABLE 17: MARGINAL BUDGET SHARES ON EXPENDITURE AND AVERAGE TREATMENT EFFECTS (ATT) FOR PENSION RECEIVING AND NON-RECEIVING HOUSEHOLDS.

| Expenditure Category | Pension not Received | Pension Received | | | |
|----------------------|---------------------------------|---------------------------------|--------------------------------------|--------------------------------|--|
| | Estimated Marginal Budget Share | Estimated Marginal Budget Share | Counterfactual Marginal Budget Share | Average Treatment Effect (ATT) | Percent Difference (receive Pension vs no Pension) |
| <i>Food</i> | 0.469 | 0.608 | 0.649 | -0.041 | -6.32% |
| <i>Non-Food</i> | 0.354 | 0.345 | 0.231 | 0.114*** | 49% |
| <i>Housing</i> | 0.115 | 0.041 | 0.060 | -0.019 | -31.67% |
| <i>Utilities</i> | 0.134 | 0.043 | 0.084 | -0.041* | -49% |
| <i>Education</i> | 0.021 | 0.048 | 0.026 | 0.022* | 85% |
| <i>Health</i> | 0.014 | -0.025 | 0.005 | -0.031*** | -620% |
| <i>Durable Goods</i> | 0.007 | -0.019 | 0.004 | -0.023*** | -575% |

Source: Timor Leste Migration and Remittance Survey 2010 .

Percent difference (Pension vs no Pension) calculated by dividing ATT by the value of counterfactual Marginal Budget Share. * Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level.

When compared to what they would have spent without receipt of the pension, households receiving government solidarity pension payments spend 85% more at the margin on education than they would have spent without the receipt of the pension. This large marginal increase in expenditure on education can help raise the human capital in Timor-Leste.

Other significant findings were the 49% increase in marginal expenditure on non-food items which included housing, clothing, transport, fuel, cultural events, entertainment, home improvements and construction, sending money to others, gifts/presents/goods for others. When housing is separated the marginal budget share to this item is shown to decrease markedly (although this decrease was not shown to be statistically significant). With cultural events featuring as one of the top four priorities for remittance expenditure mentioned by households, this may help to explain the marginal increase in expenditure on non-food items. At the mean households receiving government solidarity pension payments spend significantly less at the margin on consumption goods (food, durables²¹) than they would have spent without the receipt of the pension, indicating that households do not spend their additional income on 'conspicuous' consumption.

Conclusions

The results show that remittances improve household welfare by decreasing poverty headcount, depth and severity while leading to increased budget shares on health. The results show the spending behavior of households participating in migration is quantitatively different from non-migrant households with higher budget shares to education and lower budget shares to food and housing. These results support earlier findings in section 3 of this report, which ascertains that education is the primary reason for migration.

The spending behavior of remittance receiving households also differs from non-receiving households with marked increases in expenditure on housing, education and health in households receiving formal and/or informal transfers. This increased expenditure on housing can stimulate the local economy by providing multiplier effects on wages, employment and business opportunities while the increased expenditure on health and education can lead to improvements in human capital which can positively effect economic growth, locally and nationally.

Specifically the impact of government solidarity payments on poverty and household budget was examined further using specialized econometric techniques. Households receiving the government solidarity pension payments were shown to spend more on investment (education) and less on consumption goods. The government pension was also shown to decrease poverty headcount, depth and severity in recipient households when compared to remittance receiving households not receiving the pension.



VI. IMPLICATIONS FOR POLICY

It has been documented in the literature and through research that migration and remittances have been shown to be an important livelihood strategy for risk diversification in nations with established migrant networks and regular remittance in-flows. Recent remittance literature points to a positive effect on poverty among remittance receiving households.

This study shows that even with limited infrastructure and an undeveloped financial sector many households in remote villages in Timor-Leste are sending and receiving remittances. Remittances received make up a significant proportion of recipient households consumption.

It is important the government of Timor-Leste and partners recognize the poverty reducing capacity of remittance transfers and establish migration and remittance friendly policy.

- The financial sector needs to prioritize access to financial services in rural areas, incorporating low cost remittance transfer methods, ie mobile phone technology could be utilized to establish mobile transfer services.
- Economic policies encouraging financial service providers to set up in rural areas could help increase access to and investment of remittances. Access to credit will also enable non-remittance receiving households to set up service-providing businesses, allowing them to benefit from remittances of others.
- Regulations preventing prohibitive fees and penalties by current banking services should be put in place. For example, the 10% charge by Banks in Dili if the transfer is not collected within 1 month of them receiving it.
- Strategies for poverty reduction should include various aspects of migration. The multiplier effects of migration and remittances on local communities needs to be further understood and explored by policy makers.
- Improved access to migration by remote villages is likely to be an important livelihood strategy of households in Timor-Leste in the future as improved transport infrastructure and greater employment opportunities are realized. By introducing favorable policy in the early stages of migration, networks can be strengthened, enhancing access to migrant remittances, facilitating economic development in recipient communities.
- Migration and remittance policy needs to go hand in hand with rural development programs that provide alternate income-generating opportunities leading to less dependency on migration. This is vital in the current employment climate in Timor-Leste where migration can increase the financial burden on families when employment is not found.
- Labor and industry policies that encourage new corporations and industries to use a decentralized approach to sourcing labor, in conjunction with rural education programs, could help increase access to labor markets for rural areas encouraging the formation of new migrant networks. Tax incentives or subsidies to promote decentralization of industry could also help open up the labor markets in rural areas.
- Protection policies and laws for migrant workers also need to be in place and enforced, the exploitation of migrant labor is well known.

- Government funded transport solutions should be sought for remote villages where education and health facilities are not easily accessible, ie. paying bus drivers to drive from the village to the school twice a day would help increase access to education.
- Provision of low-cost student accommodation in Dili and other urban centers with post-secondary training may help increase access to higher education among those who do not have established migrant networks.
- With education a high priority among most households in the study districts policy makers concerned with education should focus on providing training in skills that Timor-Leste both currently needs and will need in the future. By providing the population with skills in areas of need, Timor-Leste can enhance its skills base while also offering the security of employment for those who complete their training.
- Continued expansion of intensive labor schemes is needed to create employment. Government commitment to decentralized of some services may aid in curbing the high rates of rural-urban migration and take some of the employment pressure from Dili.

CONCLUSION

Using data from a three district household survey and in depth focus groups discussions, the poverty and human capital implications of remittances in Timor-Leste were quantified. It was found that nearly 50% of households reported at least one migrant, the majority of who moved from rural to urban areas. Education was the main reason for migration with human capital gains the most commonly reported affect of migration on households of origin. Migrant remittances were uncommon with almost 80% of all cash remittances being received from government payments or NGO's.

Econometric analysis was utilized to examine the impact of government solidarity pension payments on household economy. The pension was shown to have a significant positive impact on recipient households decreasing poverty incidence, depth and severity. Contrary to other studies, this analysis also found that households receiving the pension invested more in education and spent less on consumption goods. The study found that although 29% of households lived below the poverty line and 20% below the lower poverty line over 40% of households reported sending remittances to others, predominantly consisting of food and cash transfers for basic needs and education costs.

As Timor-Leste undergoes the transition from a post conflict to independent nation, building human capacity and decreasing poverty are two issues imperative to continued peace and stability. Migration and Remittance studies²³ need to be carried out at regular intervals to monitor changes and help direct policy initiatives. The possible 'crowding out'⁷ effect of government transfers on migrant remittances requires further research.

²³ The data collection tool (internal remittances survey) developed for this study can be used as an added module to larger national household surveys to gain further understanding of migration and remittance flows across the nation.

ANNEX 1 MULTI-STAGE SAMPLING STRATEGY

Timor-Leste Migration and Remittance Survey Sample Design

Using 2004 Enumeration Area (EA) National Census count, 15 Primary Sampling Units (PSU's) were selected independently with Probability Proportional to Size from each of the study districts.

- At the first stage of sampling a list of the Suco's in the district and the number of households in each Suco were listed. 15 Suco's were selected using Probability Proportional to Size, which was based on the number of households living in each Suco at the time of Census (2004).
- The second stage consisted of selecting a sample of Secondary Sampling Units (SSU's) from each PSU. A list of Aldeia's in each chosen Suco was collated and 1 was randomly selected as the SSU.
- The last stage-sampling unit in the multistage sampling was the household.

Two approaches were considered for the selections of households to be interviewed. An exhaustive household listing via the door to door (DTD) method and the prior-list dependent method (PLD), which is possible in Timor-Leste as all Chef de Aldeia's keep a list of households living in that Aldeia, which had been recently updated for the 2010 census.

The PLD method was selected due to resource constraints and a complete household listing was not possible as Timor-Leste does not have written boundary maps for Aldeia's. The associated challenges with the PLD method were minimised; a letter was sent to each Chef de Aldeia of the selected enumeration areas prior to a visit from the team explaining the purpose of the research and the need for an accurate list of Households currently living in the Aldeia. This was further defined as those households who have members that are currently sleeping and eating in the Aldeia.

The team supervisor sat with the Chef de Aldeia and updated the household list to only include the households currently eating and sleeping in the Aldeia.

Using the updated Household List the supervisor selected 15 households for interview, using a unique random number table for each EU.

The sampling method used in this study is common to household surveys. The practice of selecting enumeration areas based on Probability Proportional to Size and choosing a sample from a unique random number table provides a truly random sample as each household has equal probability of being selected.

A total of 675 households over the 3 districts, Baucau, Ermera and Viqueque, were selected and interviewed for the study.

ANNEX 2 DATA COLLECTION

The questionnaire developed was based on prior national migration and remittance surveys used as supplements to the Living Standards Surveys in other nations. The multi-modal survey also borrowed questions from prior Timor-Leste Living Standards Surveys (2001, 2007) to ensure relevance to the Timorese context. Modules include a detailed household roster, migration history of the household, a broad remittance section including incoming, outgoing in-kind and cash remittances, and in order to measure the impact of remittances on poverty a comprehensive income/consumption module was included.

Subjective data was also collected on the household's perceived well-being, and impact of migration. The questionnaire was originally designed to act as a migration and remittance supplement to larger nationwide household surveys, the household roster and income/consumption sections can be easily removed

A further challenge associated with the income/expenditure data is that income and expenditure patterns vary over seasons. In agrarian societies these differences can be pronounced providing very different data, results and conclusions depending on the time of year the survey was undertaken. In Timor-Leste the wet season (November-March) is associated with a lean period, in which hunger is more pronounced and poverty statistics will be higher than June-August, considered the period of plenty. National Income/expenditure surveys and the LSMS are typically carried out over a 1year reference period to cover the various seasons, holiday periods and harvest/hunger periods, which typically affect the income and consumption patterns of households in developing nations.

It was beyond the budget and scope of this study to undertake such an extended reference period so instead the researcher decided to collect data between the end of the period of plenty (August) and the beginning of the lean period (November). Data collection occurred from September to November 2010.

The survey was translated into Tetun and pre-tested during a preliminary trip to Dili, in June 2010, with a small sample of the target population. Based on respondent feedback, the questions were revised. The validated survey underwent further revisions during the training of enumerators. The survey was administered in Tetun by a team of local enumerators via interview administration. Interview administration was favoured as it reduces the exclusion of participants due to illiteracy. The enumerators worked in teams of 3, including a male and female enumerator.

ANNEX 3 CONSUMPTION CATEGORIES

DESCRIPTION OF EXPENDITURE CATEGORIES USED IN THE ANALYSIS

| Category | Category Description |
|------------------------|---|
| Food ^a | Purchased items Home grown items Items received in-kind |
| Non-food ^b | Clothing Transport Fuel Cultural events Entertainment Home improvements/construction Sending money to others Gifts/Presents/goods for others |
| Durables ^b | Domestic appliances TV, Satellite, Radio, Computer, DVD Vehicles Other |
| Utilities ^b | Electricity, gas, water Cooking fuel Phone bills Rent Agricultural inputs Livestock Non-farm enterprise Savings Repayment of loans |
| Education | Education |
| Health | Health |

- a. Food consumption was further broken down into 14 specific categories. HH were asked about the food consumed from each category in the past 7 days. A total weekly food consumption figure was then calculated from this data, which could then be translated into an annual figure.
- b. Respondents were asked how much the HH had spent on each category and the value of items received as a gift or payment for work, in the past 30 days and 12 months, respectively. This was then translated into an annual figure.

ANNEX 4 POVERTY ANALYSIS

Measuring impact of migration and remittances on household well-being is fraught with methodological challenges. Household decisions on migration and remittances may depend on certain household characteristics that may also shape household expenditure patterns, migration decisions, education and remittance behaviors. Causality is therefore difficult to establish and regression analysis prone to bias. Three such bias' are specific to migration and remittance studies (Deaton, 1997; McKenzie & Sasin, 2007).

1. Reverse causality occurs when remittances are sent to smooth economic shocks, a positive relationship may be found between remittances and poverty. However it is the outcome that has influenced migration and remittance decisions rather than vice versa.
2. Selection bias refers to 'self-selection' of migrant households related to specific household characteristics, such as; higher education, greater resources, stronger migrant networks, less dependents. This 'self-selection' prevents the prediction of what would happen to non-migrant households if they had a migrant as households may differ in their unobservable characteristics (ie, ability, risk aversion).
3. If these unobservable characteristics are not accounted for in analysis, omitted variable bias is likely to influence results. To highlight how this bias may impact in practice an example mentioned by McKenzie and Sasin (2007, p. 5) describes a scenario where economic policies could simultaneously lead to both a reduction in poverty and attract further remittances as opportunities to invest open up in the local economy, poverty and remittances would have a negative correlation without a causal relationship.

Ordinary least squares method ignores endogeneity, introducing bias, which may be minimal depending on the context. Two increasingly popular means for measuring impact of migration is to construct an income/consumption counterfactual or use of a propensity score matching technique. The first mentioned calculates the counterfactual of what the household's income/consumption would have been if they had chosen not to send a migrant (Adams, 2004), while the second mentioned compares a migrant households with a non-migrant household with the same propensity to migrate (Acosta, Fajnzylber, & Lopez, 2007).

These forms of analysis are also prone to their own challenges and restrictions, which are minimized by the use of 'instrumental variables'. These variables must be correlated with the explanatory variable but not correlated with the dependent variable. Variables that have made strong instruments in previous migration & remittance studies are distance, natural shocks, economic shocks and cultural factors (Deaton, 1997; McKenzie & Sasin, 2007). The following variables were tested for strength as 'instruments' in this analysis, using the walking distance in time from the center of the village where interviews were undertaken.

1. Distance to nearest transport road.
2. Distance to nearest market.
3. Distance to nearest urban center.
4. Distance to nearest primary school.
5. Distance to nearest secondary school.
6. Distance to nearest health care center.
7. Distance to nearest hospital.

Unfortunately none of these variables tested strong enough to use as instruments with distance to nearest secondary school the only variable showing a weak correlation with the explanatory variable.

Without the possibility of performing instrumental variable regression, due to the lack of a suitable instrument, OLS and cross-tabulation analysis was utilized with the aim of providing insight into migration and remittances in the study districts rather than drawing solid conclusions on impacts. The main source of bias will be discussed with relevance to this analysis.

1. Reverse causality bias is unlikely in the current context of Timor-Leste where a high prevalence of poverty is combined with poor employment opportunities. Our study found that few migrants actually remitted back to households with government pensions comprising of the majority of remittance transfers.
2. Selection bias is present with migrant households displaying positive selection illustrated by higher education outcomes and greater means (higher asset value).
3. Omitted variable bias, if present, is not thought to be significant with the main focus of migration being on furthering education and very few migrants that secure employment, sending a remittance back to the household.

With government pensions shown to make up the large majority of cash transfers to households it was possible to examine the impact of these transfers treating this transfer as exogenous, as it is not dependent on unobservable household characteristics. Thereby analysis of remittances looking specifically at government pensions could be considered free of selection bias. Wealthy and poor, educated and un-educated households received the government pension if they met the qualification criteria of having a member over the age of 60 years, an x-combatant with disabilities incurred during the fight for independence or an x-combatants widow.



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