Centre for International Health

Migration Patterns and the Impact of Internal Transfers on Consumption and Human Capital in Timor-Leste

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This thesis is presented for the Degree of
Doctor of Philosophy
of
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DECLARATION

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This thesis contains no material that has been accepted for the award of any other degree or diploma in any university.

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

The Legacy of 25 years of resistance, Ermera.

ABSTRACT

The 'migration and development' debate has gained momentum in recent years with studies on remittances drawing attention to the possible developmental impact of migrant remittances. Internal movement of people within the borders of their nation state is the most predominant form of migration, often affecting the poorest regions and poorest households. However, the potential impacts of internal migration and remittances on poverty reduction and development of human capital have largely been neglected in the empirical literature with the rebirth of the 'migration and development' debate centring on international migration and remittances. This lack of research on the impact of *internal* migration and remittances on households of origin is particularly evident in the context of post-conflict and transitional countries.

Timor-Leste, a post-conflict transitional nation that attained democracy in 2002, offers a unique context in which to examine internal migration patterns and flows of cash and goods ten years on from independence. This thesis examines the impact of internal migration and pubic and private transfers on three districts of Timor-Leste, namely Baucau, Ermera and Viqueque. The sustainable livelihoods framework developed by Scoones (1998) is the conceptual framework that underpinned the research.

A mixed methods design was adopted employing a comprehensive household cross-sectional survey combined with semi-structured interviews. In October 2010, 654 households were surveyed. The household survey was developed with the view that the National Statistics Directorate in Timor-Leste could use all or modules of it, in future surveys. Constructed into seven sections, the survey collected data on household demographics, household migration history, cash and in-kind transfers received, transfer use and transfers sent by the household, perceived living standards and household consumption, expenditure, income and assets. The qualitative arm of the research comprised six focus group discussions and 10 key informant interviews using a semi-structured guide that explored the lived experience of migration and the impact of transfers on interviewees.

The findings of the study reflected two realities. First, the desire for further education was clearly identified as the predominant reason for migration with human capital benefits such as increased education and skill base, having the greatest reported impact on households. Second, private transfers were uncommon with over 80 per cent of internal cash transfers received from the government solidarity pension payments. These findings reflect the need for migration theory to look beyond a purely economic understanding of migration and transfers, particularly in any post-conflict/transitional context facing immense challenges in rebuilding social, economic and physical infrastructure.

Econometric analysis was employed to measure the impact of public and private transfers on household consumption. When compared to what they would have spent without receipt of the pension, households receiving government solidarity pension payments spend 7 per cent more at the margin on education than they would have spent without the receipt of the pension (although this increase was not shown to be statistically significant). Significant findings were a 40 per cent increase in marginal expenditure on food and a 275 per cent increase on marginal expenditure on health. These results indicate that with the increase in income as a result of the government solidarity pension payments, households spend more on human capital expenditure items: education, health and food. These findings are consistent with the results of the qualitative data analysis, which reported that food, education and health were among the top four uses of transfers. The results document the important impact of the government solidarity pensions on recipient households, recognising their role in the rural household economy should not be underestimated.

The findings from this study contribute to the limited but growing literature on the impact of cash transfers in post-conflict nations. As the government in Timor-Leste works to build a strong nation state, poverty remains high and human capital low, thus the findings highlight the need for policy makers to recognise the significance of internal migration and transfers and look beyond a purely economic model of understanding.

LIST OF INCLUDED PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS

1. Housen, T., Hopkins, S., and Earnest, J. (2012). A Systematic Review of Internal Remittances and the Impact on Poverty and Human Capital in Recipient Households: Implications for Policy. *Population, Space and Place*. DOI: 10.1002/ psp.1743.
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The future of Timor-Leste, Viqueque

LIST OF ABBREVIATIONS

ATT	Average Treatment effect on the Treated
DFID	Department for International Development
DNE	Direcção Nacional de Estatística.
DTD	Door to Door
EA	Enumeration Area
FGT	Foster, Green and Thorbecke poverty measure
GDP	Gross Domestic Product
GTL	Government of Timor-Leste
HIES	Household Income Expenditure Survey
IDMC	Internal Displacement Monitoring Centre
IDP	Internally Displaced Person
ILO	International Labour Organisation
LSMS	Living Standards Measurement Survey
MBS	Marginal Budget Share
MPC	Marginal Propensity to Consume
NELM	New Economics of Labour Theory
NGO	Non Government Organisation
OLS	Ordinary Least Squares
PLD	Prior List Dependent
PPS	Population Proportional to Size
PSU	Primary Sampling Unit
TLSS	Timor-Leste Living Standards Survey
UN	United Nations
UNDP	United Nations Development Program
UNHCR	United Nations High Commission for Refugees
US$	United States Dollars, the official currency of Timor-Leste
SPSS	Statistical Packages for Social Sciences
SSU	Secondary Sampling Unit

DEFINITIONS

Bias: The difference between the parameter and the expected value of the estimator of the parameter.

Counterfactual: The construction of other possibilities and their implications that should permit one to associate counterfactual suppositions, in order to draw references to what actually happens.

Crowding out effect: An economic concept where increased public spending replaces or drives out private spending. In reference to cash transfers the 'crowding out' effect occurs when the introduction of government pensions (formal transfers) leads to a decrease in the amount of migrant transfers (private transfers) received by a household.

Fertility Rate: The number of children that would be born to each woman if she were to live to the end of her childbearing years.

Gross Domestic Product (GDP): The sum of the value added by all resident producers in the economy in addition to product taxes not included in the valuation of output.

Household: A household member is 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 persons 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.

Household Dependency Ratio: The sum of household members under the age of 15 years and over the age of 65 years expressed as a percentage of the total household size.

Household Head: Considered by the household to be the primary decision maker.

Household Member: 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. This definition followed the principle that each person belongs to one household only.

Household of Origin: The household a migrant belonged to pre-migration.

Human Capital: The stock of competencies, knowledge, education, and social attributes, including health, embodied in the ability to perform labour so as to produce economic value.

Labour Force: All people employed or unemployed above a certain age, deemed appropriate to undertake employment.

Migrant: A migrant is defined as an individual who has changed their usual place of residence, spending more than 3 months away from the household in the past 12 months.

Panel Data: Data containing observations on multiple variables observed in a single sample over multiple time periods and used in data analysis.

Poverty Incidence: The measure of the proportion of the population that is counted as poor, living below a specific poverty indicator.

Poverty Gap: The extent to which individuals, on average, fall below the poverty line. Expressed as a percentage of the poverty line.

Poverty Severity: A construct of the measure of poverty that takes into account inequality among the poor. The weighted sum of the poverty gaps (as a proportion of the poverty line).

Transfer: This definition was extended for the purpose of this research to include all 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 transfers from non-government organisations (NGOs) that are not a payment for goods or services provided by the household.

Subsistence Farmers: Farming for self-sufficiency, in which farmers focus on growing enough food to feed themselves and their household. This includes crops and animals required to feed and clothe members of the household during the year.

STATA: Statistical software program often used to analyse research data in applied economics.

Tetun: The official national language of Timor-Leste.

EXPLANATION OF TETUN TERMS

Aldeia: The Tetun name for a 'village' in Timor-Leste.

Barlake: The bride price that the groom's family is expected to pay prior to the wedding. This can be to the value of thousands of American dollars.

Liurai: (*Liuriai*; or Kemak: *Koronel bote*) is a traditional Tetun word describing the elite rulers and literally means "surpassing the earth". The Liurai families have maintained a significant role in Timorese society until recent times.

Suco: An administrative area made up of a group of villages (*aldeia*).

Xefe de Aldeia: Village Chief

Timor Island

Timor Island, beautiful island.
Your name is as fragrant
as sandalwood
granting fragrance to the island.

Your name is called
from generation to generation,
from the village to the town;
from the mountain to the seashore
Who does not know your name?

When the sun rises,
you are as bright as silver;
and when the sun sets,
you are as shiny as gold.

Men from the east, from the west,
from the north,
and the south
know who you are.

Timor island, you are the mother
of your descendants.
Pray so that they go from one country to another
and then come home
to praise your name!
Oh……Timor island, the island of beauty,
the island of fragrance.

by Yohanes Manjitu (2004)

Timorese Poet

Chapter One: Introduction and Overview

1.0 Introduction

This chapter provides an introduction to the research presented in this thesis. It begins with a very brief introduction to the existing knowledge gap on the impact of internal public and private transfers on recipient households and why this is relevant in the context of the nation of Timor-Leste. The main aim of the research is presented followed by a statement of limitations and the significance of the study. The chapter concludes with a brief overview of the thesis.

1.1 Migration and Transfers

Migration has historically had an important role to play in human development. From the conquering and resettlement of new lands to the mass urbanisations of the late eighteenth century and early twentieth century that led to the French Revolution and Industrial Revolution (Saunders, 2010). The twenty-first century is witnessing an increasing population shift from rural areas to urban centres (Saunders, 2010) with a secondary shift in peoples moving across international borders. An estimated 215 million people (3 per cent of the world's population) live outside their country of birth (World Bank, 2011).

International transfers (remittances) are recognised as an important component of gross domestic product (GDP) in nations with high out-migration (Ekanayake & Mihalis, 2008). The potential to harness these transfers for development is increasingly debated and discussed in international migration and economic literature (Giuliano & Ruiz-Arranz, 2008; World Bank, 2005b, 2008b). Although there is a growing body of research on international migration and remittances[1], estimated to globally amount to nearly US$325 billion dollars for developing countries (World

[1] See for example, (Bredl, 2011; Bussolo & Medvedev, 2007; Ratha, Sanket, et al., 2011; SSRC, 2009; Taylor & Lopez-Feldman, 2010; UNDP, 2009)

Bank, 2011), there remains limited research on the flow and impact of *internal* transfers on recipient households[2].

An estimated 740 million[3] people, representing over 12 per cent of the world's total population, are internal migrants within their own countries (UNDP, 2009). Internal remittances are often of substantially smaller value than international remittances but in many rural communities in low-income nations even small amounts of cash could have high utility and prove important in rural development and poverty reduction (Deshingkar & Farrington, 2006; Deshingkar, Kumar, Chobey, & Kumar, 2006). The extent to which this occurs remains poorly understood largely due to incomplete and unreliable data on internal migration and transfer flows in developing countries (Deshingkar, 2005, 2008).

The development of urban slums and 'migrant suburbs' along the periphery of large urban centres are often viewed with pessimism by urban planners and policy makers and have caused political unrest, dominated political debate and shaped migration policy (Davis, 2007). Viewed principally as a blemish on the urban city landscape, such enclaves are often targeted by governments (Patel, 2011; Rakshand, 2012), which tend to overlook the central role the inhabitants of these enclaves play in improving livelihoods in rural areas. Other forms of internal migration such as seasonal migration, temporary migration and circular migration have all received less attention in the literature. The potential impact of *internal* migration and resultant private transfers on poverty and human capital in recipient households has remained, to a large extent, unexplored (Deshingkar, 2006). This represents a serious gap in knowledge, necessary for the development of coherent policies that maximise the development potential of migration.

The impact of the introduction of public transfers for the purpose of conflict prevention and peace building has not received much attention in the literature. A few nations; Kenya, Nepal, Rwanda, Sierra Leone and Timor-Leste, have introduced

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[2] See for example, (R. H. Adams, 2004; R. H. Adams & Cuecuecha, 2010b; Cuong, 2009; Du, Park, & Wang, 2005; Zhu & Luo, 2010)

[3] While international migration figures are updated annually, figures for internal migration beyond 2009 are not available.

programs on the premise of strengthening the relationship between state and citizens while also promoting social cohesion but there has been limited review of impact with more research required. (DFID, 2011)

1.2 Context and Rationale for the Study

At the time of undertaking this research there was no known data on internal migration and public or private transfers in Timor-Leste, a transitional post-conflict nation in the Asia Pacific. This small nation attained independence in 1999, became a democracy in 2002, and with a population of just over one million experiences some of the poorest health and education indicators in the world (Dawson, Howes, Gray, & Kennedy, 2011; DNE, 2010; GTL & UNDP, 2009; UNDP, 2011a). In common with small island economies (Armstrong & Read, 2002) the small size of Timor-Leste, both in land area and population, can restrict opportunity for economic growth, however, in the case of Timor–Leste, economic growth has been further compromised by a history of protracted conflict that cost the nation most of its infrastructure (Molnar, 2010). The population of Timor, predominantly comprised of rural subsistence farmers, is highly vulnerable to external economic and climatic shocks (Briguglio, 1995; UNDP, 2011a).

Globally, migration both internal and international has been recognised as a method by which households are able to spread economic risk and secure income insurance against external shocks. This is accomplished through private transfers, which enabled households to diversify their income sources, translating into increased risk-bearing capacity for households facing uninsured income risk, such as subsistence farmers (O. Stark, 1991a; Taylor, 1999; Taylor & Dyer, 2009). The importance of internal transfers should not be underestimated where household welfare levels in post-conflict, fragile or transitional states are negatively affected by limited employment opportunities and continual exposure to uninsured risks.

1.3 Research Aim and Scope

The overall aim of the study was to ascertain migration and internal transfer flows in Timor-Leste and examine the impact of these transfers on consumption and human capital in households of origin. The study was guided by the following six research objectives;

1. To document the internal migration patterns in Timor-Leste and the characteristics of migrants and migrant households;
2. To record cash and in-kind transfer flows in and out of the household;
3. To identify the primary sender/recipient of these transfers;
4. To measure the numerical value of public and private internal transfers in Timor-Leste;
5. To explore the role of internal transfers in the household economy in Timor-Leste and the impact they have on household consumption;
6. To examine if internal migration and transfers impact on human capital.

1.4 Transfers Defined

Firstly, the term 'transfer' as defined in this study, requires specific definition. The term remittance is commonly used in migration literature, referring to moneys sent by household migrants back to the household of origin (Alfieri, Havinga, & Hvidsten, 2005, p. 4). However, considering the context of Timor-Leste and the presence of government solidarity payments it was decided to use the term 'transfer' which for the purpose of this research included all 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 transfers from non-government organisations (NGOs) that are not a payment for goods or services provided by the household. It was necessary to adopt a broad definition of transfers in order to capture all private and public transfers of cash and goods into and out of the household. In the context of Timor-Leste[4], where unemployment and vulnerable employment were high it was probable that private transfers (remittances) would be low.

[4] Refer to Chapter Two for detailed discussion on the economic and employment context of Timor-Leste.

A burgeoning literature on cash transfers in conflict-affected countries and the introduction of the government pension to vulnerable groups in Timor-Leste stimulated interest in including public or government transfers to households in the transfer definition. The government solidarity pension was initiated at the end of 2008 and is discussed further in Chapter Two. In the context of Timor-Leste, the sporadic nature of the delivery of government solidarity payments meant that by nature they were more similar to migrant transfers than traditional pension payments that occur on a regular basis in other contexts[5].

1.5 Research Design

Using a mixed methods research design this thesis postulates that internal migration and public and private transfers can offer significant benefits to households in post-conflict nation states by providing a means for increasing the human capital of households and providing the poor with much needed social protection. Using a purposefully designed migration and transfer survey to address the aim offered distinct advantages over the use of other household surveys. Detailed data on specific migration and transfer variables enabled the identification of unique characteristics of migrant households and transfer-receiving households, while also capturing cash and in-kind transfers by source. Qualitative methods complemented the quantitative data, facilitating an in-depth examination of the lived experience of migration and transfers thereby providing a human face to the figures.

1.6 Limitations

Three main limitations were encountered during the study. Firstly, the study was restricted to only three districts of Timor-Leste. Thus generalisation of findings to the whole nation of Timor-Leste must be approached with caution. Second, the focus of this research was restricted to the impact of migration and public and private transfers on the household of origin. Third, the cross-sectional non-experimental nature of the household survey data placed limitations on the econometric analysis.

[5] Refer to section 2.4.3 for detailed summary of government solidarity payments in Timor-Leste.

These restrictions are explained and expanded on in Chapter Six[6]. Notwithstanding these limitations this research provided important insight into internal migration patterns and internal transfer flows in Timor-Leste.

1.7 Significance

1.7.1 The Theoretical and Methodological Significance

The theoretical significance of this research lies in the fact that it supports an argument for migration theory to look beyond an economic model of understanding and adopt a multidisciplinary livelihoods approach to understanding migration patterns and the impact of internal transfers.

The methodological significance of this study subsists in its mixed-methods approach. The study recognises the utility of the traditional quantitative household survey while bringing together a range of stakeholders' accounts to produce a rich and deep understanding of the impact of migration and internal transfers.

1.7.2 The local and global significance of the study

This is the first study on internal migration and transfers in Timor-Leste. Its significance lies in its contribution to migration and transfer research, policymaking and planning in a post-conflict transitional nation. At a local level, migration and transfer research in Timor-Leste has to date been limited to quantifying international transfers and a small study on international remittances in Dili. These are the first findings on *internal* migration and public and private in Timor-Leste and the results provide impetus for a larger nationwide study. As Timor-Leste strives to secure its place as an independent nation, the national policies on poverty reduction, social inclusion, peace and security will help determine future stability and prosperity. This research builds on the knowledge base needed to develop coherent policies that maximise the current and future development potential of migration in Timor-Leste.

Although the primary significance of this study is specific to the context of Timor-Leste, its findings help fill the gap in global knowledge on the impact of

[6] See also the review of empirical studies in Chapter Three

internal migration and public and private transfers, specifically in the context of a post-conflict transitional nation. Whilst a specific set of socio-political and cultural circumstances have affected migration and transfer flows, the issues Timor-Leste has faced during reconstruction and continues to face in nation building share many similarities with other post-conflict transitional nations. This research demonstrates that internal migration and public and private transfers do have significant impacts on households in a post-conflict and transitional nation, requiring more attention by researchers and policy makers.

1.8 Thesis Overview

The current chapter briefly introduces the study, identifying the gap in knowledge that served as the impetus for the research, and states the aim, scope and significance of the study.

Chapter Two will describe the research context, briefly outline Timor-Leste's tumultuous history and its recent political, human/social, and economic environment. The chapter will also overview Timor's financial sector, outlining limitations likely to impact on transfer flows.

Chapter Three will review migration theory as it relates to migration and private transfers, identifying empirical examples with a critique of internal migration and transfer literature. It discusses the challenges and limitations associated with the different methodological approaches to estimating the impact of migration and transfers.

In **Chapter Four** the research design adopted for this study will be outlined and justified with a description of data analysis and ethical considerations of the study.

The results have been split into two chapters. **Chapter Five** will present results from the descriptive analysis and **Chapter Six** reports the results from the multivariate and econometric analysis.

Chapter Seven will discuss the results and their relevance for Timor-Leste, specifically, and for other post-conflict nations. This chapter also offers

recommendations for policy makers in Timor-Leste and states the final conclusions drawn from the study.

Young girl in a village in Ermera

On the road to Viqueque

Chapter Two: Timor-Leste, a Historical and Political Overview

2.0 Introduction

Timor-Leste's complex and tumultuous political history has shaped the nation's current political, economic and human/social climate. In order to draw conclusions about migration patterns and the impact of internal transfers in Timor-Leste it is first necessary to describe the context in which the research took place. This chapter commences with a description of the location and geography of Timor-Leste followed by an overview of the nation's political history and its influence on migration patterns, demographics and infrastructure. The next section on human capital in Timor-Leste briefly describes current trends in education and employment. The final section offers a brief overview of the economy including the challenges of high poverty and a limited financial sector. This overview of the research context is used to interpret the findings presented in chapters Five, Six and Seven.

2.1 Location and Geography

The nation of Timor-Leste lies less than 400 kilometres (kms) off the north coast of Australia in Southeast Asia and makes up the eastern half of Timor Island (refer to Figure 2.1) with a total area of roughly 15 000 km^2. Rugged mountains run the length of the island with several peaks higher than 2000 metres. The landscape ranges from dry rocky hills to forested peaks, floodplains along major rivers and coastal plains 30 kilometres wide along the southeast coastline. Many of the rivers are predominantly broad-braided channels that turn into raging torrents after heavy rains and are prone to flash flooding. A combination of dried-up rivers during the dry season with the rocky limestone soils and steep topography make agriculture difficult leading to seasonal food and water shortages (UNDP, 2009).

Figure 2.1: Location of Timor-Leste

Source: (Worldpress, 2012)

2.2 History and Population

Timor-Leste is Southeast Asia's newest nation. Having experienced a tumultuous and violent past, the nation formerly known as East Timor gained independence in 1999 and became an independent state on 20th May 2002 after democratically held elections. The history included the division of the Timor Island into East and West in the mid-1800s when Portugal yielded the Western half of the island to Holland after over 200 years of colonial rule. On 28th November 1975, East Timor announced independence from Portugal but nine days later Indonesian forces invaded and annexed East Timor, declaring the nation a province of Indonesia. (Bork, 2004; Molnar, 2010)

The Timorese experience of migration has largely been conflict driven. For 25 years the Timorese resisted Indonesian rule, dividing the nation and leading to hundreds of thousands displaced within its borders and thousands fleeing to Indonesia, Portugal, Australia and other surrounding nations (Molnar, 2005). On the 30th August 1999, the United Nations sponsored a national referendum with over 70 per cent of the East-Timorese population overwhelmingly voting for independence from Indonesia. Indonesia responded by undertaking a rampage of violence and destruction, resulting in one third of the population fleeing across the border into West Timor as refugees (Bork, 2004). Between 1000 and 2000 Timorese were killed and over 80 per cent of the nation's infrastructure burned to the ground or destroyed

(UNDP, 2002). A United Nations-led transition period followed with international peace keepers (INTERFET[7]) deployed to help restore peace with independence declared again in 2002. (Bork, 2004; Molnar, 2010)

Poverty reduction was among the many critical issues that confronted the government of Timor-Leste during reconstruction. Poverty increased significantly in the early years of independence (World Bank & National Statistics Directorate, 2008) and was accompanied by increased unemployment[8] (DNE, 2008a). The rise in poverty and unemployment created disillusionment in the population, leading to the belief that the Dili government was not doing enough to improve living conditions.

In 2006 tensions within a disillusioned population and continuing divisions between the police, military and political elite combined to foment an internal conflict causing the displacement of over 250 000 Timorese who fled their homes (UNHCHR, 2006). The 2006 conflict had a severe economic impact; post-independence progress faltered and economic conditions worsened (UNDP, 2011a). Until early 2009, an estimated 150 000 people were residing on a permanent basis in temporary internally displaced camps, terrified to return home (IDMC, 2009). Recognising the risks to peace and stability[9] the government worked with partner agencies to design and implement peace building strategies. Many of these efforts have yet to be evaluated. Ten years post-independence, Timor-Leste remained classified as a country 'at risk' of internal political instability and a 'fragile state'. (UNDP, 2011c)

2.2.1 Current Internal Migration Trends

Post-independence, rural-urban migration accelerated. The 2010 population census reported 44.5 per cent of the population living in the nation's capital, Dili, were born elsewhere. Dili's population experienced an increase of 33.3 per cent since the census in 2004 (DNE, 2011c; UNDP, 2005). Push factors encouraging rural-urban migration were strong, with the UN stating that rural communities were confronted with the

[7] The acronym INTERFET stands for International Force for East Timor.

[8] Further discussion and figures reported in Section 2.4.

[9] Countries emerging from conflict are faced with over 40 per cent risk of relapsing in the first 5 years (World Bank, 2007a)

following challenges: low human and financial capital, non-availability of support institutions, lack of organised product and input markets, inadequate infrastructure, an absence of institutional credit and very limited access to micro finance services, in conjunction with distorted labour markets. (United Nations, 2009)

Many returnees also sought to develop a livelihood in the capital rather than return to their place of origin, a decision often exacerbated by land ownership issues brought about by repeated displacements (Earnest & Finger, 2006; Thu, 2008). Repeated displacement, forced resettlement, arbitrary occupation by others, and post-conflict resettlement, has resulted in multiple occupations of the one property over time. Land tenureship issues have prevented many returnees from resettling in their place of origin (Thu, 2008). The impact of international development agencies such as USAID, IOM, CARE, PLAN and the funds and programs of the UN, UNDP[10] since independence has also been a driving force in the rapid urbanisation of Dili (UNDP, 2009) as people seek employment with these agencies.

With an urban growth rate of 4.7 per cent it is anticipated that by 2025, the urban population will be twice its current size (Bulatao, 2008; UNDP, 2011c). Adding to the stress on infrastructure that a large number of migrants bring to the city is the lack of employment opportunities for migrants. In 2007 the National Living Standards Survey reported an increase in urban poverty by 20 per cent since 2001 (World Bank & National Statistics Directorate, 2008) which may highlight the growing number of rural-urban migrants failing to secure work in a tough economic environment.

2.2.2 Human/Social Analysis

In the years after Timor-Leste gained independence, the 2001 and 2004 census data recorded a 5.3 per cent increase in the population (DNE, 2004). Possible explanations for this rapid population increase could be the return of exiles and more children being born in a population feeling more secure. Census data from 2010 estimates the population of Timor-Leste at 1.06 million, with 41.4 per cent of the population under the age of 15 years (DNE, 2011d) and a population growth rate of

[10] The acronyms stand for: United Nations (UN), United States Agency for International Development (USAID), International Organization for Migration (IOM) and United Nations Development Program (UNDP).

2.4 per cent per annum (DNE, 2011d). The fertility rate is one of the highest in the world at 6.5 live births per woman, with average life expectancy reported as 60.2 years (Ferreira, 2008). If the population continues to grow at its current rate the nation's population would have doubled by 2033 (UNDP, 2011a). The rapid population growth poses potential problems for a young nation with limited capacity, infrastructure and services.

Violence that followed the 1999 referendum destroyed most of the country's economic and social infrastructure: over 80 per cent of the nation's schools and health clinics were destroyed; half of the livestock were lost; virtually all lines of communication, transportation, banking and documentation were lost. Power stations, market places, water systems, offices and houses were demolished (Molnar, 2010; UNDP, 2011a). In addition to the loss of physical infrastructure, the country also lost over a quarter of its civil servants, primarily Indonesians who had filled the highest positions in administration: judges, police, doctors, and secondary school teachers (UNDP, 2002).

During both Portuguese and Indonesian rule little attempt was made to train and improve the capacity and skill base of Timorese, relying on Portuguese and Indonesian human resources respectively (Molnar, 2010). As a result there has been a dearth of critical skills required to build a new nation (Shuaib, 2007) and poor human capital indicators demanding urgent attention by policy makers.

2.3 Human Capital in Timor-Leste

Human capital indicators suffered as a direct result of the lack of capacity building by the Indonesian administration. Large-scale destruction of schools limited the new nation's ability to strengthen the capacity of its people and secure a strong and capable workforce. Education and training policies and plans introduced since independence in 1999 will take time to have an impact.

2.3.1 Education

In 2001, the literacy rate of 15-24 year-olds was only 50 per cent, by 2004 this had increased to 72.5 per cent with the 2007 Timor-Leste living standards survey

reporting a literacy rate of 84.1 per cent for the age group (DNE, 2008a; UNDP & GTL, 2009). More recent enrolment rate figures, however, suggest the improvement in literacy may be fragile.

Enrolment rates in primary schools in Timor-Leste fluctuated from 65 per cent in 1999, increasing to 78 per cent in 2004 and reported at 70.6 per cent in 2010 (DNE, 2011d). With over 40 per cent of the population under 15 years of age such statistics are of concern for the nation's future human resources. The 'Base Law for Education' approved free education for all children under 17 years of age in 2008 (GTL, 2008) nevertheless people in rural remote areas have found access a challenge and the need to pay other expenses such as uniforms, books and other charges exclusive of tuition fees prohibitive. (UNDP & GTL, 2009)

In 2011 net enrolment ratios for pre-secondary and secondary schools were 40 per cent and 30 per cent for urban centres, respectively, and only 17 per cent and 9 per cent for rural areas, respectively (DNE, 2011d). According to the most recent National Development Plan, 70 per cent of children leave school before reaching year 9 with the highest dropout rate occurring in the first two years of primary school (GTL, 2012b). Presently, it is also taking 11.2 years on average for a child to complete education up to a grade 6 level. (GTL, 2012b)

The second participatory poverty assessment indicated that factors that inhibited access to education included; distance to schools, transport and quality of education available (GTL & UNDP, 2009). The link between poverty reduction and educational attainment was recognised by the Timorese during the assessment, with households repeatedly citing the lack of education as the main cause of poverty (GTL & UNDP, 2009). A small study of 105 households on international migration and remittances conducted in Dili in 2006 reported that 30 per cent of recipients used remittances on education expenses. Qualitative data from the study showed that recipients also pay for the education of other children, not members of their immediate household (Shuaib, 2007).

> Migration experience was a positive one for us…we can send [our] kids to school as well as some relatives to schools in other districts… (Shuaib, 2007, p. 210)

One of the many challenges for the Timorese Government is to increase numbers of primary and secondary schools across the country thus increasing access, and ensuring all children, even those in the most remote areas, have access to an education. Beyond physical infrastructure are other important factors that require consideration when discussing education in Timor-Leste, such as the paucity of qualified teachers in a nation with a human capital deficit. In 2010 there were a total of 12 000 teachers in Timor-Leste, 75 per cent of which were not qualified to teach, according to national standards. Intensive training programs have been implemented to address this issue but as in most nations worldwide, once qualified few wish to work in remote areas preferring the benefits of working in larger urban centres. (UNDP, 2011a)

Perhaps an even greater barrier to access than physical infrastructure and teacher quality has been the policies on language of instruction. In 2004 the Directive on Medium of Instruction declared Portuguese as the language of instruction in education (Molnar, 2005). Teachers found they were required to teach non-Portuguese speaking students a language they did not know themselves, with the majority of teaching resources also in Portuguese (Taylor-Leech, 2009). The Basic Education Act in 2008 (Ministry of Education, 2008) denoted an important change in the language of instruction with Article 8 including Tetun as an official language of teaching. Further developments were outlined in the 2011-2030 National Strategic Development Plan (GTL, 2012b) which stated that mother-tongue languages would be adopted as languages of instruction during the early childhood years, with Tetun and Portuguese being introduced in latter years.

> To improve access to education, and build a solid foundation for future literacy and numeracy in both Portuguese and Tetun, local languages will be employed as languages of teaching and learning in the first years of basic education, providing a smooth transition to the acquisition of Timor-Leste's official languages, in accordance with the recommendations of the 'Mother Tongue-Based Multilingual Education Policy for Timor-Leste'.(GTL, 2012b, p. 18)

By 2025, the population of primary and secondary school aged children is expected to increase by 70 and 90 per cent, respectively (Bulatao, 2008). The

reviews outlined in the 2011-2013 National Strategic Plan indicate that the Timorese government are committed to providing a basic education system based on the principals of social inclusion. Putting aside the controversial, long standing debate on language of inclusion, the improvement of quality of teaching combined with the decentralisation of quality high school education, tertiary and polytechnic institutes will be imperative to curbing rural-urban migration at its current rate. Studies[11] indicate that education would feature highly in the expenditure priorities of Timorese families if education of their youth led to paid employment in order to break the crippling cycle of poverty in Timor-Leste.

2.3.2 Employment

The World Bank in 2007 estimated 15 000 young people were entering the labour market annually, but without the necessary specialised skills the labour market was unable to absorb such numbers (World Bank, 2007b). Three years later the Labour Force Survey (2010) found over 80 per cent of those classified as 'employed' in rural areas were found to be in 'vulnerable employment', which was defined as:

> Persons who are employed under relatively precarious circumstances as indicated by status in employment' these people are unlikely to have a guaranteed salary each month with no job security. (ILO, SEFOPE, & DNE, 2011)

Migration to urban centres was seen as a livelihood and risk diversification option, however the same survey found that over 40 per cent of those employed in urban centres also experienced vulnerable employment and periods of unemployment.

The World Bank found job-creation in Timor-Leste was affected by the lack of investment opportunities and restrictive business policy that has severely limited the development of private enterprise (World Bank, 2008a). The high costs associated with setting up private enterprise acted as a deterrent to local Timorese interested in starting their own business. In its 2012 International Business Report, the World Bank ranked Timor-Leste 168th out of 183 countries for the ease of doing business estimating in the same report that 4.5 per cent of per capita income was required to set up a business in Timor-Leste with 103 days (nearly 4 months) recorded as the

[11] See (Bulatao, 2008; GTL & UNDP, 2009; Shuaib, 2007)

average timeframe (World Bank, 2012). This remained beyond the reach of the majority of Timor-Leste's population. Urgent review of Business Policy is required.

At the end of 2008, the government addressed the issue of unemployment with the introduction of a 'cash-for-work' program focusing on infrastructure. Skilled workers were paid US$5 per day and unskilled US$2 per day to repair roads and maintain the roads to their village (UNDP, 2011a) in a program that not only provided much needed employment and cash in rural areas but also assisted in improving access.

> 'Some of the workers are still high school students... this project can help them save cash to use for their education... the road is important, so that people can go to the local market... trucks and microlets (small minibuses used for public transport) are now able to get through, whereas they couldn't do so before'.
>
> -Responses from workers involved in the road reconstruction project in Ermera. (UNDP, 2011a, p. 20)

In a nation experiencing an acute shortage of skilled and semi-skilled workers access to technical training and training in specific areas of need is imperative to addressing the issue of high unemployment and building the nations capacity to meet the social and economic needs of reconstruction.

2.4 Economic Overview

2.4.1 Economy

Timor-Leste is dependent on non-renewable natural oil revenues, which make up 98 per cent of the government budget; current reserves are predicted to last, at the most, 15 years. The non-oil private sector was weak; for example the average decline of the agricultural contribution to the growth was 2-3 per cent per annum between 2001 and 2008 (Gomes, 2009). The majority of the population lived in rural areas and based their livelihood around subsistence agriculture with 78 per cent of males and 80 per cent of females working in agriculture, fishing or forestry (DNE, 2011d). Although such a large percentage of the population was dependent on the agricultural sector, low productivity meant it only represented 30 per cent of non-oil GDP in 2010 (UNDP, 2011c).

The lack of access to local markets and financial services, difficulty in selling local goods and the low price of agricultural products have caused people to consume the food they produce (GTL & UNDP, 2009). High living costs due to a dependency on imported goods, especially food sources, are one of the greatest challenges to alleviating poverty in Timor-Leste. Macroeconomic stability is fragile with price fluctuations subject to external factors and inflation rates difficult to control, leaving the poor highly vulnerable to external shocks in the economy. (DNE, 2011d; GTL & UNDP, 2009; UNDP, 2008b)

2.4.2 Poverty and Security

Timor-Leste remains one of the world's most impoverished nations. Ranked 134 out of 187 countries globally in the 2013 UNDP Human Development Index, it is the poorest country in the region with a per capita income of US$370 per year, falling to US$150 in rural areas (UNDP, 2013). Causes of poverty in Timor-Leste are multifaceted, complicated further by rapid population growth. The lack of ownership or access to adequate productive assets such as land prevents some households from participating in subsistence agriculture, the main source of food supply for the majority of rural households in Timor-Leste. A crop failure or unfavourable weather can lead to near starvation for many households. (GTL, 2012b)

The acute shortage of remunerative employment or jobs and poor access to social and economic services prevents households from an alternate source of income that can offer protection against natural shocks. Increases in prices of basic necessities also act as a barrier to households escaping poverty. Some of these causes are exacerbated by poverty leading to a cyclical problem. The most vulnerable have been those with little or no education, no work in agriculture, widows, orphans of the resistance, and veterans. (AusAID, 2009; IMF, 2005)

Among the many issues the government of Timor faces during reconstruction one of the most significant is poverty reduction. The most recently calculated poverty line is somewhat dated, calculated from the Timor-Leste Living Standards Survey (TLSS) in 2007. The subsequent poverty report estimated the cost of basic needs at US$0.88 per person per day (World Bank & National Statistics Directorate, 2008).

Table 2.2 shows an increase in poverty from 36 per cent in 2001 to 50 per cent in 2007 (World Bank & National Statistics Directorate, 2008).

Table 2.1: Poverty Indicators, 2001 to 2012

	2001	2007
Poverty Headcount Index	36.3	49.9
Poverty Gap Index	10.5	13.6
Squared Poverty Gap Index	4.2	5.1

Source: (World Bank & National Statistics Directorate, 2008, pp. 4-5)

Although no recent poverty figures have been calculated from expenditure data, the World Bank extrapolated data from the Demographic and Health Survey carried out in 2009-2010 using a survey-to-survey imputation method recalculating poverty incidence at 41 per cent in 2009. The 2010 National Census Report uses US$1.00 per person per day when calculating poverty indices (DNE, 2011a). The UNDP Human Development Report 2011 placed the basic needs poverty line at US$1.25 per person per day, estimating that 49.9 per cent of the population are living below the poverty line (UNDP, 2011b). At the time of writing the Government of Timor-Leste was undertaking a Household Income Expenditure Survey, which will enable the calculation of up-to-date national poverty estimates.

2.4.3 Government Solidarity Pension Payments

In an attempt to address the issue of rising poverty, the government increased public spending introducing social protection programmes which were initially in the form of non-cash benefits to households; rice distribution, school feeding program, small public works program, home rehabilitation and replacement of household goods in the case of natural disasters. However restrictions imposed by limited civil service capacity and the limited budget envelope resulted in ad hoc measures of implementation (Dale, 2013). In the aftermath of the 2006-2007 crisis the government expanded the social assistance program implementing a series of programs focussing on resettlement of the displaced, lowering tensions and promoting social cohesion.

By 2008 the economy of Timor-Leste began to recover with the Petroleum Fund balance rising in response to high global fuel prices. The government

implemented its first cash transfer program targeted at vulnerable populations. The first program to be initiated was a pension for the elderly, providing those over 60 years of age or with a proven inability to work with US$30 per month. The 'Mother's Purse' program was also initiated in 2008 providing social assistance through small cash transfers to children from vulnerable households on a conditional basis to assist with education related expenses (US$40/year for primary students, US$80/year for secondary students and US$160-240/year for university students). (Dale, 2013)

In 2008 cash transfers were also provided to veterans who fought in the resistance for independence ranging from US$ 2760 to US$ 9000 per annum. Those disabled in the fight for independence and female-headed poor households, also received US$ 30 per month (UNDP, 2011a). Table 2.3 illustrates a 34 per cent increase in beneficiaries[12] since the onset of the program in 2008.

Table 2.2: Government Solidarity Pension Payments from 2008-2011

Year	Number of beneficiaries	Budget Impact (US$)
2008	66 799	$16.0 million
2009	72 675	$17.8 million
2010	86 977	$30.8 million
2011	89 230	$31.6 million

Source: (GTL, 2012b, p. 47)

Government cash transfers have had an important role to play in addressing the upheaval of the 2006 crisis in Timor-Leste. Resettlement packages assisted those displaced by the crisis in their return home. Cash transfers of US$4500 were offered for the rebuilding of houses damaged during the violent clashes and in late 2009 a further US$500 was given to each of the affected households for assets lost during the crisis (GTL, 2012b). As a direct result of this program, by the end of 2010, nearly all the camps for internally displaced persons (IDPs) had been closed.

An important caveat to note, in the context of Timor-Leste is that not all the government pension payments are targeted at the poor, for example the veterans pension which consumes 60 per cent of the total social assistance budget. Among

[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 two years before the date of submission of application for the benefit.

those that are targeted at the poor high leakage rates are probable, ie the programs may cover a substantial share of ineligible people; lack of robust targeting systems leads to eligibility assessments that are prone to error and subject to manipulation. (Dale, 2013)

The second biggest social protection program is the elderly pension, which consumes 20 per cent of the budget. In the 2013 pensions report Dale reports that cash transfer programs are not reaching a significant proportion of the bottom 40 per cent with 60 per cent of the bottom two quintiles not reached by any of the social protection programs. (Dale, 2013) Due to Timor-Leste's limited banking infrastructure, discussed in the following section, and poor physical infrastructure social protection payments are not received monthly but rather are delivered annually by trucks with armed escort. (GTL, 2012b; UNDP, 2011c)

In a survey conducted by the World Bank in 2013 nearly one third of pension recipients reported having to travel over 90 minutes to a set location to receive their annual payment. (Dale, 2013)

Increasingly, social protection is recognised as an essential basic service for the poor (Sabates-Wheeler & Devereux, 2008). There is a move toward implementing cash transfers in post-conflict nations in preference to in-kind transfers that have previously dominated relief efforts in conflict-affected and transitional contexts (Holmes, 2009). Where food aid, distribution of basic goods and agricultural assistance have operated in conjunction with water and sanitation, health and education programs, there is now a strong move toward cash based social protection. (Harvey & Bailey, 2011; Harvey & Holms, 2007)

Proponents of cash transfers in conflict-affected countries and post-conflict transitional nations recognise two conspicuous objectives in addition to poverty reduction that may have direct effects on the peace process. These are to diffuse potential for further internal dissention by targeting resources to specific vulnerable groups, and to reinforce government-citizen relations. (Holmes, 2009; Slater, 2009)

2.4.4 The Financial Sector in Timor-Leste

The financial sector of Timor-Leste was destroyed in 1999 when the Indonesian occupation ended. Access to finance, although inadequate, has experienced steady growth since independence with an estimated 13 per cent financial inclusion in 2009 (Day, 2010). In 2010 services and capacity were limited; three foreign owned banks offered restricted services to the population. The Australia New Zealand (ANZ) bank, Dili branch, provided small loans to Timorese nationals with their employee salary as collateral (Dasilva-Cruz, 2011). The ANZ also offered electronic transfer services, introduced ATMs and in 2007 was planning to extend its services into rural areas by way of a mobile banking model (Shuaib, 2007), although at the time of writing this was yet to be realised.

The Caixa Geral do Depositos (CGD) is a Portuguese bank with a central office in Dili and six district branches in Baucau, Gleno, Maliana, Oecusse, Viqueque and Suai. The bank was a service provider for microfinance institutes and was also the only bank to offer savings deposits to individuals employed in the informal sector and in rural areas (Hansen & Agus, 2005). Bank Mandiri is an Indonesian bank that concentrated on commercial enterprise, servicing Indonesian, Chinese and other businesses in Timor-Leste. (Shuaib, 2007)

The developing microfinance sector had proven to be resilient to shocks and crisis. The main registered microfinance operator was the Instituicao de Microfinance de Timor-Leste (IMFTL), established in 2001. In 2009 IMFTL was seeking a commercial banking license with the intention to privatise, at which time it would become Timor-Leste's first state owned bank. Its primary role was collection of deposits and provision of loans of public sector employees. Increasingly IMFTL is taking on responsibility for government transfers (Day, 2010). Moris Rasik the largest rural microfinance organisation in Timor-Leste with 13 branches and in excess of 10 000 clients, also offered savings facilities. Moris Rasik was established with support of the highly successful Bangladesh Grameen Bank and had a 98 per cent repayment rate, becoming operationally self-sufficient in 2007 (Day, 2010; Hansen & Agus, 2005; Magno, 2010). Government regulations had placed restrictions on Moris Rasik, preventing further expansion and prohibiting the initiation of transfer services. (Magno, 2010)

Tuba Rai Metin, a smaller, less developed MFI targeted women, running microfinance initiatives through solidarity groups. It functioned on a much smaller scale, reporting 2 800 clients in 2009 (Day, 2010). Credit Unions in Timor-Leste have had a poor reputation, many having closed down and those remaining described as weak with questionable accountability. Despite these limited services a study conducted by Monash University in 2007 (Shaw & Eversole, 2008) found increasing demand for savings accounts. Savings accounts were found to be the financial product of choice for individuals in the lower-income bracket, contributing almost a third of total deposits. In 2013 the Asian Development Bank and the United Nations Capital Development Fund (UNCDF), in collaboration with a local partner INFUSE (Inclusive Finance for the Under-served Economy), had completed a feasibility study on the use of mobile banking technology in Timor-Leste. The results were not publicly available at the time of writing the present thesis.

Limitations imposed by insufficient banking infrastructure inhibit the efficient and secure delivery of transfers both from internal sources and international sources.

2.5 Conclusion

This chapter has provided a brief contextual overview of Timor-Leste and the challenges it faces as it attempts to build a strong independent nation state. Historically, the Timorese have had limited opportunity to build their human capital through education and skill development largely restricting employment opportunities for much of the population. The growth in rural/urban migration may offer households in Timor-Leste with opportunity to diversify income and access further education. With the recent high rates of 'vulnerable' employment it is unlikely many of these migrants will secure employment.

Limited access to financial services in the rural areas, indicate that even when a migrant does find work and is able to remit some of their wage, transferring that money to the household could pose a challenge. Familiarity with the many facets particular to the Timorese political and economic context is fundamental to understanding migration trends and the impact of public and private transfers at the

household level. In order to interpret these trends it is also necessary to have an appreciation of migration and transfer theory as well as findings from prior empirical studies examining the impact of transfers on households, both of which are addressed in Chapter Three.

Old Woman in a village in Ermera

Chapter Three: Migration and Transfers: an Empirical Overview

3.0 Introduction

This chapter examines prior empirical studies on internal migration and the impact of public and private transfers on poverty and human capital in developing nations. A review of previous research establishes what is known and has been experienced in other contexts, whilst facilitating the identification of knowledge gaps. This review also provides the theoretical underpinning for choosing the methods of data collection and analysis described in Chapter Four.

Section 3.2 of this chapter summarises the historical development of migration and transfer theory. The sustainable livelihoods framework, which forms the conceptual framework for this research is also introduced in the section. Section 3.3 presents an in-depth review of previous empirical studies on internal migration and the impact of private transfers on poverty and/or human capital in developing nations[13]. An explanation of the various methodological approaches adopted by researchers is provided within this review.

3.1 Migration and Transfer Theory

Migration is complex and the reasons people migrate multifaceted. Migration theory is, as a result, divided among academic disciplines. Schools of economics, anthropology, geography and sociology have developed different approaches to understanding migration. The scholarly debate on migration and development has facilitated the development of a more hybrid approach to migration theory, although this has proved challenging with the combination of different theoretical perspectives across disciplines (de Haas, 2010). An awareness of the recent developments in migration theory increases the understanding and appreciation of the complexity of

[13] The systematic literature review was published by the Population, Space and Place Journal in 2013. See Appendix Ten for the reproduction.

the migration and private transfer process, helping explain why the literature and empirical studies have adopted a variety of theoretical approaches and research methods in the study of these complex topics. This section will provide a brief overview of migration theory to date and what it means in understanding private transfer behaviour.

3.1.1 Neoclassical Theory

Neoclassical migration theory was formulated during the industrial era. Theorists saw migration as a response to the geographical differences in demand and supply for labour. High wages in urban areas acted as a pull factor for individuals in rural areas where wages were low. It was thought that the re-allocation of labour from rural, agricultural areas to urban, industrial areas was a prerequisite for economic growth, expected to lead to wage equalisation at origin and destination resulting in a cessation of migration. (Todaro, 1969)

However patterns of migration have increased in complexity. Although wage differentials do act as a pull factor, it is not a sufficient explanation of migration patterns where many migrate in spite of minimal wage differential prospects (de Haas, 2007). Neoclassical theorists adopted an individualist approach to migration where the decision to migrate was considered the decision of the individual migrant independent of household or the community. The neoclassical model also implied that the migrant was cut off from his/her place of origin once migration occurred providing no rationale for remitting. (de Haas, 2010; Taylor et al., 1996)

3.1.2 Historical Structural Dependency Theory

The late 1970s and early 1980s saw a shift in views on migration and development. Migration was no longer seen as facilitating development but was now held responsible for increasing disparities in regional development levels (de Haas, 2010). Migration theory became grounded in a broader socioeconomic and political context. Empirical studies supported the hypothesis that migration reinforced and prolonged underdevelopment, promoting social inequality (Lipton, 1980; Reichert, 1981; Rubenstein, 1992). The combination of ‘brain drain’ and ‘brawn drain’ (the loss of young, strong workers in rural agricultural areas) was blamed for the withdrawal of human capital from rural areas (W. Adams, 1969; Penninx, 1982). Although the

historical structural dependency theory embraced the idea of private transfers, transfer usage was viewed in a pessimistic light with researchers arguing that private transfers were spent on capital accumulation and rarely on productive investment. (Lipton, 1980; Rempel & Lobdell, 1978)

A 1978 review of 50 international remittance case studies commissioned by the International Labour Office (ILO) concluded that the majority of international private transfer receipts were spent on housing, education or consumer goods (Rempel & Lobdell, 1978). Similar patterns of spending was reported in Taylor et al. (1996) citing global studies (Egypt, Turkey, Yemen, Sub-Saharan Africa, India, Thailand, Philippines, Samoa and the Americas) where private transfers were spent on 'conspicuous consumption' rather than production. Lipton (1980), estimated that over 90 per cent of transfer income was spent on consumption that re-enforced personal and family status in the community (e.g., bride price, funeral rites and high-status housing).

Empirical studies supported the view that, even when private transfers were directed at investments, they led to a transfer of capital rather than creation of capital such as investments in land, labour, and mechanisation which rarely generated increased outputs (Rubenstein, 1992; Zachariah, Mathew, & Rajan, 2001). Such conclusions resulted in private transfers being blamed for weakening local economies, causing inflation and promoting a 'dependency' mentality among recipients, where recipients of transfers came to depend on the transfer receipts and spent them rather than investing them in order to improve their own economic situation in the long term (D Massey & Eggers, 1990). Prior studies have also found that the receipt of private transfers can decrease participation in the labour market. (Azam & Gubert, 2006; Lucas & Stark, 1985)

Conversely other empirical studies concluded that productive investment of international transfer receipts was shown to occur in some communities. In Guadalajara, Mexico, for example, 31 per cent of migrants used international transfer savings to set up micro-enterprises (Escobar & Martinez, 1988). Woodruff and Zenteno (2007), based in Mexico, found international transfer-receipts enabled recipients to expand and develop micro-enterprises. Other researchers did not see the

focus on consumption rather than investment in a negative light arguing that a transfer-driven increase in local consumption, especially in rural areas, has second and third round effects on the broader economy. By way of multiplier-effects, transfers could lead to economic growth as consumption increased the incomes of households that supply goods and services. (Ghosh, 2006; Taylor et al., 1996)

Taylor et al. (1996) suggested two obstacles that prevent migration from having a positive effect on local development. The first obstacle is lack of infrastructure and public services at local village and rural level, which inhibits the investment in, and expansion of, local production. The second obstacle is the lack of well-functioning local factor markets, especially rural credit markets. It is a view supported by Stahl and Habib (1991) who conclude that complementary government investment in rural areas is required if migrants are to channel transfers to local businesses who have the capacity to respond to increases in demand and thereby promote economic growth.

Lieten and Nieuwenhuys (1989) shattered the dependency theory when they suggested that poor people are not silent victims of global capitalism but rather active participants who act to improve their livelihoods by employing whatever means they have within their capacity. High levels of poverty, inequality and income volatility combined with high dependence on subsistence agriculture vulnerable to erratic climate changes make access to credit and insurance markets crucial in low-income and developing countries. The limitations on migration theory prevented further examination of the complex relationships between migration, transfers and development at community and household level.

3.1.3 The New Economics of Labour Theory (NELM)

During the next decade (late 1980's and 1990's), migration theory expanded as migration scholars recognised the heterogeneity of migration impacts. O Stark and Bloom (1985) guided the evolution with their assertion that the 'household' rather than the 'individual' was responsible for decision making on migration issues. Migration became viewed as a livelihood strategy in nations where capital markets are weak and often inaccessible to the majority of the population, presenting inadequate access for credit and insurance needs.

Migration was no longer understood as a means of increasing income but rather as a means of minimising income risk for the household as a unit (O. Stark, 1991b; O. Stark & Levhari, 1982). Although the NELM views migration as a household risk-diversification strategy to improve livelihood, the theory restricts itself to a macro and micro economic interpretation of migration where private transfers are perceived as one of the main motivators for migration. The theory does not allow for an interdisciplinary interpretation of migration. Recognising this limitation, de Haas (2010) links the new economics of labour migration with the livelihood approaches developed by sociologists and anthropologists in the late 1970's.

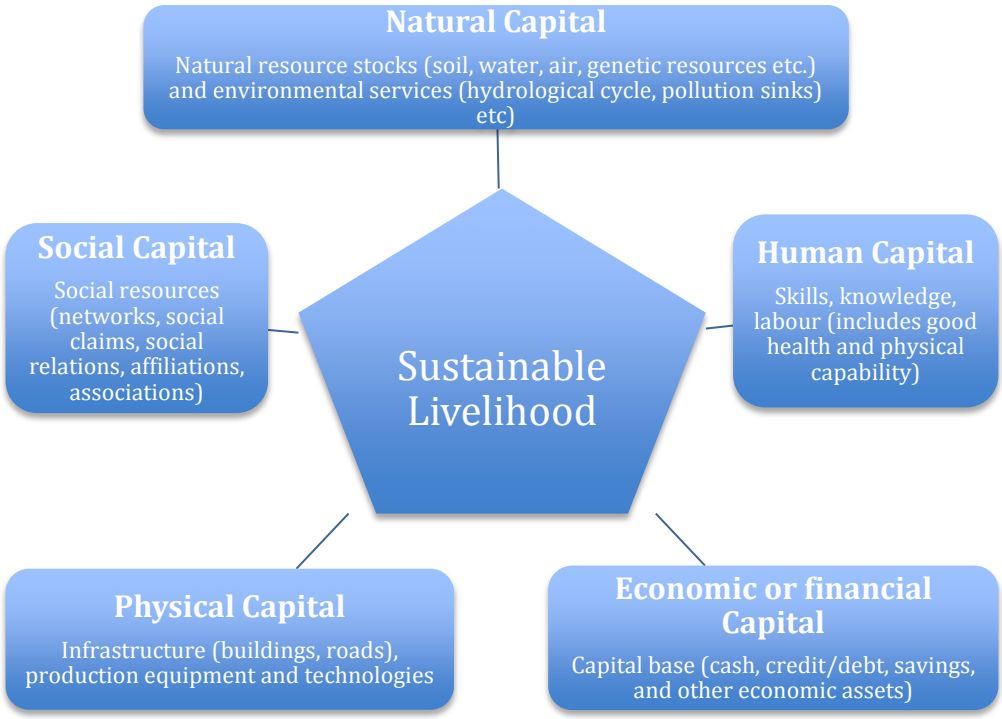
3.2 The Sustainable Livelihoods framework

The livelihoods framework increased in prominence in the 1990s (Ashley & Carney, 1999; Carney et al., 1999; Chambers & Conway, 1992; Scoones, 1998). The framework recognises that economic factors alone do not contribute to household livelihood. Scoones (1998) defines sustainable livelihoods as:

> A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base. (Scoones, 1998, p. 5)

Under the livelihoods framework five principal assets (capitals) are considered important to individual and household livelihoods. Figure 3.1 illustrates these assets in the form of the livelihoods pentagon. While all forms of capital are necessary for livelihood, households may prioritise one over the other at different stages of the household lifecycle (Scoones, 2009). Households often follow a generational pathway, where each generation strives to improve the livelihood of the subsequent generation involving a series of livelihood choices made over time.

Figure 3.1: The five capitals of sustainable livelihood



(Morse, McNamara, & Acholo, 2009, p. 5)

Three core livelihood strategies are recognised in the sustainable livelihoods framework; agricultural intensification/extensification, livelihood diversification and migration (Scoones, 1998). Under these categories gains in livelihood are met in three different ways:

(i) Increased investment in agriculture by way of more output per unit area or obtaining more land for cultivation,

(ii) Diversification involving non-agricultural income generation activities,

(iii) Temporary or permanent relocation in order to seek a livelihood elsewhere. (Adger, Kelly, Winkels, Huy, & Locke, 2002; Scoones, 2009)

Identifying which capital or combination of capitals will be required for different livelihood strategies is core to understanding and managing the complexity of livelihoods. It is the dynamic and temporal nature of the five capitals and livelihood strategies that help shape migration patterns. The complex relationships between household decisions and the context in which they are made are often more than purely economic.

3.2.1 Social Capital

Social capital is defined as the social resources such as relations, affiliations, and social structures which are called upon to enable those within its bounds to pursue different livelihood strategies (Morse et al., 2009). The presence of social networks has been shown to be a powerful influence on whether a household sends a migrant and to which destination the migrant chooses (Boyd, 1989; Guilmoto & Sandron, 2001). Boyd (1989) presents an overview of research findings on the determinants and consequences of personal networks including family, friends and community networks on migration decisions to industrialised countries.

The existence of established networks was found to be central to the migration decision. Sandron and Gullmoto (2001) examined internal migration networks in developing countries concluding that established migrant networks decrease migration costs for new migrants, facilitating an escalation of rural-urban migration. The rules and obligations that underlie social capital may also pose restrictions on household migration decisions (De Jong, 2000). DeJong (2000), for example, using longitudinal data from the Thailand National Migration Survey, found gender roles significantly influenced migration decisions with marked differences in expectations on men and women.

3.2.2 Physical Capital

Physical capital acts as both a driver for migration as well as a force to curb migration flows. Where roads and infrastructure are in very poor condition, access to basic services and employment is restricted. Facing these circumstances households often choose to send a household member as a migrant. Alternatively where physical infrastructure is in place in the form of good roads and transport systems, access to services, technologies and necessary equipment for production, migration may not be the livelihood strategy of choice.

3.2.3 Natural Capital

Natural capital is closely linked to physical capital, based on natural resource stocks such as soil fertility, access to water and climate. Most rural livelihoods are dependent on natural resource capital to a certain extent. The ability of households to maintain productivity when subject to stresses and/or shocks can influence migration

decisions. The depletion of natural resources and/or climatic shocks can result in forced migration as households leave in search of a more secure livelihood. (Alibekov & Alibekova, 2007; Meze-Hausken, 2000)

Alibekov and Alibekova (2007) in their discussion of the socioeconomic consequences of desertification in Central Asia, describe the forced migration of several thousand households as a direct result of the drying of the Aral Sea. Meze-Hausken (2000) found in her study of drought-induced migration in Northern Ethiopia that vulnerability to climatic shocks varies depending on the household's capacity to develop adaptation mechanisms. Where adaptation is restricted or is beyond the capacity of the household, climatic migration occurs. Natural capital can also act to prevent migration as a livelihood strategy. Where agricultural productivity is high, migration may not be the most effective livelihood strategy, particularly when household members are required for labour.

3.2.4 Human Capital

Human capital encompasses the skills, knowledge and labour of the household, including health and physical capability. Both policy makers and households understand the significance of education and skill development in improving livelihood prospects (Colclough, 2012; Van der Berb, 2008). Poverty is linked with poor education outcomes and low-level skills (Becker, 1995; Jandhyala, 2002). Rural education systems are under stress in many developing nations with migration to urban centres viewed by households as a necessary livelihood strategy in order to gain access to quality higher education and the skill development necessary for realising human capital goals. (Ellis, 1999)

3.2.5 Financial Capital

Lastly, financial capital considers the household's financial assets and capital base including cash, credit/debt, savings and other economic assets, basic infrastructure, production equipment and technologies which are essential for the pursuit of any livelihood strategy. Livestock may be sold or savings used to fund migration of a household member with the intention that the investment will pay dividends over the lifecycle of the household (Carling, 2008). Carling (2008), in his discussion on the determinants of private transfers, recognises inter-temporal contractual arrangements

associated with migration whereby migrants send transfers as repayment for the household's investment in human capital and migration costs.

Livelihood diversification is important for poverty reduction and rural survival. Within the livelihoods framework poverty is interpreted under a broader definition of the lack of choice with respect to coping strategies in addition to the lack of economic assets. Economically poor households may have other assets such as their health, able labour, knowledge, skills and motivation to improve their situation. (Morse et al., 2009)

The growing recognition that migration is a dynamic process involving the household in decision-making is returning the focus of migration research back to the household of origin. Recent empirical research increasingly acknowledges the complexities in migration and development, although most research continues to view migration as purely an economically driven decision (Fargues, 2011; Ratha, Mohapatra, et al., 2011; Taylor & Lopez-Feldman, 2010). The following section reviews empirical research on *internal* migration and the impact on poverty, consumption and human capital in origin households.

3.3 Review of Empirical Literature

This review brings together available literature on the impact of *internal* migration and private transfers on origin households in developing countries. A systematic review was conducted using six electronic and four informal databases. Using narrative synthesis, eighteen studies were reviewed[14]. The results of the review provide strong evidence that internal migration is an important poverty reduction strategy with private transfers having the greatest impact on the poorest households. Internal private transfers not only improve livelihood by decreasing the household depth and severity of poverty but also increase household investment in education and housing.

[14] This review was published in the Population, Space and Place journal (2013) reproduced in Appendix Ten. The paper provides details on methodology, framework, inclusion and exclusion criteria and a table of the final selection of empirical studies.

The research context in which all studies were carried out bore similar economic characteristics, although undertaken in eleven different countries on four continents. Study households were largely situated in locations with inadequate markets, unequal employment opportunities, a lack of human capital and limited or no access to wealth or physical assets. Households participating in migration and/or receiving private transfers represented a significant proportion of study populations. The literature presented was fundamental to the design and development of the research presented in this thesis.

The following review has three subsections. The first highlights findings on the impact of internal private transfers on income, consumption, poverty and human capital[15]. The second provides a brief outline of methodological approaches and challenges associated with measuring the impact of transfers and the third section offers an overview of the varying degrees to which endogeneity is recognised and dealt with.

3.3.1 Impact of Internal Transfers on Recipient Households

This section will summarise findings on the impact of internal transfers on households of origin then discuss how those findings influenced the econometric techniques adopted by the researcher in order to address these matters.

3.3.1.1 Private Transfers and Income Distribution

Private transfers can be a significant source of household income and consumption, especially among the poorer households. A large share of households receiving private transfers, were consistently found in lower income distribution groups. Ranking all study households in Ghana and Guatemala into decile groups on the basis of predicted per capita household expenditure, (R. H. Adams, 2004, 2006) noticed that although the largest share of private transfer receivers were found in the eighth and ninth deciles of the expenditure distribution, a substantial share of transfer-receiving households were also found in the lowest income decile.

[15] Section 3.3.2 on Internal Migration, Transfers and Human Capital did not form part of the published systematic literature review (Appendix Ten).

When households in the lowest decile received an internal transfer their expenditure increased by nearly 15 per cent in Ghana and by over 40 per cent in Guatemala. The effect of transfers on lowest income households in Thailand was also shown to be substantial with 85 per cent of the poorest households reporting receiving private transfers, compared with 34.2 per cent of the wealthiest (Osaki, 2003). In China (Snyder & Chern, 2009) it was households from the middle income quartiles that were more likely to receive a private transfer (40 per cent), compared with 32 per cent in the lowest quartile.

Although Snyder and Chern (2009) indicated that the cost of migration was a barrier for poorer households, such a conclusion is difficult to sustain as households were categorised according to whether they received a private transfer but not whether the household participated in migration. An important caveat to consider is that when income was further disaggregated by Snyder and Chern (2009) into the lowest and highest decile, 25 per cent of households in the lowest 10 per cent reported receiving a private transfer.

These studies were conducted in diverse contexts, based on different sample sizes; however, a common finding is that private transfers did reach a significant proportion of the poorest households. (R. H. Adams, 2004, 2006; Osaki, 2003; Snyder & Chern, 2009)

The reviewed literature estimating migration and transfer impacts on household income reports a marked increase in household income compared to non-migrant/non transfer-receiving households[16]. Several studies found that if households had not participated in migration or received private transfers their income would have been lower than non-migrant households. Taylor et al. (2003) took this analysis further, examining the total effect of migration on each income source. The loss of farm labour to migration was shown to have a significant negative effect on income from crops, although it was felt that migrant transfers compensated for this loss. In contrast, a three-district study in China found that households earning local wages

[16] See R. H. Adams (2004, 2006); R.H. Adams, A. Cuecuecha, and J. Page (2008a); R.H. Adams, A Cuecuecha, and J Page (2008b); Cuong (2009); de Brauw and Harigaya (2007); Du et al. (2005); Osaki (2003); Quisumbing and McNiven (2010); (Taylor, Rozelle, & De Brauw, 2003); Zhu and Luo (2010)

had higher total incomes than those receiving private transfers, concluding that local opportunities were not sufficient to absorb labour and that local wage employment would likely be preferred to migration (Snyder & Chern, 2009). However, the authors failed to consider how individual characteristics of households such as education, skills, and ethnicity might prevent members from finding local employment and contribute to migration decisions.

With internal migration affecting more families in the lower income bracket, it is reasonable to assume that the absolute gain in income among the poor will have an equalising effect on income distribution. This supposition is supported by transfer literature, which argues the effect on inequality is dependent on contextual factors including the economic position of those households participating in migration, type and amount of transfer received and migration history of participant communities (O. Stark, Taylor, & Yitzhaki, 1988; Taylor & Wyatt, 1996). Further support for this contextual variation comes from studies in Nigeria (Odozi, Awoyemi, & Omonona, 2010), Thailand (Osaki, 2003), Guatemala (R. H. Adams, 2004) and China (Zhu & Luo, 2010) showing internal migration and transfers decrease income inequality, while studies in Ghana (R. H. Adams, 2006; R. H. Adams et al., 2008a) had the reverse effect possibly due to the high proportion of Ghanaian households in the upper expenditure deciles reporting receiving both internal and international transfer transfers. If transfers flow disproportionately to wealthier households a positive effect on the Gini index[17] would be expected.

The preceding literature review demonstrates that poorer households were more likely to send out internal migrants with findings also demonstrating private transfer flows were acutely directed toward households of lower economic status (R. H. Adams & Cuecuecha, 2010b; Cuong, 2009; Snyder & Chern, 2009). Findings support recent developments in migration theory, which postulate that in the face of inadequate markets, households reallocate resources (specifically labour) in order to diversify economic risk and improve livelihoods. (O. Stark, 1991b)

[17] The Gini index is used to measure income inequality. A Gini index of zero indicates perfect equality, where all values are the same (eg. Income is the same for all). A Gini index of 1 represents maximum inequality among values (eg. Where one person has all the income).

3.3.1.2 Transfers and Consumption

The World Bank argues that in low-income contexts, income is often an unreliable estimate of household welfare[18] due to the many problems associated with defining and measuring income for those self-employed in agriculture (World Bank, 2005a). In addition households are more often able to recall what they have spent than what they have earned, with consumption recognised as more stable than income (Deaton, 1997; World Bank, 2005a). For these reasons some studies used expenditure data in preference to income data, although this is inconsistent across studies. The way consumption is measured can vary with studies using *aggregate* consumption expenditure, others choosing *per capita* or per *adult equivalent* consumption expenditure.

Re-estimation of expenditure equations by de Brauw and Harigaya (2007) found the estimated coefficient to be higher when per adult equivalent expenditure was used rather than the same specification using per capita expenditure. Similarly, Maitra and Ray (2003) reported a higher incidence of poverty when adult equivalent scales were used compared to the poverty incidence using per capita expenditure. Conversely, in re-estimating the average treatment effects (ATT) on marginal budget shares using adult equivalent scales, R. H. Adams and Cuecuecha (2010b) found per capita household expenditure generated an overestimation.

Internal private transfers were found to increase consumption in recipient households in Guatemala by 43.8 per cent (R. H. Adams, 2004), Ghana by 29.8 per cent (R. H. Adams, 2006; R. H. Adams et al., 2008b), Philippines by 8.9 per cent (Quisumbing & McNiven, 2010), Thailand by 13.7 per cent (Osaki, 2003) and, to a lesser extent, in Vietnam by 6 per cent (Cuong, 2009). The one exception was Albania, where no effect of internal private transfers on consumption was found (Castaldo & Reilly, 2007), the authors suggest that this may be due to the small sample of households reporting receipt of an internal transfer or that internal migrants may be engaged in poorly remunerated employment, thereby remitting nominal amounts. Migrants themselves can face many challenges even when

[18] The World Bank defines household welfare as 'an ideal measure of welfare will reflect the total utility derived from all goods and services consumed' (Hentschel & Lanjouw, 2006, p. 1).

employment is secured. The high cost of living in urban centres, increased exposure to theft and exploitation, lack of protection and exposure to an abuse of rights, leave migrants vulnerable and can impact on their ability to remit home.

The impact of transfer income on consumption is analysed in three different ways in the literature: estimation of the marginal propensity to consume (MPC), estimation of the marginal budget share (MBS) and estimation of impact on poverty.

Marginal Propensity to Consume

The MPC is measured as the ratio of the change in consumption to the change in income (Mankiw, 2008). Snyder and Chern (2009) analysed the MPC out of internal transfers in households from three provinces of China, finding significant ($p<0.01$) increases in consumption on total living costs by 31 per cent, non-food by 23 per cent and food by 8 per cent. A study examining household consumption behaviour in Malawi found that internal transfer-receiving households have a higher MPC education out of transfers than non-receiving households. (Davies, Easaw, & Ghoshray, 2009)

Marginal Budget Share

The MBS is defined as how much additional income consumers allocate to respective goods (Mankiw, 2008). Households receiving internal private transfers in Guatemala spent 377 per cent more at the margin on education and 136 per cent more at the margin on housing. (R. H. Adams & Cuecuecha, 2010b)

Private transfer transfers in South Africa had a positive impact on budget shares of food and education with households spending 12 per cent and 14 per cent more on each item respectively (Maitra & Ray, 2003). Transfer income was shown to increase household expenditure on housing, consumer durables, food and education in the Philippines (Quisumbing & McNiven, 2010) and increased household expenditure on food, non-food and health in Vietnam (Cuong, 2009). Conversely, R. H. Adams et al. (2008b) found no differences in the marginal spending behaviour of transfer-receiving and non-receiving households, concluding transfers are spent like any other income. The inconsistencies in the research findings presented above demonstrate further research is needed to determine whether household spending

patterns are influenced by income levels and household characteristics, or the source of the income.

The fungibility of transfer income is often assumed; that is, a dollar of transfer income is seen to be equivalent to a dollar of wage income, and the marginal propensity to consume out of all income regardless of the source is assumed equal (Friedman, 1957). This is commonly referred to in migration literature as 'income pooling'. Findings from the literature are incongruous, with studies finding no difference in the marginal spending behaviour of internal transfer-receiving and non-receiving households, concluding that transfers were fungible and spent like any other source of income (R. H. Adams et al., 2008b). Others (Davies et al., 2009) showed clearly the marginal propensity to consume some expenditure items (e.g. education) out of transfer income was substantially higher than for farm or salary income.

Maitra and Ray (2003) found that private transfers and public pensions had different impacts on household expenditure patterns, concluding that source of income had a significant impact on consumption. Maitra and Ray (2003) suggest three possible explanations for these variations in consumption. In their study private transfers were calculated by combining the value of in-kind transfers with the sum of cash transfers. Therefore, if the value of in-kind transfer constituted a large proportion of the total private transfer this would help explain differences in consumption. Alternatively private transfers may be sent for a specific purpose such as health care related costs, home improvements, education or social events; pre-determining expenditure. Another possible explanation was that characteristics of the recipient of the transfer might also impact how the funds are spent. The person receiving a private transfer may have had different needs, preferences and expenditure patterns than a person receiving a public pension.

Internal transfers have been shown to represent a significant portion of total household income/consumption in poor households with the literature reporting increases in recipient household income and consumption of between 6 per cent in Vietnam (Cuong, 2009) and more than 43 per cent in Guatemala (R. H. Adams, 2004). The most commonly reported increases in expenditure, related to transfer

receipts were increased expenditure on food, education and housing. Previous research has viewed consumption on food, education and housing with pessimism, speculating that true development impact will only occur when households use income for savings and 'productive' investment purposes where 'productive' investment is defined in terms of small business and agricultural inputs (Massey and Parrado, 1994). Massey and Parrado utilised data from 22 communities in Mexico to estimate the flow of transfers from the United States. They found that the majority of transfers were spent on consumption with only 7 per cent being spent on investments in 'productive' activities.

This narrow interpretation of productive investment ignores the impact that increased expenditure on other expenditure items may have follow-on effects that impact on the welfare of individual household members. Improved nutritional status of children from either more regular intake of food or increased variation in diet can help improve retention at school (Cox & Ureta, 2003). Non-food consumption may include clothing, blankets and hygiene needs, all of which can positively impact the health of members of the household, thereby improving household welfare.

Transfer Impact on Poverty

Significant predicted changes in poverty measures among migrant and/or transfer recipient households were reported in studies conducted in seven countries: Ghana (R. H. Adams, 2006; R. H. Adams et al., 2008a; R. H. Adams et al., 2008b), Nigeria (Odozi et al., 2010), South Africa (Maitra & Ray, 2003), Guatemala (R. H. Adams, 2004), Vietnam (Cuong, 2009; de Brauw & Harigaya, 2007), Nepal (M. Lokshin, Bontch-Osmolovski, & Glinskaya, 2010) and China (Zhu & Luo, 2010). The findings revealed a decrease in poverty headcount ranging from 1 per cent (Guatemala) to 69 per cent (Ghana) with the size of reduction dependent in some cases on the type of transfer received.

Where internal and international transfers were separated in the analysis the greatest impact on poverty was consistently found in internal transfer-receiving households with a reduction of the squared poverty gap by 4 per cent in Ghana, 21 per cent in Guatemala and 54 per cent Ghana. The squared poverty gap indicates the severity of poverty. 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 (World Bank, 2005a). Results indicate that even in cases where minimal impact is seen on poverty incidence, the severity of poverty significantly decreases in households receiving internal transfers. Similarly, Zhu and Luo (2010) in their estimate of the impact of migration on rural poverty and inequality in China found that internal transfers decreased the squared poverty gap by 4 per cent.

Five studies failed to differentiate between internal and international migration and/or transfer recipient households in their analysis, limiting the comparability of their conclusions with other studies in the present review. All five studies, however, found that migration and transfers decreased poverty. In Nigeria, poverty headcount reduced by a significant 20 per cent and the squared poverty gap by 42 per cent as a result of transfers received (Odozi et al., 2010). In Vietnam and South Africa participation in migration decreased poverty headcount by 3 per cent and 9 per cent, respectively (de Brauw & Harigaya, 2007; Maitra & Ray, 2003), and in China, Du et al. (2005) reported migration reduced the poverty headcount in the nations 532 designated poor counties by 1 per cent, offering a caveat by way of explanation for the modest impact, stating that most poor people did not migrate. Zhu and Luo (2010) reported internal migration led to a decline in poverty headcount by 15 per cent and squared poverty gap by 4 per cent in Hubei province, China.

R. H. Adams (2006) study on the impact of transfers on poverty in Ghana found that the size of the poverty reduction was dependent on the poverty indices measured. When international private transfers are included in a household's income and expenditure, the squared poverty gap reduced by 35 per cent and the inclusion of internal private transfers led to a reduction of the squared poverty gap by 4 per cent. A repeat study in Ghana in 2008 (R. H. Adams et al., 2008b) reported a reduction in squared poverty gap by 54 per cent and 50 per cent when internal and international private transfers (respectively) were included in household income/expenditure. Reasons for this large discrepancy between results in just two years are discussed in the latter part of the chapter when examining differences in research methods.

The reviewed literature found internal migrant transfers had a poverty reducing impact. Interestingly, the most significant poverty impact was seen on the squared poverty gap, measuring severity of poverty (R. H. Adams, 2004; R. H. Adams et al., 2008a; Odozi et al., 2010), suggesting that migration of family members is an important livelihood strategy of poor households in low-income countries.

3.3.2 Internal Migration, Transfers and Human Capital

In conducting the systematic review on internal migration and transfer literature, the gap in research on the impact on human capital became evident. Research examining the relationship between migration, transfers and human capital, one of the five capitals of the livelihood framework is dominated by international migration and transfer studies which link transfers to education on two levels. The first link, to 'repayment of loans', shows private transfers are sent as repayment of informal loans for educational investments. The practice shows that the prospect of migration makes education a profitable investment for the household and therefore migration promotes human capital formation. Empirical studies in Kenya, Indonesia and Morocco support this view showing that private transfers were sent as payment of pre-migration educational debt incurred by the sender. (de Haas, 2006; Hoddinott, 1994; Lieten & Nieuwenhuys, 1989)

Human capital theory, developed in the 1960s follows the premise that the returns from migration are viewed as outweighing the incurred costs. Sjaastad (1962) extends this argument further suggesting that complimentary investments may be required in order to make migration feasible, such as investments in education and skill training. Under this theory Tuckman (1970) and Mixon (1992) describe migration for education as a form of human capital investment. Thus education is viewed as a tool, increasing the skills and employability of the individual, which makes migration as a livelihood strategy possible. The household considers the costs incurred to secure this education, an investment, leading to improvements in livelihood over the household lifecycle.

The second link to transfers for education is the education of the younger generation (Rapoport & Docquier, 2005). In Vietnam education was ranked as the highest priority for private transfer use by survey recipients (Adger et al., 2002) and

in El Salvador transfers were found to have a much larger impact on school retention rate than other forms of income (Cox & Ureta, 2003). E. K. Campbell (2009) found that in rural Botswana the receipt of transfers increased access to education. When Acosta et al. (2007) examined the effect of international migration and private transfers on 11 countries in Latin America and the Caribbean, focusing on accumulated years of schooling of children aged 10-15, they found that transfers were strongly correlated with higher education in six of the 11 countries.

Very few studies have examined the impact of migration and transfers on health outcomes[19]. Enormous challenges hinder data collection related to migration and health and in the drawing of relationships between transfer receipts and health outcomes, which are affected by various observable and unobservable[20] characteristics of the household and individual. However, migration has been linked to increased health knowledge among migrant households (McKenzie & Hilderbrandt, 2005) and private transfers have been shown to increase expenditure on food, housing and costs associated with health care (R. H. Adams & Cuecuecha, 2010b; Cuong, 2009; Snyder & Chern, 2009) all of which have direct impacts on health. Notwithstanding the lack of empirical studies on the impact of migration and transfers on direct health outcomes it is reasonable to expect improvements in poverty indicators, increased investment in education, increased expenditure on food, housing and health will serve to have a positive impact on the health of the household.

3.3.3 Methodological Challenges

With no standard approach to migration and transfer analysis econometric and statistical methods vary considerably across studies. A direct result of different methodological approaches and diverse research contexts is that the literature on the

[19] Measurement of health outcomes has been primarily limited to the impact of international transfers on infant mortality. Kanaiaupuni and Donato (1999) examined the influence of village migration patterns in rural Mexico on infant survival, finding that infant survival changes over time, increasing with higher transfers, although the authors failed to consider selectivity in the migration process thereby introducing bias that diminishes the robustness of results. McKenzie and Hilderbrandt (2005) investigated the impact of migration on infant mortality and birth-weight, finding both were improved in infants coming from migrant households.

[20] This is further challenged by inequality in intra-household distribution of resources. For example, a minor increase in household income due to the receipt of an internal migrant transfer may be used to provide health care for a male child in preference to a female child.

impact of migration and transfers on poverty and consumption report contradictory findings.

Four methodological challenges are present in empirical studies on migration and transfers. These include selection bias, omitted variables, reverse causality and simultaneity (Deaton, 1997; McKenzie & Sasin, 2007). ***Selection bias*** refers to 'self-selection' of migrant households related to specific household characteristics, such as higher education, greater resources, stronger migrant networks and fewer dependents. For example, international migrants tend to be better educated and have higher income levels than those who do not move internationally (Deb & Seck, 2009). Comparison of groups with similar characteristics can be more accurate but households may differ in their unobservable characteristics (e.g., ability, risk aversion). 'Self-selection' prevents the prediction of what would happen to non-migrant households if they had a migrant. 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, McKenzie and Sasin (2007, p. 5) describe a scenario where economic policies could simultaneously lead to both a reduction in poverty and attract further transfers as opportunities to invest open up in the local economy. In this example, poverty and transfers would have a negative correlation without a causal relationship.

Reverse causality is of particular importance when drawing conclusions on the impact of transfers on poverty. The relationship between transfers and poverty may not be unidirectional. Research has shown that international transfers reduce poverty in low-income countries (Acosta et al., 2007; R. H. Adams & Page, 2005), but this cannot be concluded without also considering that the level of poverty may also influence the amount of transfer received by a household.

Simultaneity occurs when decisions on migration are made at the same time as other decisions. Thus perceived 'causes' of migration may also 'cause' other household patterns of consumption (R. H. Adams, 2005; McKenzie & Sasin, 2007). For example, a household may simultaneously make the decision to send the oldest male to an urban centre to find employment while also sending a younger child to

school. The following section reviews the various methods proposed in the migration and transfer literature to address these methodological challenges.

3.3.3.1 Research Methods Reviewed in the Literature

It is beyond the scope of this review to provide an in-depth discussion of the various econometric models used for analysis. The econometric techniques adopted by the majority of migration and transfer studies to estimate household income and/or consumption with and without transfers will be outlined.

As private transfers are a substitute for migrant earnings had they not left the household, some researchers postulate that they cannot be treated as exogenous additions to household income. An increasingly common method of addressing the endogeneity of transfers is the construction of an estimated counterfactual income/consumption in a hypothetical no migration/no transfer scenario. The counterfactual approach to analysing the impact of transfers on poverty and inequality was first employed by Adams (1989) in his study of three villages in Egypt. A counterfactual estimate is constructed by treating households with no transfers as a random draw of the population and predicting per capita household income/consumption in households where transfers are excluded. Estimated counterfactual income removes external effects of migration on household income but at the same time includes an imputation for the income of migrants had they stayed in the household. The predicted incomes of migrant households are then used to estimate the poverty and inequality measures in the counterfactual of no-migration/no-transfers. (R. H. Adams, 1989)

Adams, in studying the impact of private transfers on households in Ghana, recognised the heterogeneity of households and addressed the possibility of bias introduced by the systematic differences between unobserved characteristics of households by utilising the multinomial logit selection model (Lee, 1983) to determine the extent of selection bias (R. H. Adams, 2006; R. H. Adams et al., 2008a). Two equations form the model, the first being a choice equation that examines migration and the receipt of transfers, and the second, an income/consumption equation measuring the household income/consumption as a

function of the explanatory variable, in this case the receipt of transfers. Potential complications arise in this second equation where the dependent variable (income/consumption) is observable and continuous, as both equations must be considered simultaneously to limit selectivity bias. (R. H. Adams, 2006; R. H. Adams et al., 2008a; R. H. Adams et al., 2008b)

The two-stage procedure incorporating the selectivity term derived from the multinomial logit estimation allows for estimation of the second equation by ordinary least squares (OLS) resulting in reliable coefficient estimates. At least one independent variable must be present in the first-stage choice function that is not in the second income/consumption function. Variables in the first stage equation must be exogenous to migration and the receipt of transfers while the variable in the second equation must be exogenous to household income/expenditure (R. H. Adams, 2006). A finding of 'no selection bias' in the equation allowed Adams to construct counterfactual income/expenditure estimates (R. H. Adams et al., 2008a). Difficulty arises in selecting a truly exogenous variable to the receipt of transfers, variables known as instrumental variables (IVs) (R. H. Adams et al., 2008a; Deaton, 1997). Various instruments have been used across studies but remain specific to the particular research context. Examples of instrumental variables used in empirical and econometric research are provided in the forthcoming discussion in a latter section of this chapter.

A key constraint affecting analysis of data is the ability to obtain precise measures of impact required for an accurate comparison of migrant and non-migrant or transfer-receiving and non-receiving households. As discussed previously in the introduction, households can differ in important observable and unobservable characteristics (such as skills, health, education and motivation) that influence migration and transfer behaviour. This issue of endogeneity is recognised and dealt with to varying degrees in the literature as discussed below.

Panel Survey Data

Panel surveys track a household or individual over time, allowing the use of that household, as its own control in analysis. Tracking over time creates an opportunity to compare the same household under different circumstances in a scenario closer to

that found in an ideal experiment (Deaton, 1997). Panel data is not without its problems but is recognised as possessing greater reliability than data from a simple cross-sectional survey (Wooldridge, 2002). Quisumbing and McNiven (2010) examined the impact of migration and private transfers on assets, consumption and credit constraints using unique longitudinal data from rural areas of the Philippines. Consumption expenditures per adult equivalent are disaggregated into expenditures on various items. Cumulative shocks are included in the estimation equations with instrumental variable regression treating migration and private transfers as endogenous. Estimators of instrumental variables can be robust tools for managing non-experimental data provided the instruments used have predictive power (R. H. Adams, 2004; Deaton, 1997; Wooldridge, 2002). Following the example of earlier studies in China that used exchange rate shocks, Quisumbing and McNiven adopted regional GDP shocks in destination regions as one of the identifying instruments for private transfers. (C. Y. Yang, Lu, & Xie, 2008)

Panel survey data were also used by Du *et al*. (2005) and M. Lokshin et al. (2010). Du et al. used panel data from rural China to estimate per capita income with/without migration while Lokshin et al. utilised panel survey data from two household surveys in Nepal (1996 and 2004) to identify the effect of private transfers on household consumption. To address the problem of endogeneity, past village migration was selected as the instrument for migration decision. Past village migration has been shown to be a robust instrument by Taylor et al. (2003) and Zhao (2003), as it is not influenced by unobservable household characteristics that affect migration and income. Migrant networks were also used by de Brauw and Harigaya (2007), as instruments for migration, when they examined the impact of migration on poverty and household expenditure using panel data from Vietnam.

Cuong's (2009) study on the impact of private transfers on household welfare in Vietnam used panel data from household surveys conducted in 2002 and 2004. Cuong adopted a different approach, favouring the Average Treatment Effect on the Treated (ATT) to measure impact (Heckman, Lalonde, & Smith, 1999). The counterfactual income and expenditures are estimated with fixed-effect regressions. One of the main econometric problems associated with the estimated treatment effects occurs when treated households differ from the non-treated for reasons other

than treatment status per se. Cuong (2009) used panel data, which enables fixed-regressions to remove unobservable time-invariant variables to avoid endogeneity bias. R. H. Adams and Cuecuecha (2010b) also favoured the use of ATT in estimating the effect of private transfers on the marginal spending behaviour of households in Guatemala, although the lack of panel data proved problematic in removing bias. Robustness checks demonstrated that although findings were robust in terms of signs and significance, point estimates were not consistent. R. H. Adams and Cuecuecha (2010b) clearly illustrated that choice of variables, the adopted consumption measure, sample selection and choice of specification model can all lead to under- or over-estimation of point estimates.

Counterfactual estimates with instrumental variables

Where panel data is not available, counterfactual estimates[21] are constructed in order to measure the impact of internal transfers, treating transfers as endogenous additions to household income. Odozi (2010) analysed the impact of private transfers on poverty and inequality on data from 1704 Nigerian migrant and non-migrant households. The author compared the results of analyses treating private transfers first as exogenous (income estimate with and without transfers) then, second, as endogenous (by way of constructing counterfactual estimates). Results show that treating private transfers as exogenous led to underestimation of the impact on poverty and inequality, however, Odozi failed to address bias associated with the unobserved differences between groups.

Studies conducted by Adams in Ghana and Guatemala measuring the impact of migration and private transfers on poverty and inequality employed similar methods for estimating a counterfactual income/consumption (R. H. Adams, 2004, 2006; R. H. Adams et al., 2008a). Robustness checks comparing predicted and observed expenditure outcomes found that observed data underestimated the impact of transfers on poverty indices and the Gini co-efficient, measuring inequality. Although the 2006 study offers a weak attempt at testing for selection bias, neither that study nor the 2004 study considered other potential econometric problems such as measurement bias or specification bias.

[21] Refer to Section 3.3 for an explanation on counterfactual estimates.

In 2008, however, Adams et al. used instrumental variable analysis based on migration networks to deal with household heterogeneity, testing for validity and strength. Interestingly, the 2006 and 2008 studies on the impact of private transfers on poverty and inequality in Ghana, show marked differences in the depth of impact. In 2006 Adams reported that the squared poverty gap decreased by 4 per cent when internal transfers were included in the household income yet a decrease by 16 per cent when international transfers were included in household income. The follow-up study in 2008 reported that the squared poverty gap decreased by 54 per cent when internal transfers were included in household income and by 50 per cent when international transfers were included. These differences are likely associated with the variations in estimation models. (R. H. Adams, 2006; R. H. Adams et al., 2008a)

Zhu and Luo (2010) used counterfactual estimates of per capita income in the presence and absence of migration to estimate the impact of migration on rural poverty and inequality in China. Distance from the household's residence to the nearest bus station and distance from the household's residence to the county capital were used as instruments, after tests for validity confirmed their strength. Distance has also been used by Woodruff and Zenteno (2007) in the case of Mexico and by R. H. Adams and Cuecuecha (2010b) in Guatemala.

Regression analysis

Other studies have used a combination of linear regression models (ordinary least squares regression, logit and tobit models) to estimate the impact of transfers on household consumption. While four of the studies treated transfers as exogenous additions to household income/expenditure (Castaldo & Reilly, 2007; Davies et al., 2009; Osaki, 2003; Snyder & Chern, 2009), others controlled for endogeneity and selection bias using instrumental variables. Quisumbing and McNiven (2010), compared the results of both ordinary least squares (OLS) analysis and instrumental variable analysis in their study on the impact of migration and transfers on asset holdings, consumption expenditures and credit constraints on households in origin communities in Bukindon, Philippines. They found OLS analysis underestimated the impact of migration on housing and consumer durables, while also underestimating the impact of transfers on asset holdings. Similarly, Maitra and Ray (2003) posited

that OLS estimation of budget share equations that treat transfers as exogenous are likely to yield misleading results.

After controlling for endogeneity and selection bias using instrumental variables R. H. Adams et al. (2008b) found transfers did not have a significant impact on consumption behaviour in Ghana. They concluded that evidence from OLS regression indicating differences in consumption patterns between transfer-receiving and non-receiving households could be accounted for by unobservable characteristics between groups. In contrast to these studies, Osaki (2003) treated transfers as exogenous in his study of migrant transfers in Thailand, presenting household income in the two forms, including transfers and excluding transfers. The limited analysis of expenditure patterns inferred that the Thailand study was open to various forms of bias leaving the generalisability of results questionable. Similarly Davies et al. (2009) treated transfers as exogenous in their study of transfers and consumption in rural Malawian households, stating that by focusing on rural households unobserved heterogeneity was minimised. Such a generalised statement does not allow for unobserved differences among rural households that can influence the receipt of transfers and the consumption patterns of households.

This review identified empirical studies on the impact of internal transfers conducted in eleven low-income countries and reviewed their findings. Comparison of results must be viewed with caution due to the difference in research methods used to undertake the studies. Interestingly, in empirical studies employing multiple methods for comparative purposes, point estimates may have varied but the direction of the relationship did not change. A limitation in many studies was the general lack of consideration to bias associated with the unobserved characteristics of migrant and non-migrant or transfer-receiving and non-receiving households.

3.4 Public Transfers

While the focus of this research was to measure the impact of internal private transfers on household expenditure, during the data analysis it was found that public transfers may be having a greater impact than internal private transfers. The use of

public transfers as a means of humanitarian assistance is relatively recent with its inception in the post recovery period from the 2004 Indian Ocean Tsunami. The Overseas Development Bank (ODI) recognised an under-utilisation of public transfers as a means of humanitarian assistance (Harvey, 2005) and in 2007-2008 multiple guidelines were released with the WFP and UNDP initiating pilot programs (Gentilini, 2007; International Poverty Centre, 2008).

The challenge of fungibility renders the impact of public transfers on household consumption challenging. None the less studies have reviewed the use of public transfers concluding that they have a positive impact on household livelihoods (Bailey, 2013). As recognised in the paper by Bailey (2013) most evaluations of cash transfer programs in conflict-affected contexts are not grounded in rigorous research methodologies but rather conducted within limited resources and time.

The Department for International Development (2010) reported on an assessment conducted on the cash transfer program initiated in Ethiopia, stating that 'there was some early evidence that beneficiaries receiving primarily cash transfers were able to acquire and retain more assets' (p.3). Though it was also noted that this was dependent on inflation.

Positive outcomes of cash transfer programs have been reported with the pension scheme in Nepal credited for improving relationships within family members, decreasing the dependency of beneficiaries on others, while also contributing to an increased sense of citizenship, believed to strengthen peace efforts (Holmes & Upadhya, 2009). Attanasio, Pellarana, and Reyes (2009) reported a positive impact on social capital in recipients of the conditional cash transfer program offered to women in Columbia. Among ex-combatants social transfers by way of a veterans pension have been credited in Sierra Leone with enabling recipients to meet family needs and living expenses (Willibald, 2006).

While proponents of cash transfers push for increased inclusion in humanitarian assistance agenda's some of the challenges organisations face in implementation include institutional capacity constraints, targeting issues, dual objectives, market constraints, infrastructural constraints and corruption (Holmes & Jackson, 2007). In

spite of such challenges cash transfer programs have been carried out effectively in some of the worlds most difficult contexts (Hofmann, 2005; Mattinen & Ogden, 2006).

3.5 Conclusion

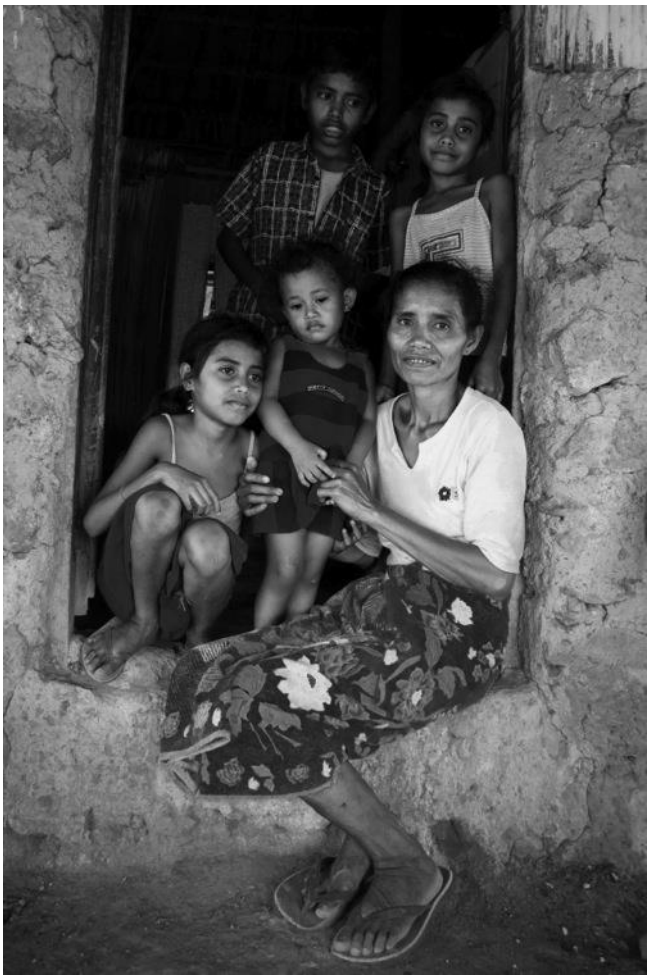
Migration theory has evolved from a narrow view of migration, centred on the individual, to a broader understanding recognising the centrality of the household in decision-making with respect to migration. Acknowledgment of the household as playing an important role in migration decisions has assisted in the recognition of migration as a complex process, although the focus of migration theory remains centred on the micro and macro-economic impacts. While recent migration theory recognises migration as a livelihood strategy adopted by households to minimise economic risk and smooth consumption it fails to identify the multidisciplinary nature of migration. For this reason the livelihoods framework was adopted as the conceptual framework with which to interpret the findings of the research presented in this thesis.

The review of empirical literature found internal transfers impacted household expenditure and consumption patterns in different ways than other income sources. Consistent increases in spending on education were found when marginal propensities to consume out of transfer income and marginal budget shares (including transfers) were calculated for specific consumption items. Increased per capita expenditure on food, health-care and housing were commonly found, demonstrating that internal transfer income does have a positive impact on the human capital of recipient households. Empirical studies presented in this review were based on data collected from cross-sectional household surveys. Difficulties in identifying causality plague cross-sectional survey data with econometric and statistical methodologies varying considerably across studies as researchers attempt to overcome the non-experimental nature of their data (Deaton, 1997; UNDP, 2009). This present review highlights the need for standardised methods of analysis of migration and transfer data if results are to be truly compared.

This chapter has provided an overview of migration theory and its development over time. Recognising that migration is multifaceted the livelihoods framework (Scoones, 1998, 2009) was adopted as the theoretical construct for this research. Under this framework migration is identified as one of the three core livelihood strategies. The second part to this chapter reviewed empirical literature, highlighting the complexities associated with measuring the impact of transfers on recipient households, and one of the greatest challenges being inconsistent use of methodology.

This chapter has also highlighted the move toward cash transfers in place of in-kind handouts as a means of humanitarian assistance in disaster affected and conflict affected populations. These cash transfers can also have the benefit of improving social capital, increasing feelings of citizenship in conflict-affected populations, improving access to services such as education and health care, although measurement of impact is restricted by the fungible nature of cash transfers.

Findings from the review influenced the method and design for this present research, which is discussed in the following chapter.



Female-headed household in Baucau district

Chapter Four: Research Design

4.0 Introduction

This chapter describes the research methodology and study design, drawing on methods adopted by previous empirical studies to justify why specific research methods were selected for this study. The chapter begins with a summary of the major themes identified in the empirical literature review that formed the two research hypotheses. Following this the research aim and objectives are clearly stated, the rationale for the choice of method is provided and research practicalities explained.

Subsequently, the chapter is then divided into two sub-sections describing the qualitative and quantitative approaches to the research design used in the study. The first section describes the quantitative survey design including the challenges and limitations encountered in collecting data using a cross-sectional household survey in a post-conflict nation with poor infrastructure. This is followed by a summary of the quantitative sampling frame, fieldwork and approach to data analysis. The final section, introduces the qualitative approach to the research, offering an overview of sampling procedures, data collection and analysis.

4.1 Hypotheses

Specific themes that emerged from the literature on internal migration and transfers informed two research hypotheses. Studies in countries representing varied political and economic contexts, consistently show that households receiving transfers prioritise education, housing and health in the household budget while also increasing the expenditure on basic needs such as food (R. H. Adams & Cuecuecha, 2010b; Castaldo & Reilly, 2007; Cuong, 2009; Davies et al., 2009; Maitra & Ray, 2003; Quisumbing & McNiven, 2010; Snyder & Chern, 2009). Added expenditure in all three of these areas can be expected to increase the human capital of the household. Increased expenditure on food can lead to improved food security and

nutritional status. Livelihood prospects are improved with increased expenditure on health and housing. Increased expenditure on education can serve to enhance future employment prospects and the likelihood of securing well-remunerated employment. (Deshingkar, 2005)

This led to the **first research hypothesis** that:

Internal migration and transfers can provide a means for increasing the human capital of recipient households.

Empirical research has demonstrated that internal transfers could contribute to poverty alleviation with a number of studies demonstrating a reduction in poverty measures when transfers are included in household income (R. H. Adams, 2006; R. H. Adams et al., 2008a; de Brauw & Harigaya, 2007; Du et al., 2005; Maitra & Ray, 2003; Odozi et al., 2010; Zhu & Luo, 2010). The importance of internal transfers should not be underestimated. Internal transfers affect a greater proportion of poor households in developing nations. Many households in post-conflict developing nations face limited employment options and continual exposure to uninsured risks, which negatively affect household welfare levels. Migration and internal transfers have an integral role in assisting poor families to diversify economic risk and thereby improve livelihood. In the context of Timor-Leste, a post-conflict nation with endemic poverty, private or public transfers could have a significant impact on household income/consumption.

Thus the **second hypothesis** posed is that:

Internal migration and transfers can increase household income/consumption and thereby have a positive effect on household welfare, contributing to poverty alleviation.

The hypotheses were tested using data from a cross-sectional household survey and semi-structured interviews. Survey data enabled the econometric analysis of household consumption items, including those associated with human capital while the qualitative data permitted a more in-depth exploration of household choices

and the perceived impacts of migration and transfers on consumption, poverty and human capital.

4.2 Research Aim and Objectives

This research is significant as it is the first study undertaken in Timor-Leste to formally investigate the relationship between internal migration, transfers, poverty and human capital[22]. By extending the research hypotheses the aim of the investigation was:

To ascertain migration and internal transfer flows in Timor-Leste and examine the impact of these transfers on consumption and human capital in households of origin.

The following specific research objectives were formulated to address the aim:

1. To document the internal migration patterns in Timor-Leste and the characteristics of migrants and migrant households;
2. To record cash and in-kind transfer flows in and out of the household;
3. To identify the primary sender/recipient of these transfers;
4. To measure the numerical value of public and private internal transfers in Timor-Leste;
5. To explore the role of internal transfers in the household economy in Timor-Leste and the impact they have on household consumption;
6. To examine if internal migration and transfers impact on human capital.

4.3 Research Methods

Research methods appropriate to the research objectives were selected. A mixed methods approach was adopted in order to provide insight into the multidimensional nature of migration and transfer flows and impact. Further, and in acknowledgement

[22] During discussions with organisations working with migration, employment and poverty in Timor-Leste much interest in the study was generated. These organisations include the International Organisation for Migration (IOM), the World Bank, the International Organisation for Labour (ILO), Bankable Frontiers, an independent consultancy group working on a project for the Asian Development Bank (ADB) on mobile banking in Timor-Leste and Morris Rask, a micro-finance organisation in Timor-Leste.

that each method has inherent strengths and weaknesses the researcher designed a mixed methods approach to increase the prospect that the data collected will be richer, more meaningful, and have a translational impact to policy makers. (Johnson, Onwuegbuzie, & Turner, 2007)

Survey data in isolation does not allow for examination of the true impact on individual and community livelihoods and the many complexities associated with the implied relationships. The use of multiple research methods served to triangulate data and strengthen the analysis (Denzin & Lincoln, 2000). Methodological triangulation involves the combination of different research methods. The use of quantitative and qualitative methods in combination is referred to by Denzin and Lincoln (2000) as 'between method' triangulation.

Traditionally, there is little evidence of mixed method research in economics outside of the practical concerns of policy economics (Downward & Mearman, 2007). In social sciences, however, the use of mixed methods is widely accepted and used by researchers with the recognition that there is no universal method of data collection (Danermark, Ekstrom, Jakobsen, & Karlsson, 2002; Starr, 2012; Tashakkori & Teddle, 2003). The combining of data obtained from very different methods has been met with some resistance as it is argued that such diverse methods presuppose different assumptions. (Olsen, 2004)

The two main arguments in favour of 'between method' triangulation, and the justification for why it was chosen for this study are presented by Downward and Mearman (2007) in their review of mixed methods triangulation in economic research. The primary arguments to justify mixed methods triangulation are that triangulation increases the 'persuasiveness of evidence' (Webb, Campbell, Schwartz, & Sechrest, 1966), enhances the empirical reliability of quantitative measures (D. T. Campbell & Fiske, 1959) and improves the validity of insights or adds 'completeness' to accounts (Shih, 1998). A second argument supporting triangulation is based on pragmatism arguing that methods can be mixed although one method will prove stronger than the other. (Bryman, 2001; Cresswell, 1995; Cresswell & Clark, 2007)

Although migration and transfer literature has predominantly utilised quantitative research methods to gather data and to formulate conclusions[23], the World Bank now recognises that a mixed methods approach to poverty-related research is essential for policy and monitoring purposes (World Bank, 2000). A mixed methods approach was adopted for the present research with the quantitative component descriptive in nature, designed to collect informative data on household socio-demographic characteristics, the nature of household migration and transfer processes and practices, and numerical data on income and consumption and other relevant quantifiable variables. The qualitative component was exploratory in nature and aimed to gain insight into the significance Timorese people draw from migration and transfer activities.

In summary, the present study was cross-sectional in design with quantitative household survey data being supplemented for greater validity with qualitative information based on key-informant interviews, participant focus group discussions and the researcher's observations.

4.4 Ethical Issues

The research proposal was submitted to the Curtin University Human Research Ethics Committee and approved in July 2010[24]. A submission was also presented in person to the Cabinet of Health Research and Development in Timor-Leste with a letter of approval formally granted in early September 2010, prior to data collection[25].

4.4.1 Informed Consent

In order to ensure that each participant provided informed consent, the enumerators read the participant information sheet and consent form[26] to the respondent either in

[23] The majority of internal transfer studies on poverty have used quantitative survey results to draw conclusions (R. H. Adams, 2004; R. H. Adams et al., 2008b; M Lokshin, Bontch-Osmolovski, & Glinskaya, 2007; D Yang, Park, & Wang, 2005).

[24] Refer to Appendix One for a copy of the ethics approval.

[25] Refer to Appendix Two for a copy of the letter.

[26] Refer to Appendix Three for a copy of the English and Tetun versions of the participation information sheet and Appendix Four for a copy of the consent form. In some cases the information sheet required further verbal translation into the native dialect of the respondent. With members from the research team originating in the study districts, there was always a member of the team present who could act as translator if required.

Tetun or the respondent's dialect. Participants were asked to sign or make their mark on the consent form confirming they understood their role in the research. Participants were informed that they were free to withdraw from the study at any time and this was clearly explained to them.

4.4.2 Anonymity

Use of identification numbers on questionnaires prevented the identification of individuals and maintained anonymity. During the qualitative focus group and key informant interviews the participant's age and sex were used as identifying features for analysis; this was explained to participants at the same time consent was sought.

4.4.3 Confidentiality

Confidentiality was considered paramount and no information about individual participants or their household members was accessible to any individuals not directly involved in data collection or data entry. Participant identifiers were not included in results or disseminated in reports.

The research assistants and enumerators were required to sign a non-disclosure and privacy form stating that information about individuals participating in the study would not be discussed by them outside of the research team. The research team was expected to ensure the ethical principles of *beneficence, non-maleficence, justice, autonomy* and *respect of persons* were adhered to throughout the study.

4.4.4 Data Storage

For all quantitative and qualitative data, paper records and minidisks were placed in a locked cupboard in the researcher's office space. All electronic data and analysis was stored on computer, identification codes being the only source of identifying one respondent from the next. Electronic data is accessible only to the researcher.

4.5 Quantitative Research Design

Migration and transfer studies have traditionally utilised household surveys to collect data on migration patterns, determinants of migration and transfer flows and the impact of transfers on recipient households. Due to the context-specific variations

and complexities associated with migration and transfers there is no set survey used for collection of related data. Studies examining the welfare impact of transfers on households of origin are limited, often using data from nationwide income/expenditure surveys. Data gathered by way of such large nationwide surveys is not collected with the intent of analysing the impact of migration and transfers and, consequently, with limited data on these variables, restricts analysis.

This section discusses the development of the survey questionnaire as a data collection instrument, providing further detail and explanation of key variables while highlighting the challenges and limitations on the data collected. In this section the quantitative sample design is discussed in detail, providing an overview of the study districts and a brief on fieldwork, data entry and analysis.

4.5.1 Household Survey

Household surveys provide a wealth of information on many aspects of household livelihood. However, the usability of data is dependent on the quality of the instrument in terms of questionnaire design and its application in the field. As there was no set survey used for collection of migration and internal transfer data it was necessary to design a questionnaire to be used as a data collection instrument. Past migration and transfer surveys were reviewed and literature on the design of household surveys for developing countries consulted. (Glewwe, 2005; Grosh & Glewwe, 2000)

The household survey was adopted from the migration/transfer study conducted in Moldova by the International Organisation for Migration (IOM, 2007)[27] and the supplementary migration and transfers module that accompanied the 2005/2006 Ghana Living Standards Survey (R. H. Adams, 2006). Additional questions were borrowed from the Timor-Leste 2007 Living Standards Measurement Survey (LSMS) in order to place the survey within the cultural context of Timor-Leste. Constraints on time, finances and human resources had to also be taken into consideration. The survey questionnaire was designed using thematic modules with the intent being that it could be used in future migration and transfer studies or, in

[27] Permission to use and modify the original questionnaire was sought and granted from the Kiel Institute which developed the original Moldova migration and transfer survey.

part, as an additional module in larger household surveys[28] to collect specific migration and transfer data. Seven modules were designed, including basic information, household roster, migration history, transfers received, transfer use, subjective living standards and household income, assets and consumption. The household roster contained a list of all household members and their demographics; age, gender, place of birth, primary language, marital status, education, main activity and employment.

Questions were written out in detail to avoid enumerators improvising with their own words, which could lead to misinterpretation resulting in errors. An experimental study conducted by Scott, Vaessen, Coulibaly, and Verrall (1988) found that questions that were not explicitly written out and open to enumerator using his/her own words resulted in 7-20 times more errors than did questions written out in detail.

Pre-coded closed/forced choice questions were utilised for ease of data collection, entry and analysis. Respondents were give an all-inclusive and highly disaggregated list of choices with the option of 'other' included for those categories that did not sit within those provided. Pre-coded responses on the questionnaire remove the need for coding by data entry clerks, minimising errors (Glewwe, 2005). Skip-patterns were included to direct enumerators and improve the flow of the interview. In this way, depending on the respondents answer, the enumerator was directed toward the next relevant question that needed to be asked. For example, the respondent was asked, “In the last 12 months has anyone in your household received goods or materials from another person?" If the answer was *Yes* the enumerator was directed to questions asking further details. If the answer was *No* then a brief instruction to the enumerator to go to Section 4 question 12 was included next to the *no* tick box.

[28] The practice of adding a migration and transfer module to National Income/Expenditure Surveys or National Living Standards Measurement Survey has been done in other countries. The 2008 Albanian LSMS (Travko, 2008) and the 2007 Vietnam LSMS contained a module on migration and transfers (de Brauw & Harigaya, 2007).

Prior to translation, the questionnaire received critical technical review[29] to ensure quality and relevance. The questionnaire was translated into Tetun, one of the official languages of Timor-Leste and the main lingua franca used throughout the country. During the translation process extensive discussion occurred with the translator to ensure questions were culturally appropriate, sensitive and would be understood by both the enumerator and respondent. The first pre-test occurred during a preliminary trip to Dili, in June 2010, with a small sample of the target population. The translation and structure of the questions was also reviewed by a key informant and revised based on respondent feedback. A second key informant whose suggestions were incorporated into the final draft then reviewed the questionnaire. During enumerator training and a second pre-test prior to fieldwork, final adaptions were made to strengthen cultural specificity and sensitivity as well as ease of understanding. The final version[30] consisted of seven modules and 127 questions and was administered in Tetun by local enumerators. Interview administration was favoured as it reduced the exclusion of illiterate participants.

The questionnaire was designed with the general household and migration information in the first modules and more sensitive transfers and consumption modules towards the end (Glewwe, 2005). This allows the enumerator time to build rapport with the respondent, gaining a level of trust, increasing the probability that sensitive questions are answered completely and in honesty.

4.5.1.1 Main Variables

The first module of the questionnaire was completed by the enumerator and contained location specific data and data pertaining to the interview such as date, time and person interviewed.

Household Demographics

The aim of the research was to examine the impact of migration and transfers on the *household* of origin. The household was selected as the unit of analysis in keeping

[29] Professor Sandra Hopkins and Associate Professor Jaya Earnest from Curtin University, staff from the World Bank in Dili, the regional director of the World Bank in the pacific and a transfer specialist from the Asian Development Bank assisted in the review process.

[30] Refer to Appendix Five for an English copy of the complete household survey that was administered by enumerators. The Tetun version of the same questionnaire is available on request.

with previous migration and transfer literature, which predominantly takes the household as the unit of analysis (R. H. Adams & Cuecuecha, 2010b; Castaldo & Reilly, 2007; de Brauw & Harigaya, 2007). An important caveat relates to the respondent. Due to time and resource limitations it was not possible to interview each household member, therefore all data was collected from a single respondent, which, in most cases, was the head of the household. The household head was determined in pre-interview consultation as the person who would be able to answer the questions with the most knowledge and accuracy. Where the household head was unavailable for interview the spouse of the household head was interviewed.

The second module contained a household roster used to obtain general socio-demographic information about each household member. This included data on the number of household members, position of each member in the household, place of birth, age, sex, marital status, education and employment history. Each household member was given a unique code number that identifies that person in all parts of the questionnaire.

A household member was defined[31] as a person who eats and sleeps in the household for at least three months of the past 12 months, with the exception of babies born in the past three months and people who have moved to live permanently with the household in the past three months following the principle that each person belongs to one household only. This definition of a household member was explained to the respondent and three probing questions were included to ensure a complete household list in which all household members had been identified.

The definition proved limited in its specificity. Female respondents who still had a male spouse consistently reported the male as the head of the household, regardless of the definition that was imposed. For example, if the male household head was a migrant and had been living away from the household for more than a year, they would still be recognised as the head of the household and would have been recorded as such on the questionnaire. It is also necessary to note that following the death of a husband, Timorese custom dictates that the widowed woman should

[31] This definition was taken from the 2007 Timor-Leste living standard survey.

move in with the family of her husband's brother (UNDP, 2002). It is, therefore, essential to bear in mind that when female headed household figures are provided they most likely represent '*true*' female-headed households. As such, it is probable that the number of female-headed households captured by survey data include only households where the male head has died or situations of divorce or separation.

Migration Data

The third module collected data on migration related variables. A migrant was defined as a person who has left the household to live in another location, spending more than three months away from the household in the past 12 months. It is essential to clarify that no time frame on migration was specified; therefore this module collected data on total household migration over the household's lifecycle[32]. Data on the migration history within the household included in-migration and out-migration with questions on when the migrant left, reasons for migration, location of the migrant and number of visits home in the 12 months preceding the survey.

Data was also collected on short-term migration, including length of time the migrant is away from the household and season of migration. It is important to note that data on migration, including the age at the time of migration and reason for migration, were collected from the household head not from the migrant themselves. The social fabric of Timor-Leste ensures migration is a decision involving not only the immediate family but also, in many cases, the extended family[33], therefore responses from the household head are felt to be accurate.

Transfer Data

The term 'transfer', as defined in this study, requires specific definition, in the context of Timor-Leste, in order to capture all the public and private transfers of cash and in-kind goods into and out of the household. The definition used in this study, included all money and goods that were transferred to a household by others living outside the community such as migrants, family, friends and/or government

[32] An important consideration in a post-conflict nation considering the many reasons a migrant may have left the household (e.g. security, to join the resistance, for employment, education or marriage).

[33] The role of the family and extended family in migration decision-making was a theme that emerged from qualitative data collection. Respondents commonly stated that the extended family was consulted in migration decisions.

solidarity or NGO transfers that were not a payment for goods or services provided by a member of the household. In the economic and employment context of Timor-Leste[34], where unemployment and vulnerable employment were high it was probable that migrant transfers would be low. A burgeoning literature on cash transfers in conflict-affected countries and the introduction of the government pension to vulnerable groups in Timor-Leste stimulated interest in including public transfers in the transfer definition.

The design of the transfer module was informed by the experience of R. H. Adams (2005) and from previous migration and transfer household surveys which assisted in the formulation of specific questions related to the source of transfers and transfer use.

Transfer data was collected in the fourth module on transfers received in the 12 months preceding survey. Both cash and in-kind transfers were recorded along with data on the identity, location, age and gender of the sender. The type of goods and value of cash received, number of times in the previous 12 months the goods were received and method of transfer were recorded. In addition, the respondent was asked to identify the household member these goods/cash were primarily sent to. It is acknowledged that transfer questions were only addressed by the respondent and therefore would not capture any transfers to other household members, unknown to the interviewee. Given the social fabric of Timorese society and communal living environment it is unlikely that a household member could receive a transfer unnoticed by others in the household. The transfer question was addressed to all households, regardless of migration status.

Module 5 collected data on variables related to transfer use. Households that reported receiving a transfer were asked about their spending priorities with specific questions related to education and health expenditure. Subjective questions were included on the respondent's view of the extent to which transfers received contributed to the household budget. Data on goods and cash transfers sent by the households was also collected. As with Module 4, data was collected on who the

[34] Refer to Chapter Two for detailed discussion on the economic and employment context of Timor-Leste.

goods were sent to, age and gender of the recipient, the purpose and regularity of the transfer. Additional information on household savings and loans was included in this section.

Subjective Living Standard Data

Although the use of subjective questions on their own is debated in the literature (Ravallion & Lokshin, 2001) and Kahneman and Krueger (2006) support the use of subjective measures of wellbeing as a complement to traditional economic measures of wellbeing, suggesting the subjective data could be useful in policy development. In Module 6 subjective data was collected on the household's perceived wellbeing, and impact of migration. In asking these questions enumerators were instructed not to read the list of pre-coded responses but to read the question only, allowing the respondent to respond independently. (Glewwe, 2005)

The enumerator then categorised the response according to the pre-coded responses, clarifying with the respondent whether they felt the category summarised their response. It is increasingly recognised that traditional economic measures, although necessary, are limited in their ability to reflect a population's concept of their own wellbeing (Kahneman & Krueger, 2006). Subjective questions allow greater insight into perceived quality of life, featuring the individuals' perceptions of their experiences, not utility as indicated by economic statistics.

Income and consumption data

The quality of income and consumption data is subject to a great deal of discussion. There is mixed evidence on whether it is possible to obtain an accurate estimate of total consumption from a small number of expenditure questions. A survey of 8000 households in Indonesia that used both short and long expenditure questionnaires found the mean and distribution of expenditure values differed little between surveys (World Bank, 1992). Results of similar tests in El Salvador (D. Jolliffe, 2001; D Jolliffe & Scott, 1995) and Jamaica (STATIN, 1996) did not produce such favourable results with large discrepancies in the values from short and long questionnaires.

For Module 7 cost and time restrictions associated with this present study restricted consumption/expenditure data to a 37-item food and non-food expenditure list. Non-food expenditures included utilities, durables, education, health, social events, transport, housing and commodities. Table 4.1 illustrates how each consumption category was further broken down into specific items.

Although not as detailed as sections dealing with consumption found in the Living Standards Measurement Survey (LSMS) or the World Bank Household Income Expenditure Survey (HIES)[35] it was felt that the section on consumption[36] provided a comprehensive net to capture household expenditure patterns. The survey also collected information on household income and assets, which posed challenges to the accuracy of data collected and calculations subsequently made during analysis. Income and assets are sensitive topics to many respondents; suspicion that such information could be used against them may lead individuals to provide inaccurate information. Attempts were made to minimise this risk by the interviewer reiterating at the beginning of the income/expenditure/assets module that the information was confidential and would be used by the researcher only.

The various ways in which income enters the household, such as wages, public and private transfers, cash gifts, formal and informal loans, all effect a household's income status. In agricultural households the added complexities, such as households obtaining part of their food from subsistence production and the intermittent sale of agricultural produce make accurate income figures difficult to obtain during an interview. It is widely accepted that income figures during household survey interviews are often underestimated (Deaton, 1997).

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35 These extensive household surveys often require multiple visits to households with each expenditure/consumption interview taking over one hour on it's own. The use of consumption/expenditure diaries is also practiced for a subsample of households where the enumerators visit the household daily for a week to record expenditure. Tagging the migration and transfer modules to one of these larger nationwide household surveys with a more comprehensive income/expenditure section would provide stronger results. It is hoped the questionnaire developed for this research can be utilised in such a way in the future.

36 Section 7 of the household survey.

Table 4.1: 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. Households were asked about the food consumed from each category in the past 7 days. A total weekly food consumption figure calculated from this data could then be translated into an annual figure.

b. Respondents were asked how much the households 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.

The reference period that respondents are asked to recall has also been widely discussed in economics literature. The reference period must not be too long as it will increase recall bias but it also must be long enough to account for the variations in weekly income and expenditure. In an early study on the Indian National Sample Survey, a one-month reference period was shown to produce less bias than a one-week reference period (Mahalanobis & Sen, 1954). The item group being measured largely defines the length of reference periods. Items consumed frequently, such as food require relatively short reference periods, usually one week, whereas education and health expenditures are more accurately measured with a reference period of one month. Low-frequency items such as household durables require longer reference periods, as a short period would lead to large variances in the estimates of totals. (Deaton, 1997; Pettersson, 2005)

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 higher than June-August, which is considered the period of plenty. National income/expenditure surveys are usually carried out over a one-year reference period to cover seasonal variations, 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 October 2010.

4.5.2 Fieldwork

Eleven students were recruited from universities in Dili, many of whom had had previous experience administering household surveys or had worked as enumerators on the recent national census that took place in the months prior to this study. It was imperative that the research team were familiar with the languages spoken in the study districts. All members of the team were from at least one of the study districts and spoke at least one district language in addition to reading and speaking fluent

Tetun. After undertaking a week of training in Dili, the students were selected for three research teams. A highly experienced translator was employed to translate during the training of enumerators to maximise understanding and limit confusion. The questionnaire required between 45 minutes and one hour to administer. It was thus important that enumerators had a thorough understanding of the questions and coded answers.

In the United Nations guide on conducting household surveys in developing and transitional countries Glewwe (2005) emphasises the importance of training manuals, indicating that such a resource is perhaps the most important component in enumerator training. During the training each enumerator received a 24-page training manual[37] prepared by the researcher in English and translated into Tetun, which discussed the organisation of the study, the role of each team member, interviewing etiquette and protocols, interview techniques and finally key definitions and a detailed description of each question and how to fill out the survey correctly. The manual also provided a guide for procedures to be used for unusual cases, including general steps to be followed in dealing with unforeseen problems. Throughout the week enumerators practiced administering the survey and were encouraged to practice with family members and neighbours each evening giving many opportunities for clarifying any queries and misunderstandings. Pilot interviews were conducted in Dili prior to commencement of fieldwork to identify any further weaknesses in the data collection instrument and also to provide the team with valuable experience and feedback on the interview process.

Household survey collection occurred over a three-week period in October 2010. The three research teams consisted of one supervisor and two enumerators with both male and female representation in each team. An extra enumerator floated between teams, joining the team that was travelling the greatest distance, the additional enumerator helped to relieve time pressures to complete required interviews. A research assistant who had fluency in English worked with the researcher to assist in quality control, interviews and focus group discussions. The supervisors, who were required to check all surveys prior to leaving the village and

[37] The training manual is not attached to this thesis but can be provided in Tetun or English on request.

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.

A debriefing followed data collection where the research teams were encouraged to voice issues and experiences as enumerators and supervisors. The teams were encouraged to voice their perceptions of their role, problems encountered, their perceptions on participants attitudes to the survey, sections of the questionnaire they felt posed challenges from their perspective as an enumerator and also from the interviewees' perspective on how they answered the question. The research teams were also requested to provide opinions and suggestions for future surveys on migration and transfers. It was important to have a thorough evaluation of the survey design and keep a log of any issues regarding administration during data collection as this provided valuable information not only for any discrepancies that should show up during data entry and analysis but also for consideration in future use of the instrument.

4.5.3 Sample Design

Timor-Leste has a population of approximately 1.06 million, comprised of 184 652 households spread over 13 administrative districts (DNE, 2011c). Resource constraints prevented a national survey so four districts were selected for the study. Dili was excluded from selection as it was felt that with only 54 per cent of Dili's population being born in Dili it would be difficult to draw a sample of origin households. From the remaining 12 districts, four were selected for sampling. The selection of the four districts to be included in the study was based on the 2004[38] census data on Population Flows.

The four districts with most recorded out-migration rates were selected for the study. Baucau, Viqueque, Bobonaro and Ermera were recorded as having an out migration rate representing 16 per cent, 20 per cent, 15 per cent and 9 per cent of the district populations respectively. The combined out-migration of all four districts was 50 902 representing 48 per cent of national total recorded out-migration from all 13

[38] Althought the 2010 Census data collection had taken place, data was still in the phase of data entry.

districts. Nearly 6 per cent of the population of Timor-Leste had migrated out of these four districts according to the 2004 national population census. Figure 4.1 provides a map of the 13 districts[39]. Unfortunately on completion of the first the districts (Baucau, Viqueque and Ermera) resource limitations meant the fourth district, Bobonaro, had to be cancelled.

Figure 4.1: Timor-Leste District Map

Source: Fischer (2010) http://www.mmiets.org.au/about/index.html

4.5.3.1 Sample Size

The appropriate sample size for a population-based survey is determined largely by three factors: the estimated prevalence of the variable of interest, the desired level of confidence and the acceptable margin of effort (United Nations, 2005b). For a survey design based on a simple random sample, the sample size required can be calculated according to the following formula.

$$n = \frac{t^2 \text{ X } p(1-p)}{m^2}$$

[39] Oecussi is a coastal enclave in the western part of Timor island, 13104 km from Dili.

Where n = required sample size, t = confidence level at 95 per cent (standard value of 1.96), p = estimated prevalence of migration in the study districts and m = margin of error at 5 per cent (standard value of 0.05). (United Nations, 2005b)

The sampling method for the household survey was based on sampling theory for a multistage survey where selected households are not randomly distributed over space but are geographically grouped in clusters, the most commonly used method for households surveys in developing countries (Deaton, 1997; United Nations, 2005b). This method of sampling has advantages in that it is cost effective preventing the prohibitive cost of dispersing interviews across a broad geographical area.

Clustered samples also enable easy access for re-visit if the respondent is not home on the first visit or for clarification of data. Although villages and households are randomly selected, the sample is not a simple random sample. Clustering requires a further correction to the sample size to correct for this difference in design, calculated by multiplying the sample size by the design effect (Yansaneh, 2005).

Design Effect

As households within clusters are usually similar to each other in their relevant characteristics, clustering can increase variability in the sample, reducing precision. The 'design effect' is important in cluster sampling and refers to the ratio of the variance of an estimate to the variance that it would have had under simple random sampling.

> The design effect represents the factor by which the variance of an estimate based on a simple random sample of the same size must be multiplied to take account of the complexities of the actual sample design due to stratification, clustering and weighting. (Yansaneh, 2005, p. 19)

The design effect due to a clustering sample design for an estimated mean y is expressed as:

$$D^2(y) = 1 + (b\text{-}1)p$$

Where D^2 (y) represents the design effect for the estimated mean (y), p is the intra-class correlation, and b is the average cluster sample size. The intra-class correlation is the degree of homogeneity (with respect to the variable of interest) of the units within the cluster. This value is always positive in human populations as households within the same cluster invariably share many similar attributes (Yansaneh, 2005).

The design effect must be considered in the estimates of standard errors or the interpretation of survey results can be regarded as unfounded. To achieve a low design effect it is necessary to use a small cluster sample. In cluster sampling the design effect is usually calculated as 2 and used in the sample size calculation to ensure the precision of the study is not severely compromised. A cluster sample with a design effect of 2 yields estimates with the same variance of those from an un-clustered, simple random sample of about half the total number of households (Yansaneh, 2005).

The sample size with the design effect incorporated is:

$$Cluster\ sample\ size\ (n_c) = \ n\ x\ D$$

In calculating the sample size non-response must also be considered. There are higher non-response levels and dropout rates in household surveys asking for sensitive details, such as income and expenditure, than for other types of household surveys. A contingency of 20 per cent is accepted to ensure non-response, drop-out or recording error do not compromise the power of the sample (Pettersson, 2005). The sample is then further increased by 20 per cent to account for such contingencies.

$$Final\ sample\ size\ \left(n_f\right) = \ (n_c)\ x\ 1.20$$

Finally the calculated sample size is then rounded up to the closest number that matches well with the number of clusters to be surveyed. The optimum number of households selected in each Primary Sampling Unit (PSU) is dependent on cost and degree of homogeneity with respect to survey variables.

The recommended sample size for cluster surveys in developing countries is 810 which is often rounded up to 900 allowing for 30 clusters of 30 households, inclusive of the design effect and contingency calculation (Casley & Lury, 1981; Deaton, 1997). As it was not possible to determine an estimated prevalence of households with a migrant or households receiving a transfer a sample size of 900 was selected for this study. In spite of their different populations and total number of households, sampling theory (Chaudhuri & Stenger, 2005) dictates that a sample of roughly the same size should be allocated to each region in order to produce estimates of similar quality for each of them. A sample of 225 households per district[40] was calculated by dividing the required sample size of 900 by four.

This sample size was then considered with regard to ease of enumeration and resource constraints, survey length and interview time, to determine the number of clusters for each district. A final sample breakdown of 15 clusters of 15 households per district was selected as a team of three researchers could interview 15 households in one day, with three groups of three interviewers one district would take one week to complete. This provided a total sample of 60 clusters of 15 households. Clustered households are more likely to share similar characteristics than a sample obtained from a total random sample, in which case using as many clusters as feasible and implementing smaller cluster sizes the sample becomes more representative of the total study population (Chaudhuri & Stenger, 2005; Deaton, 1997).

4.5.3.2 Sampling Frame

The master sampling frame used in the study was provided by the list of census Enumeration Areas (EAs) with the number of households from the 2004 Population and Housing Census[41] defined under administrative units called *Sucos*. One problem with using EAs from the 2004 census as PMUs is that the number of households may differ markedly from those in 2010 due to population movements over the past 6 years. The rapid urbanisation of Dili, population displacements due to insecurity since 2004, and drought in rural areas may lead to miscalculation error. As the PSUs

[40] The impact of budget constraints on the final sample size is discussed in the following section.

[41] 2004 Census data was used as at the time of data collection as the 2010 Census data was still in the phase of data entry.

also vary considerably in size, and in order to minimise these effects and increase the precision of survey estimates, the Probability Proportional to Size (PPS) sampling technique was employed (Yansaneh, 2005).

Using the 2004 EA National Census count, 15 PSUs were selected independently with PPS from each of the study districts. At the first stage of sampling a list of the *sucos* in the district and the number of households in each *suco* was obtained. A *suco* is an administrative area made up of a number of villages, known in Tetun as *aldeia*. Fifteen *sucos* in each district were selected using PPS, which was based on the number of households living in each *suco* at the time of the census (2004).

PPS sampling reduced the risk associated with isolated community studies where results are heavily influenced by whether one selects a village where migration is incipient or well established. Using PPS all villages had equal opportunity for selection regardless of the degree of migratory prevalence. The second stage consisted of selecting a sample of Secondary Sampling Units (SSUs) from each PSU. A list of *aldeias* in each chosen *suco* was collated, the names put into a bowl and one 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). The DTD method is time consuming and expensive, requiring extensive mapping of the research area, identification of boundaries and a visit to every house in order to construct a list of every household.

At the time of the present study Timor-Leste did not have written boundary maps for *aldeia*s. The PLD required less resources relying on a previously constructed list of households in the research area kept by the village leader, known as *xefe de aldeia*; the lists had been updated for the 2010 census. The main problem associated with the PLD method is that the list of households may not be accurate at the time of research, households may have left or others may have moved into the village.

The associated challenges with the PLD method were minimised in the following ways. A letter was sent to each *xefe de aldeia* of the selected EAs prior to a visit from the team explaining the purpose of the research and the need for an accurate list of households living in the *aldeia*. This was further defined as those households who have members that were at that point in time sleeping and eating in the *aldeia*. The team supervisor sat with each *xefe de aldeia* and updated the household list to include only those households. Using the updated Household List and a unique random number table for each EA the supervisor selected 15 households for interview. The supervisors received additional training prior to fieldwork on culturally appropriate means of liaising with the *xefe de aldeias* and the household sampling technique using random number tables.

The sampling method used in this study is common to household surveys. A self-weighted sample (Deaton, 1997) is produced through the practice of selecting enumeration areas based on PPS and choosing a sample from a unique random number table; a truly random sample as each household has equal probability of being selected (United Nations, 2005a, 2005b).

On completion of the first three districts resource constraints prevented the team from continuing to the fourth district. Data collection in Bobonaro was consequently cancelled. The final sample consisted of 675 households located in 45 *aldeias*, across 45 s*ucos* in the three districts of Baucau, Ermera and Viqueque. The reduction in sample size can lead to increase in sample error and loss of precision of estimates. In the present study the selection of households in each district using multistage sampling techniques produced a random sample of households in each district to be surveyed. The loss of Bobonaro as a district under study does not affect results found in the other 3 districts, being mutually exclusive of each other. The generalizability of results is specific only to the districts that participated in the study; this thesis does not attempt to extrapolate the results to make references to other districts or Timor-Leste as a nation. Table 4.2 shows the distribution of the sample across the study districts.

Table 4.2: District sample distribution: Number of households

District	Urban		Rural		Total Households	Proportion of Total Sample
Baucau	15	(6.7%)	210	(93.3%)	225	33.3
Ermera	15	(6.7%)	210	(93.3%)	225	33.3
Viqueque	15	(6.7%)	210	(93.3%)	225	33.3
TOTALS	45	(6.7%)	630	(93.3%)	675	100.0

Rural/urban distribution was similar across the three districts with an overall 93.3 per cent rural representation. The 2010 census reported a 90.4 per cent combined rural representation for these districts. (DNE, 2011c).

4.5.3.3 Limitations Associated with Sampling.

A household survey conducted with cluster sampling can only produce an estimate of what is occurring in the true population. The sampling frame did not cover the whole population of Timor-Leste and was therefore an indication of what was occurring in the study districts only. Populations in other districts may have had different characteristics leading to different migration and transfer behaviours. The possibility of sampling error, where a sample differs from the population by chance was minimised in this study by increasing the number of, and reducing the size of, sample clusters, however it cannot be stated that sampling error is not present. Over- or under-representation of some groups in the population, which has occurred not as a result of chance, is known as sampling bias. Sampling bias is not a major issue in this study due to the sampling technique that allowed equal opportunity for each household to be selected as part of the sample. Only 2.2 per cent (n=15) of sampled houses were replaced due to a respondent not being available or refusing to be interviewed. In these cases the closest neighbour was taken as the replacement household, following the theory that clustered households share similar characteristics (Chaudhuri & Stenger, 2005).

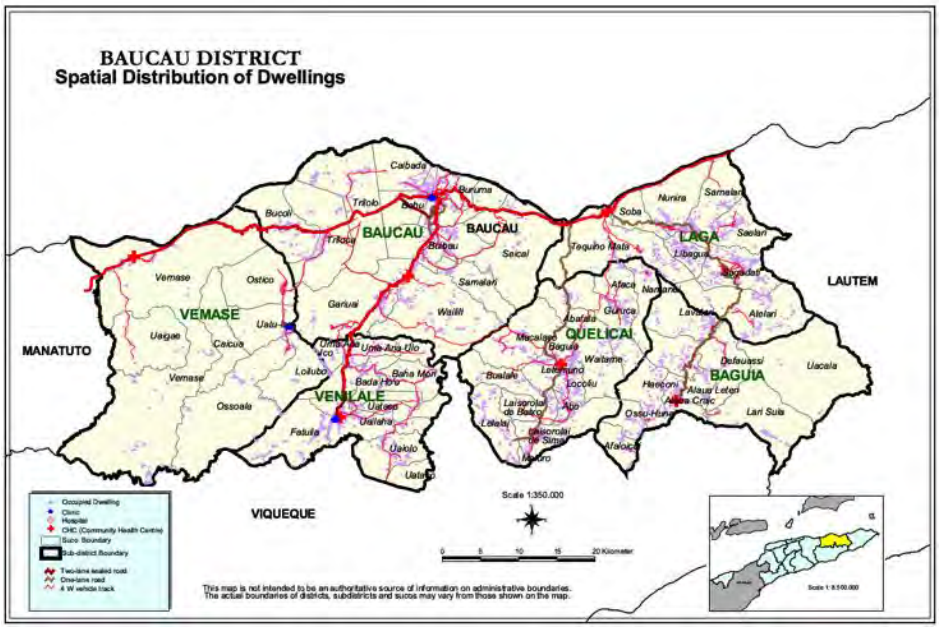
4.5.3.4 Overview of Study Districts

Baucau District

Baucau is 122 kilometres (kms) East of Dili and covers 1.5kms^2 (GTL, 2002). Baucau is the second largest district of Timor-Leste with a population of 111 484,

according to the 2010 national census (DNE, 2011c). The district is divided into six sub-districts: Baguia, Baucau, Laga, Quelicai, Vemasse and Venilale. Within these sub-districts are 59 *sucos* and 286 *aldeia*. Figure 4.2 is a district map of Baucau including sub-districts, *sucos*, occupied dwellings and major roads.

Figure 4.2: Baucau District Map



(DNE, 2008b, p. iii)

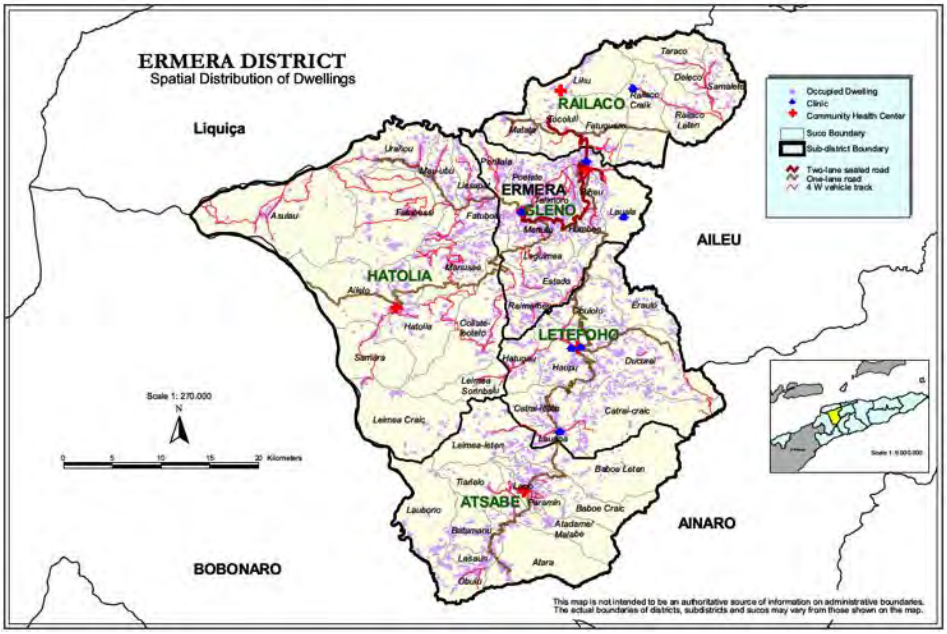
Historically, Baucau city was the second town in Timor-Leste settled by the Portuguese, becoming an administrative centre and trade port. The city of Baucau, the second largest city in Timor-Leste, had a population of 20 362 in the 2010 census (DNE, 2011c). Agriculture, the main economic activity of Baucau, consisted of corn, rice, peanut, coconut and horticultural crops. Baucau district was recognised as having the best roads in the country, although these were restricted to the transport corridors from Baucau town to Dili, Los Palos and Venilale, located near the border to Viqueque district. Once the district border was crossed the road deteriorated substantially with the 35km remaining journey to Viqueque town taking two hours by four-wheel drive.

Ermera District

Ermera is located 58km southwest of Dili, completely surrounded by other districts. According to the national census in 2010, Ermera had a population of 114 635,

making it the second most-populous district in Timor-Leste (DNE, 2011c), although in land area Ermera is one of the smallest districts with an area of 746kms^2. The district is divided into the five sub-districts of Atsabe, Ermera, Hatólia, Letefuó and Railaco. Within these sub-districts are 52 *sucos* and 275 *aldeia* (GTL, 2012a). The district map in Figure 4.3 illustrates the sub-districts, *sucos*, occupied dwellings and major roads of Ermera. Most of the district's population was employed in agriculture, predominantly growing and harvesting coffee. An exception was the northern sub-district of Atsabe which produced high quality textiles traded throughout the country (Gutteres, 2002a).

Figure 4.3: Ermera District Map



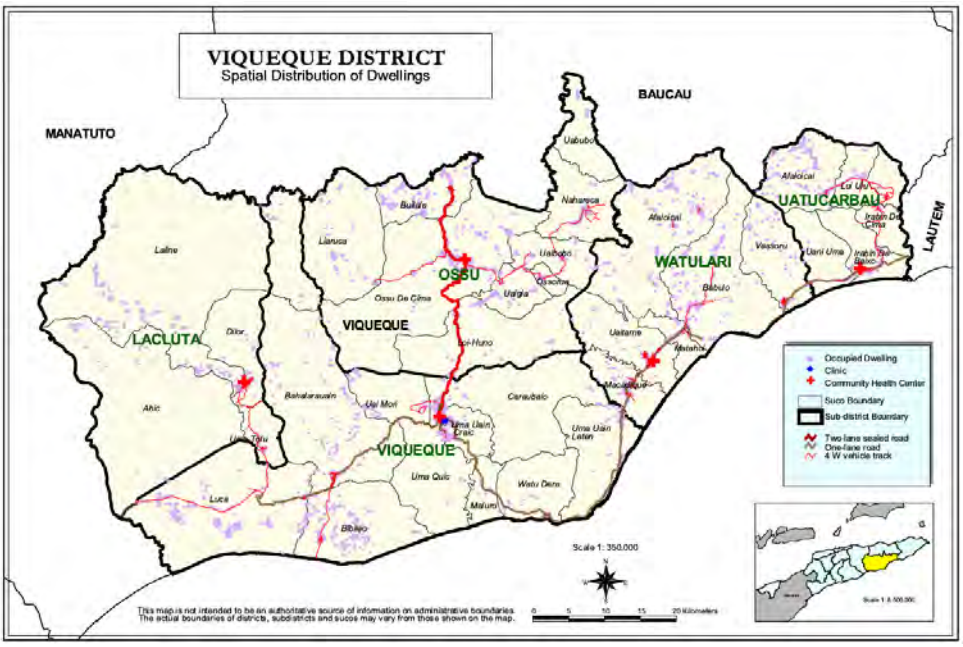
(DNE, 2008c, p. iii)

The mountainous topography means Ermera is prone to landslides and erosion, combined with the heavy rains roads are often washed away, leading to major access problems (Gutteres, 2002a). While the national development plan places priority on the main service roads to the district capital and sub-district administration towns, the secondary and feeder roads were in a critical state. During the rainy season access to many villages was often impossible (GTL, 2012b).

Viqueque District

Viqueque is situated on the south coast of the island, 63km south of Baucau and 186km southeast of Dili. Viqueque has an area of 1078kms^2 and a population of 70 177 (DNE, 2011c). The district contains five sub-districts: Lacluta, Ossu, Uatolari, Uato Carabau and Viqueque (GTL, 2012a). Within these sub-districts are 35 *sucos* and 234 *aldeia*. Figure 4.4 is a district map of Viqueque including sub-districts, *sucos*, occupied dwellings and major roads.

Figure 4.4: Viqueque District Map



(DNE, 2008d, p. iii)

Viqueque has rich agricultural resources, fertile high and lowlands and favourable climatic conditions that include two wet seasons which allow for two planting rotations of rice and corn per year (Gutteres, 2002b). In addition, on-shore natural gas and petroleum resources are being explored with plans to commence development of a refinery in Viqueque in 2017 (GTL, 2012b). The district has three main transport arteries; the north/south road from Viqueque to Baucau is the main transport route to Dili also. All three major roads are in poor condition and the onset of heavy rains can cut access totally. Over 50 per cent of villages in Viqueque district are isolated during the rainy season affecting access to services, communication, and the local economy (Gutteres, 2002b).

4.5.4 Data Entry and Analysis

Survey data was entered into Microsoft Excel and then transferred to STATA. Data entry began in the field and was completed three months after data collection. Ideally survey data should be entered into a crosschecking program during interview for immediate detection of errors, however resource constraints prevented the use of these electronic devices. Consequently the daily inspection of survey returns by team leaders and the researcher served as a useful crosschecking mechanism to minimise errors. The feedback sessions conducted by the researcher on the previous days interviews provided early detection of errors and quick rectification, acting as a way of monitoring data quality and helping prevent repeated errors by enumerators. Revisiting households after the research team had left the site was not possible due to the long distances travelled and issues faced with accessibility. Every effort was therefore made to minimise enumerator error. Ten surveys were rejected for analysis due to enumerator error that could not be corrected.

Data was checked for errors at various stages during the data entry process. On final conversion to STATA, summary commands were run to pick up inconsistencies or errors missed during early checks. Where an error was detected the original survey was referred to and were possible, the error corrected; the command was then repeated to ensure no further errors were present. On completion of the data cleaning process 654 questionnaires were found to be complete and could be used in data analysis. Table 4.3 illustrates the breakdown of the final sample.

Table 4.3: Final sample distribution by district: Number of households

District	Urban		Rural		Total Households	Proportion of Total Sample
Baucau	15	(6.9%)	202	(93.1%)	217	33.2
Ermera	15	(6.8%)	206	(93.2%)	221	33.8
Viqueque	15	(6.9%)	201	(93.1%)	216	33.0
TOTALS	45	(6.9%)	609	(93.1%)	654	100.0

STATA was used to analyse the descriptive data to provide an overview of the sample and household characteristics. The research hypotheses were formally tested using the research objectives to guide data analysis;

1. Internal migration patterns were quantified by examining descriptive data on in-migration and out-migration patterns of sample households. Characteristics of migrants and migrant households were tabulated.
2. Transfer flows in and out of the household were analysed and summary statistics collated for the total sample and at district level.
3. The primary sender and recipient of both public and private transfers were identified.
4. Transfers were separated into public and private transfers with summary statistics run for the total sample and at district level.
5. In exploring the role of public and private transfers in household economy it was necessary to employ specialised econometric techniques. These techniques address key methodological issues relevant to the present study[42]. Although it can be assumed that transfers are simply an exogenous addition to household income, it is important to acknowledge that had the migrant not left the household, they would have contributed in other ways to the earnings of the household. As the literature review (Chapter Three) revealed, households can also differ in both their observed (age and gender of members, education and employment status) and unobserved characteristics (motivation and risk aversion). Treating private transfers as exogenous and simply comparing household income/consumption including private transfers to household income/consumption without private transfers will lead to biased income regressions which have been shown to underestimate true impact (Rodriguez, 1998). Econometric analysis techniques were therefore employed to minimise this bias.
6. Following on from objective 5, the impact of migration and transfers on human capital was examined quantitatively by specifically including 'education' as a consumption item and measuring the impact of public and private transfers on expenditure education.

4.5.5 Dependant Variable

In this study the dependent variable is household *expenditure* in preference to income. Expenditure data has been proven as more effective in determining 'impact' of transfers on households (R. H. Adams, 2004; R. H. Adams et al., 2008a). In low-

[42] Refer to Chapter Three for further explanation.

income countries where self-employed agriculture is the main source of income, expenditure is easier to define and measure. In addition, the poverty indicators used in the analysis of the present study are based on expenditure rather than income data (World Bank & National Statistics Directorate, 2008).

4.6 Qualitative Research Methods

The qualitative methods were employed to gain insight into the significance Timorese people draw from migration and transfer activities. The qualitative portion of the study was not intended as a separate in-depth qualitative study on migration and transfers but rather as a complementary research method to more broadly investigate the research questions.

4.6.1 Participants

A purposive sample of households with at least one migrant, were identified by the *xefe de aldeia* who asked these households if they would like to participate in a discussion on the household's experience of migration and transfers.

In each study district two focus group discussions (FGDs) were held where issues associated with migration and transfers were explored. Morgan (1996) argues that it is necessary to conduct 3-5 discussion FGDs for each variable of investigation, however Liamputtong and Ezzy (2005) suggest that with time and cost constraints faced by most researchers this is difficult to achieve.

Focus groups included both male and female participants, proving to be a limitation in the context of Timorese culture as the male members tended to dominate the discourse. In planning the research it was intended that these focus groups represent different target groups such as those with a migrant, those without a migrant, those receiving transfers and those not receiving transfers, in reality it was difficult to arrange such specified groups. The sample in each focus group, then, bore representatives from some or all target groups. The heterogeneity of participants in focus groups is sometimes viewed as a limitation as it can make it more difficult to identify a 'coherent set of opinions' (Liamputtong & Ezzy, 2005, p. 86), however,

within the scope of the qualitative portion of this research FGDs introduced issues that could be further explored in key informant interviews.

Ten key informant interviews were held with village elders and other key members of the village community. Key informant interviews were conducted informally. The Timorese people are extremely hospitable and while the enumerators were conducting interviews the researcher would begin talking to other members of the community who were keen to discuss the issues of migration and transfers. With permission to interview requested by the researcher and granted by the people, key informant interviews were then conducted. They included village leaders, elders, highly regarded members of the community, a foreign priest who had lived in Timor-Leste for more than 20 years and the director of a teacher training college who had worked in Timor-Leste for nearly 10 years. Where possible interviews were recorded, with permission from participants, and later transcribed and translated from Tetun to English. In the event that a participant requested the interview not be recorded, the researcher took extensive interview notes. This method can be limiting as no cross-checking of the translator's interpretation of the question and response was possible However, crosschecking of recorded interviews revealed few misinterpretations from the translator, where they did occur the meaning of the content was not distorted. Any errors recorded during non-recorded interviews could therefore be considered negligible.

In addition, key informant interviews were also held with eight representative organisations involved in migration and transfer-related issues. These included interviews with staff from the International Labour Organisation (ILO), the International Organisation for Migration (IOM), the World Bank, the Ministry of Education, the Ministry of Youth Employment and Training, Ministry of Health and Human Resources, Moris Rasik (an organisation working in microfinance), and a private employment recruitment agency.

4.6.2 Qualitative Data Collection

Few qualitative studies on migration and transfers have been undertaken; predominantly such studies have a strong quantitative focus. Therefore it was not possible to approach data with a set of conceptual categories. Pre-constructed

interview guides were used only to stimulate discourse. Prior theoretical expectations were avoided and all inferences were grounded in the data collected. Data collection and analysis occurred simultaneously and informed each other. Themes and concepts constructed from the analysis guided decisions such as information sources (Cresswell & Clark, 2007; Sim & Wright, 2000).

4.6.2.1 Field Interviews

The semi-structured interviews explored participant's experience of migration, both from the perspective of households who had a migrant and from households without a migrant. Issues surrounding transfers were also investigated. Interview guides[43] for FGDs and key informant interviews were used to introduce the topic and then only to stimulate thought and conversation where required. The ideas were presented in an open-ended manner with the themes and concepts flowing from participants, not the interview guides. The present researcher conducted the interviews[44] with a research assistant acting as translator. Interviews were conducted in a variety of settings with the goal of a quiet place where interruptions were less likely. Settings ranged from inside homes, in fields and under trees.

Data collected through the focus group discussions and interviews provided important insights into the lived experience of internal migration and transfers in Timor-Leste. The small sample size did not permit data saturation. Saturation theory follows the premise whereby data is collected until a point where no new understanding is gained from collecting more data, time and resource constraints prevented this from being sought in this research study. (Khan & Manderson, 1992; Krueger & Casey, 2000; Liamputtong & Ezzy, 2005; Richards & Morse, 2007)

Qualitative data presented in this thesis offers a human dimension, strengthening the quantitative statistics. It does not offer or attempt to offer an in-depth study into the experience of internal migration and transfers but rather

[43] Refer to Appendix Six for a copy of these interview guides.

[44] The researcher had received prior training on conducting focus group discussions and had previous experience in conducting qualitative research for the Centre for International Health at Curtin University.

highlights some key concepts that would benefit from more in-depth research into the experience and impact on both the migrant and the household.

4.6.3 Data Recording and Transcribing of Interview Data

Interview data was audio recorded with mp3 technology ensuring an accurate and complete verbatim record of both researcher's questions and participant responses, with the exception of organisational interviews, data collection in these interviews relied on note-taking and post-interview reflections. The researcher, documenting the demographics of interviewees, observations, reactions, impressions and other significant contextual information, maintained an interview journal. Interview journals are recognised as a useful source of supplementary information (Rudestam, Newton, & Rae, 2007). The interviews were transcribed and then translated from Tetun to English.

4.6.4 Qualitative Data Analysis

Analysis of qualitative data was based on thematic analysis where data is coded, sorted and organised (Liamputtong & Ezzy, 2005). The purpose of the analysis was to identify themes from the data that were rooted in the reality of the lived experience of migration and the impact of transfers. NVivo8 was used to store typed translated transcripts, research observations and notes, reviews of relevant literature and other data obtained during the study. This computer analysis software also assisted in the coding of qualitative data, identifying themes, linking identified relationships ensuring themes specific to participants' experiences where appropriately acknowledged and analysed (Richards & Morse, 2007). Continual referencing back to the data during analysis ensured that the analysis process was firmly grounded in the actual data.

The initial process involved reading and re-reading the translated transcripts in order to gain familiarity with the data. Where inconsistencies between the translation of the research assistant and that provided by the translator of the transcripts became evident, the translator was contacted to clarify the Tetun version again. As the research assistant had proficient but not excellent English language skills, there were some translational errors. Despite this imposing some limitation on the data analysis rich data on the lived experience of migration and transfers was obtained.

After regaining familiarity with the data "open" coding (Strauss and Corbin (1990) began with data broken down and conceptualised, and assigned a name representative of a specific experience. Data was viewed in an open way in order to identify new ideas, relationships, patterns between experiences of internal migration and receipt of transfers.

Once primary categories and relationships were developed the transcripts were once again explored in depth in a second stage of coding. During this stage connections between categories and relationships were identified and existing codes sub-categorised into minor themes. This process is known in the literature as 'axial coding' or the practice of making connections (Liamputtong & Ezzy, 2005; Strauss & Corbin, 1990). In this way more specific experiences concerned with internal migration and transfers were given a title or name. The final stage of coding then gathered minor themes into major themes. Strauss and Corbin (1990) describe this phase as the process by which all categories are then structured around a central or 'core' category. Transcripts were re-examined and quotes selected that illustrated each of the identified themes.

4.7 Conclusion

This chapter has provided an overview of the research design used in the study of internal migration and transfers in Timor-Leste. It has linked the two research hypotheses with identified themes from the review of studies in Chapter Three. On the basis of the research hypotheses the research aim was devised and subsequently broken down into six specific research objectives. In meeting these objectives, a mixed methods research design was selected. The mixed research design provided greater insight into the multidimensional nature of migration and transfer flows and impact. The development of a specific migration and transfer survey enabled the collection of specific variables imperative to meeting the aim of the research. The introduction of a qualitative component to the study offered greater insight into the lived experience of migration and transfers complimenting quantitative data and serving to help in identifying specific areas for further research. Chapter Five presents an overview of the quantitative descriptive statistics incorporating major

themes identified in qualitative analysis. Chapter Six examines the results from multivariate and econometric analysis.

The research Team

Chapter Five: Descriptive Analysis of Qualitative and Quantitative Data.

5.0 Introduction

This chapter provides an overview of migration patterns and transfer flows in the three districts used in the research. The chapter is divided into several sections. Section 5.1 provides a summary of sample characteristics. Section 5.2 analyses migration patterns, identifying migrant characteristics and discussing the perceived impact of migration on the household, furthermore descriptive differences in migrant and non-migrant households are presented. Section 5.3 identifies the type and value of transfers received by households, with specific attention given to the source of the transfer. Differences in transfer-receiving and non-receiving households are noted with a brief discussion on findings related to transfer use. This section also gives attention to an unexpected finding, that many study households had sent a transfer in the past 12 months; this section explores characteristics of transfer sending households and the reasons for sending a transfer. The final section, 5.4, examines the consumption patterns of households breaking these down into expenditure categories and also examines annual consumption by decile group.

An important caveat to this chapter is the necessity to exercise caution when interpreting descriptive results. Multivariate analysis[45] is required in order to investigate *relationships* between migrant and non-migrant households and transfer-receiving and non-receiving households.

This chapter only presents descriptive data analysis. To facilitate flow of discussion and interpretation of results, the quantitative and qualitative results are presented concurrently. In addition the tables concentrate on the frequencies and means with statistical significance presented as footnotes. A complete table of all variables with statistical difference and significance is presented in Appendix Seven.

[45] See Chapter Six for Multivariate Analysis.

5.1 Household Characteristics

After data cleaning, the final sample population covered 654 households representing 4272 individuals. Rural/urban distribution was similar across the districts with an overall 93.1 per cent rural representation. The gender distribution was similar, 49.2 per cent female and 50.8 per cent male with 61 per cent of the sample below 25 years of age. The average household had 6.5 members with the majority of households reporting a male household head (87.2 per cent).

Human capital indicators especially education were poor with a considerable proportion (65.6 per cent) of those over 5 years of age reporting either no education or failure to complete primary school. Less than 13 per cent (12.9 per cent) of individuals from the sample population had attended pre-secondary school and 13.6 per cent had attended secondary school, with only 2.9 per cent attending university. The household employment rate was low with 36.7 per cent of surveyed households reporting that no member of the household was active in any form of employment, including seasonal or contract work. However this reduced to 8.3 per cent of households when unpaid work on the family farms or businesses is included in the employment variable, signifying the importance of subsistence agriculture in household livelihoods.

The average annual household income was US$1073 with over 34 per cent of households found to be living below the basic needs poverty line of US$0.88[46] per person per day and nearly 23 per cent living below the lower poverty line of US$0.71 per person per day. From an economic perspective this implies substantial poverty among the sample population. The most recent poverty figures available for Timor-Leste are from the Living Standards Survey in 2007 (World Bank & National Statistics Directorate, 2008). Anecdotal evidence and field observations completed by the United Nations Development Program in 2012 indicate that the 2007 cost of basic needs estimate of US$0.88 per person per day is most likely an underestimation. High inflation since 2007 has substantially increased living costs in Timor-Leste (UNDP, 2011a).

[46] See World Bank and National Statistics Directorate (2008)

5.2 Migration

This section presents the descriptive data on migration patterns in the districts of Baucau, Ermera and Viqueque, the characteristics of migrants and migrant households, and the perceived impact of migration on participant households. Qualitative and quantitative results are presented simultaneously

5.2.1 Migration Patterns

Of the sample of 654 households, 45 per cent reported having at least one migrant, with an average of 1.8 migrants per migrant household. Most migration (92.6 per cent) occurred internally, with just 7.4 per cent 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 centralised, thus it is difficult for people in districts to attend these trainings."
>
> —26-year-old female FGD participant from Viqueque district

The migration data included all household members that had migrated regardless of timeframe, therefore the figures represent lifetime migration from a household. Figure 5.1 shows the breakdown of internal and international migration from each of the study districts. Clearly, Baucau district had the higher proportion of international migrants; not surprising as this district hosts the second biggest city in the country, known also by the name of Baucau. Cortina and Ochoa-Reza (2013) discuss 'stepping stone' migration patterns where rural workers are attracted to urban areas in order to find employment, however when faced with low wages seek higher paid international labour markets. It also follows that the natural progression for those who have obtained higher education and training in urban centres offering poor employment and wage prospects would also seek out international labour markets.

Table 5.1: Migration patterns in study districts

	Internal Migrants	International Migrants	Total Migrants
Baucau	185 (91.1%)	18 (8.9%)	203 (39.4%)
Ermera	138 (93.9%)	9 (6.1%)	147 (28.5%)
Viqueque	154 (93.3%)	11 (6.7%)	165 (32.0%)
Total Sample	477 (92.6%)	38 (7.4%)	515 (100.0%)

5.2.2 International Migration

With the focus of the research on internal migration, an unexpected finding was that international migration was occurring, even in remote and poorly accessible villages. Although the sample numbers of international migrants are very small they warrant a mention as these migrants, once established in their country of origin, could be important sources of international transfers and may also assist in opening up international migrant corridors to others from their village of origin. A number of studies on international migration demonstrate that the decision to migrate is largely influenced by the existence of social networks that support and encourage further migration (Curran & Rivero-Fuentes, 2003; D Massey, 1987). These networks have been linked to the persistence of migration long after changes in the original conditions that led to the departure of the first migrants (Boyd, 1989).

Indonesia was the destination of choice for the majority of international migrants with over 60 per cent (n=23) of international migrants reported to be residing in Indonesia. A much smaller proportion of international migrants were reported to have gone to Portugal (10.5 per cent). Other international destinations recorded in the survey included Malaysia, Philippines, and Australia. Under the category of 'Other', Ireland and Korea were identified as destination countries. It is estimated that immediately post-independence in 2002 between 300 and 500 Timorese workers migrated to Ireland and the United Kingdom, via Portugal to work in poultry farms, fish factories and paper mills (Shuaib, 2007). In 2003 Portugal tightened visa requirements for Timorese reducing access through that international migration corridor.

A key informant interview with a representative from the Ministry of Education reported that students offered study visas to Portugal have breached their study contracts, once in Portugal, preferring to travel to Ireland and the United Kingdom to find work.

> "The students often struggle to achieve at an academic standard in nations they are sent to study in. They lack the strong foundation other secondary graduates have...motivation to study often decreases and performance is low. Many students that have gone to Portugal make the decision to leave their studies and seek work in Ireland or United Kingdom with other Timorese already working in these countries."
>
> — Key informant interview, Ministry of Education

Qualitative data reports that migrant networks among those who have managed to secure work in Ireland and the United Kingdom are strong, with migrants now assisting friends and relatives still in Timor-Leste to find work overseas. A 38 year-old from Baucau district described the situation with his brother who had migrated to Ireland two years earlier:

> "Before he left for Ireland he already had friends there. Thus, he found ways through his friends on how to prepare the papers and he found out the network himself.... [then] he came to inform our parents and families, and we decided to send him overseas."
>
> —38 year-old male FGD participant from Baucau district

When asked about transfers he described how his family had benefited from private transfers sent from his brother:

> "People go to Ireland to find jobs, they go to look for money. My brother went there for two years and has sent US$1 000 to his father to buy a generator... [he] then sent another US$3000 to build the house. Nowadays he sends US$500 to help pay for the education of his younger siblings.....if [we] have any cultural celebrations we ask him and he sends money."
>
> — 38 year-old male FGD participant from Baucau district

The Ministry of Labour and Community Reinsertion (from 2012 known as the State Secretariat for Vocational Training and Employment or SEFOPE[47]) established a migrant worker program with South Korea in 2006 for labourers from Timor-Leste to work in the areas of manufacturing, construction, agriculture, and fishing. Participants in this program were required to remit 85 per cent of their base monthly salary (GTL, 2012b). A key informant interview from the Department of Vocational Training and Employment reported that this program was not as successful as originally expected with workers returning early due to long working hours and difficult living conditions. Nevertheless transfers from Korea have been estimated at the annual value of US$1 million (Quintão, 2012).

> "There are currently 388 labour migrants in Korea with 38 in the process of going...[Their] contract is for a maximum of 5 years and a minimum of 3 years, although many do not complete the contract. Problems [the migrants] have experienced are late payments, long working hours and difficult working conditions... they say it is very hard work."
>
> — Key informant interview, Department of Vocational Training and Employment

The small sample size of the international migrants recorded in the present survey restricted further analysis. Small sample sizes face increased risk of errors in statistical hypothesis testing and discrepancies can be undetectable (Deaton, 1997). An important consideration from this finding is that if Timor-Leste follows in the path of other small-island states international migration is likely to become more commonplace. With both the size and location of small island nation states restricting opportunity for economic growth and limiting options for livelihood diversification international migration, as a livelihood strategy, has become commonplace (Armstrong & Read, 2002). Three examples of this can be found in the island states of Fiji, Tonga and Philippines (Brown & Jimenez, 2008; D. Yang & Choi, 2007).

International migration is sure to increase in Timor-Leste as migrant networks are strengthened and human capacity developed. However, there are

[47] Sekretaria Estadu Formasaun Professional no Emprego.

barriers to international migration. A young man from Ermera, after expressing the desire to study overseas said:

> "If we want to go overseas, we will have to have visa, passport and fees. For instance, to be able to go to England, at least you need to already have a family member there, thus making it easier to go there. In [addition] we need at least US$4 000 to US$5 000 to be able to go there, this is the challenge."
>
> — 16 year-old male FGD participant from Ermera

Another respondent re-iterated the importance of migration networks in international migration.

> "It is difficult to get information on what is required to go to Ireland or another country, unless you have family who has done it. We do not know what papers are required, how to get a visa or a job."
>
> — 43 year-old male FGD participant from Viqueque

Research examining international migration in Timor-Leste would need to incorporate the major urban centres[48] and the three districts which share a border with the Indonesian province of West Timor; Oecussi, Covalima and Bobonaro. Sections of the border are particularly porous with members of extended families living on both sides. In these areas international migration would be expected to be higher than in Lospalos or Com, located on the eastern side of Timor Island.

5.2.3 Internal Migration

Figure 5.1 shows that migration was predominantly internal, with over 66 per cent (n=345) of migration to urban centres. The capital city, Dili, was the destination for 50.8 per cent (n=263) of migrants. These results are to be expected with Timor-Leste's urban population projected to double by 2020 (Bulatao, 2008). The 2010 population and housing census reported that 44.5 per cent of the population in the district of Dili was born in other districts. Of those born in other districts, 15.6 per

[48] The principal cities of Timor-Leste are Dili, Baucau, Maliana, Lospalos and Same. A study on international migration would also need to include Pante Macassar, the capital of the district of Oecussi, a coastal exclave surrounded by West Timor, a province of Indonesia.

cent came from Baucau, 11 per cent were born in Viqueque and 9 per cent had relocated from Ermera (DNE, 2011b).

Figure 5.1: Migration patterns of study districts

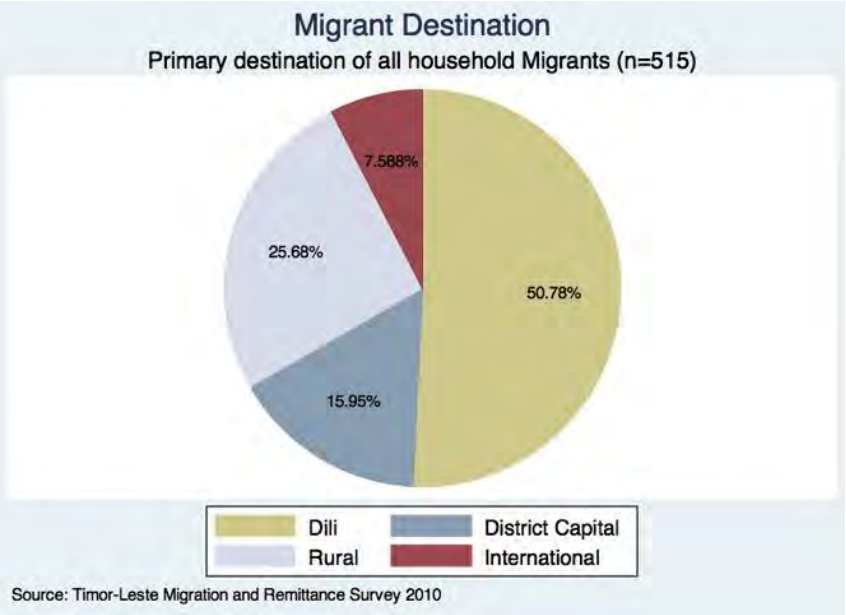


Table 5.2 shows differences in migration trends across the three districts. Households in Viqueque reported a larger proportion of younger migrants between the ages of 5 and 14 compared with Baucau and Ermera. A greater proportion of migrants from Viqueque also stated education as the main reason for migration when compared with the other two study districts, a reflection of Viqueque's physical isolation and poorer access to quality schooling. Viqueque also had a larger share of migrants who had relocated to Dili when compared with Ermera or Baucau.

Table 5.2: Characteristics of out-migrants by study districts

Variable	Total (n=515)	Baucau (n=203)	Ermera (n=147)	Viqueque (n=165)
Proportion of Migrants from each district	100.0	39.5	28.5	32.0
Gender of Migrants (%)				
Female	44.3	45.8	44.9	41.8
Male	55.7	54.2	55.1	58.2
Gender of Internal Migrants	(n=477)	(n=185)	(n=138)	(n=154)
Female	45.5	48.1	45.7	42.2
Male	54.5	51.9	54.4	57.8
Gender International Migrants	(n=38)	(n=18)	(n=9)	(n=11)
Female	21.0	22.2	33.3	36.4
Male	79.1	77.8	66.7	63.6
Age at time of Migration (%)				
(5-14 years)	13.2	8.4	10.9	21.2
(15-24 years)	58.5	60.1	63.3	52.1
(25-34 years)	17.9	18.7	15.0	19.4
Pre-Migration Education[a] (years)	8.4 (0.24)	8.7 (0.51)	8.4 (0.31)	8.2 (0.32)
Pre-Migration Activity (%)				
Employed	9.7	14.3	4.1	9.2
Contract work	8.4	12.3	8.2	3.7
Student	66.9	60.1	69.4	73.2
Unemployed	7.8	4.9	8.8	10.4
Family Status (%)				
HHH	2.3	4.4	0.7	1.2
Child of HHH	72.8	74.9	74.8	68.5
Sibling of HHH	13.4	11.8	13.6	15.2
Other relative	6.4	3.0	6.2	10.9
Destination (%)				
Same sub-district	17.3	15.3	15.7	11.5
Same District different sub-district	17.3	23.2	15.7	11.5
Different District	57.7	52.7	59.2	62.4
Dili[b]	50.3	43.8	50.3	58.2
Outside Timor-Leste	7.4	8.9	6.1	6.7
Reason for Migration (%)				
Education	60.4	53.7	61.8	67.5
Seeking Employment	15.1	20.7	11.8	11.0
Accompany Spouse	11.0	14.3	8.3	9.2
Visits home[a]	4.02 (0.27)	5.17 (0.58)	3.57 (0.32)	3.04 (0.34)

a. 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.
b. Migrant destination was examined looking at Dili specifically. Nearly 50 per cent of all migrants moved to the nation's capital.

Fewer households in Baucau reported migration to a different district or to Dili. With the district of Baucau hosting the second largest city in the nation, it possesses better infrastructure and higher quality schooling which no doubt mitigated some movement out of the district. The proximity to urban labour markets was reflected in a higher number of people in Baucau migrating for employment. Baucau district was found to have a higher proportion of migrant movement between sub-districts compared with Viqueque and Ermera.

5.2.4 Migrant Characteristics

As listed in Table 5.2, children of the household head made up the largest proportion of migrants (73 per cent) with a further 13 per cent being siblings of the household head. The mean level of pre-migration education was 8.4 years of primary and lower secondary schooling with nearly 60 per cent of migrants in the age bracket 15-24 years. Over 60 per cent of respondents reported education as the primary motivator for migration. Labour migration constituted only 15 per cent of migrants.

Migration literature reports a greater tendency for male migration[49] whereas results from the present research indicate that the patriarchal society and widespread gender inequality in Timor-Leste (UNDP, 2011a; Wayte, Zwi, Belton, Martins, & Martins, 2008) does not seem to act as a barrier for the migration of women, with 44.3 per cent of all internal migrants being female. However there was a marked gender difference among international migrants with 79.1 per cent being male. Gender differences were evident when examining the reason for migration. While the proportion of males and females stating education as the primary reason for migration was similar 20.8 per cent of males compared with 6.7 per cent of females reported employment related reasons for migration and 18.9 per cent of females compared with 4.6 per cent per cent of males cited 'accompanying spouse' as the main reason for migration.

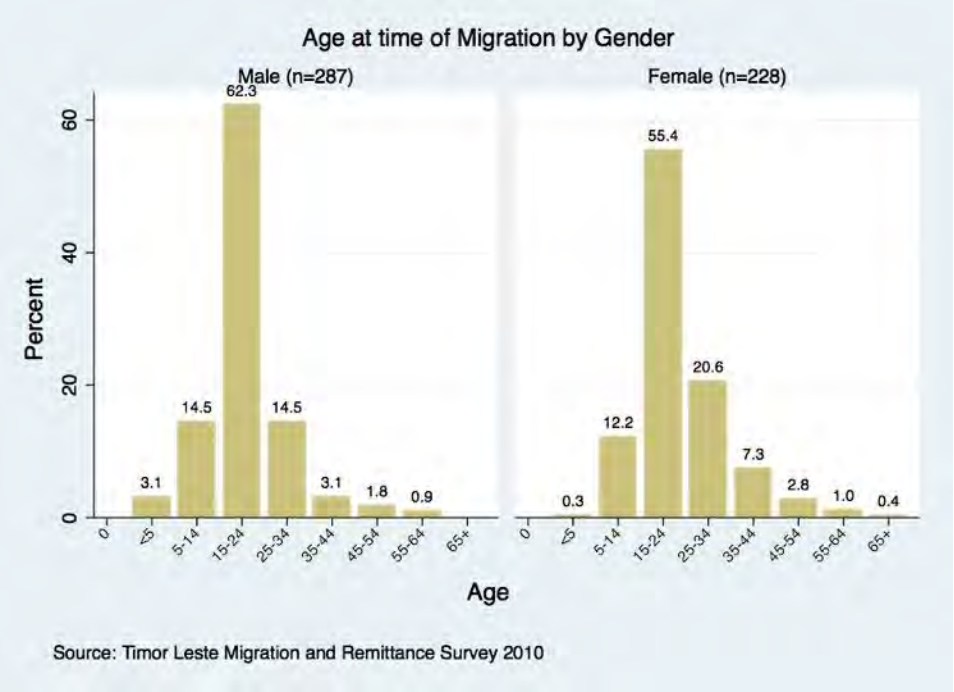
[49] Survey data from four counties in rural China showed a male migration rate 40 per cent higher than the female migration rate (Du et al., 2005). A study of migration patterns in rural Bangladesh indicated that religious beliefs and cultural constraints placed restrictions on the migration of women for labour purposes (Deshingkar & Farrington, 2006).

A young man from Baucau described the cultural gender differences in migration patterns:

> "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 male FGD participant from Baucau

Figure 5.2 clearly shows the age and gender distribution of migrants with 62.3 per cent of males and 55.4 per cent of females falling in the 15-24 year-old age bracket. The finding of migrants aged 5-14 years at the time of migration—14.5 per cent for males and 12.2 per cent for females—tends to confirm education as the main driver for migration among this younger age group[50].

Figure 5.2: The gender and age distribution of migrants at the time of migration.



[50] The 2001 participatory poverty assessment for the first national development plan revealed a strong desire for education within the country; people interviewed during the assessment cited the lack of education as the primary cause of their poverty (UNDP, 2011a).

Education was also a key theme identified through qualitative data. Focus group discussions and individual interviews revealed a sense of grief for lost years during the Indonesian occupation. Household heads desired a different future for their children and often stressed the importance of education in securing this. Furthermore, access and quality issues were viewed as drivers in sending children as educational migrants.

Interviewees frequently expressed the desire to send their children to Indonesia (usually Kupung in West Timor) for further education. Although this was viewed as the 'ultimate' or highest achievement it was also recognised as unmanageable in the absence of extensive resources. Even the process of sending a child to Dili to stay with relatives and attend school or university was recognised as a significant financial burden on the household. Table 5.3 provides a breakdown of qualitative findings on migration and education.

A 52 year-old father of 10 children and coffee farmer in Ermera district grieved his lost opportunity for education emphasising that he did not want his children to experience a future without education.

> "My youth was spent fighting for the freedom of my country… I did not [have an] opportunity for education… now I work very hard so my 6 daughters and 4 sons will all have [an] education… I have missed such an opportunity, I want my children to be able to get good jobs and have security"
>
> — 52 year-old FGD Participant from Ermera

Table 5.3: Main themes from qualitative data on migration and human capital

Codes	Sub Themes	Themes
Fighting in the resistance from a young age		
To busy working on family farm	Loss of opportunity by parent	
Helping mother with siblings		
Desire for child to have better life		
Need education to find employment	Desire for better future	
People think about their future		
Search for work and money	Economic return	Motivation for migration
Improve the country in the future		
Timor will become advanced if people are educated	Patriotism	
Timor-Leste needs to prepare people with skills		
Schools are too far		
Roads are in poor condition		
No transport for the children	Physical access	
Buildings destroyed, need new buildings		
Only the wealthy can afford to send children as migrants	Financial access	Access to education
Teachers don't turn up		
No books, pencils	Quality	
Schools in Dili better quality, better teachers and more resources		
Family make the decision to send a child for education	Joint decision making	
Desire for children to be educated		
Will become intelligent if educated	Expectations of household	Social influences
Will not advance if not educated		
Will support other household members to get an education		
Moving is expensive		
No money to buy land or rent house in Dili	Cost	
Need friends or relatives at destination		
Children have to stay with other people	Networks	
Cannot stay with family long term		Barriers to migration
Need to find job before leaving	Employment	
Difficult to get information unless you know someone who has migrated	Lack of information	
Need family in institution or company to get employment	Nepotism	
Only temporary contract employment available	Insecure	Access to employment
Need training		
Have no skills		
Foreign workers coming in taking jobs as they have skills Timorese don't have	Skill deficit	

During focus group interviews in more remote villages the problem of access to schooling was highlighted. Members of one village stated that the primary school was a six-hour round trip walk from the village.

A 17 year-old youth from this village was asked about his educational experience.

> "The nearest primary school is 3 hours 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 male FGD participant from Viqueque

He further laments on the lack of education when asked about internal migration within his village:

> "There are no migrants from this village. We have no education so we cannot go to find work in another place.... actually there is only one, one of us has gone to Dili and works as a security guard. The [rest] of us, there is only one future without education, to work in the fields"
>
> — 17 year-old male FGD participant from Viqueque

When asked about her understanding of internal migration in the district in which she works a key informant from a teachers training college said,

> "Households in urban centres often have many extra's in their house. One of the teachers working at the institute has 6 children in addition to his own that are staying with him.... they are staying with him for their education... the quality of education in the villages is very poor, some [parents] choose to send their children to relatives in Baucau [city] or Dili."
>
> — Key informant, teachers training college in Baucau

With most upper secondary schools located in larger centres and limited transport infrastructure (Earnest, Beck, & Connell, 2008), it is common for young people to move to live with relatives or friends and be closer to senior high schools or other training centres. For university education, students must relocate to Dili, the nation's capital where the only universities in the country are located; Universidade Nacional de Timor-Lorosae and Universidade da Paz.

The most recent National Development Plan identifies the need to develop a quality higher education system with plans to develop polytechnic institutes, including one for each strategic industry, in districts other than Dili. For Example; this includes a polytechnic related to the petroleum industry to be established in Suai, a polytechnic for agriculture based on the south coast and service industry polytechnic focussing on tourism and hospitality to be located in Lospalos (GTL, 2012b).

5.2.5 Characteristics of Migrant Households

In descriptive analysis migrant households were found to differ from non-migrant households in several important characteristics[51]. Table 5.4 demonstrates the average annual household income of migrant households was substantially higher than that of non-migrant households. Per capita income was also higher for migrant households than households without a migrant. Both migrant and non-migrant households received transfers, these transfers accounted for 26.8 per cent of total household income for migrant households and 27.8 per cent of total household income for non-migrant households.

[51] Refer to Appendix Seven, Table A7.1 for a complete table of descriptive variables, their means and significance.

Table 5.4: Mean income of migrant and non-migrant households in the 12 months preceding survey

	All Households (n=654) (US$)	Non-Migrant Households (n=360) (US$)	Migrant Households (n=294) (US$)
Average Total Income ($US)	$1073	$682	$1554[b]
Average Home Income ($US)	$908	$488	$1427
Average Transfer Income[a] ($US)	$291	$190	$416
Average Per capita Income ($US)	$197	$147	$257[c]

a. Transfer income is inclusive of all in-kind and monetary transfers including both formal and informal transfers.
b. The higher mean household income of migrant households compared with non-migrant households was statistically significant (t-test statistic = 3.46, p-value < 0.001).
c. The higher mean per capita income of migrant households compared with non-migrant households was statistically significant (t-test statistic = 3.08, p-value < 0.01)

Of the 294 households with at least one migrant, only 18.7 per cent received a cash or in-kind transfer from a migrant. Of migrant households 28.6 per cent reported receiving the government solidarity pension. Less than 5 per cent (4.4 per cent) of migrant households received both the pension and migrant transfers, providing some indication that government pensions could have a 'crowding out'[52] effect on migrant transfers. The crowding out effect is described in economic literature as the propensity for migrants to decrease or cease sending transfers as a direct result of increased government transfers such as introduction of pensions.

Human resource and capital outcomes are higher for migrant households with higher numbers of both employed persons and seasonal/contract workers[53]. The average number of household members over the age of 15 years with higher education (both secondary and tertiary) was also higher for migrant households[54]. Migrant households have on average larger households, older household heads and a

[52] In a study examining the effect of public and private transfers on household expenditure patterns and poverty in South Africa the crowding out effect was found only in households below the poverty line (Maitra & Ray, 2003)

[53] The lower proportion of employed persons in non-migrant households is statistically significant for those classified as 'employed' (t-test statistic = -2.20, p-value < 0.05), although not statistically significant for seasonal/contract workers (t-test statistic = -1.10, p-value > 0.05).

[54] The larger proportion of household members over the age of 15 years that had completed secondary education was statistically significant (t-statistic = 4.05), p-value < 0.001). Likewise, the larger proportion of household members over the age of 15 years that had undertaken university education was statistically significant (t-statistic = 4.60, p-value < 0.001).

greater number of household members over the age of 15 years[55]. Higher human resource and capital outcomes were expected among households with a migrant given that the majority of migrants move to seek further education which would lead to greater employment opportunities. This finding is consistent with those of other migration literature.

Table 5.5 provides a comparison of asset value for both migrant and non-migrant households. Migrant households possess significantly higher house and cultivable land value[56]. Households with at least one migrant are also more likely to own a motorcycle, television, satellite dish and mobile telephone[57]. This finding indicates that migrant households are more likely to have greater access to resources, enabling them to take risks associated with sending a migrant.

Table 5.5: Average value of assets for migrant and non-migrant households

Asset	All Households (n=654)	Non-Migrant Households (n=360)	Migrant Households (n=294)
House*	$1561.54	$1225.15	$1996.55
Cultivable Land*	$7027.40	$4312.29	$10 938.98
Livestock	$1520.88	$1025.50	$2154.18
Car	$858.99	$32.24	$1881.79
Motorcycle*	$110.07	$67.40	$162.71
Washing Machine	$0.23	$0.0	$0.51
Television*	$19.72	$10.7	$30.81
TV Satellite Dish*	$8.98	$4.88	$14.03
Mobile Telephone*	$43.99	$28.74	$62.81
Radio	$13.97	$11.84	$16.59
Jewelry	$106.37	$38.13	$191.20
Other Assets	$27.01	$49.17	$0.0

* Variables showing a statistically significant difference between non-migrant and migrant households.

[55] The differences noted were shown to be statistically significant with the average size of migrant households significantly larger (t-statistic = 2.61, p-value < 0.01) than for non-migrant households. The average age of the household head was significantly older for migrant households (t-statistic = 5.14, p-value < 0.001) than for household who didn't report a migrant. The average number of household members over 15 years of age was significantly significant (t-statistic = 4.29, p-value < 0.001).

[56] The mean higher housing and cultivable land values for migrant households when compared with non-migrant households were shown to be statistically significant (t-statistic = -3.32, p-value, 0.001 and t-statistic = -3.96, p-value, 0.001, respectively).

[57] The mean higher values of motorcycle, television, TV satellite dish and mobile phone for migrant households when compared with non-migrant households were shown to be statistically significant (t-statistic = -1.98, p-value = 0.05 and t-statistic = -3.27, p-value = 0.01, and t-statistic = -2.06, p-value = 0.05, respectively).

Economic risks faced by households sending a migrant are complex and can range from increased financial insecurity due to loss of farm labour, selling of assets or acquisition of loans. A family that has assets and resources is more able to bear migration costs than a household with none. The chief of an *aldeia* in Viqueque commented on the necessity to have access to resources and networks in order to participate in migration.

> "Sometimes it is difficult to move from place to place, you need money and a place to live. Many don't have the means to find work... people from this aldeia will assist others. Some invite other family members to come and work and send money back. Normally they help each other."
>
> —Interview with *xefe de aldeia* in Viqueque

Alternatively, such a finding could indicate that migration and resultant transfers enable households to increase investment in housing and land[58]. A 40 year-old from a village in Baucau district discussed how the migration of his brother enabled his household to invest in housing.

> "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 male FGD participant from Baucau

5.2.6 Impact of Migration on Origin Households

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 private transfer. This is especially relevant in the context of Timor-Leste where the primary reason for migration is education.

[58] Studies in Guatemala and the Philippines showed households receiving internal transfers spent more at the margin on housing. (R. H. Adams & Cuecuecha, 2010b; Quisumbing & McNiven, 2010)

Subjective data from the household survey portrayed a perception among respondents that the sending of a migrant had a largely positive impact on the household. Table 5.6 displays the responses interviewees gave when asked how migration had impacted on the household. It is important to note that the list of possible impacts provided in Table 5.6 was read to the respondent and they replied *yes* or *no* if they thought it relevant to the experience of their household. A predetermined list does not allow for recognition of alternate impacts. Each respondent was also asked whether migration had affected their household in another way, not identified by the list, if the answer was *yes* this was marked as 'other'.

Table 5.6: 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[a]
Increased Income of household	106	36.1%
Increased education of household	128	43.5%
Increased education of migrant	143	48.6%
Increased skills of migrant	123	41.8%
Lower cost of living as a result of absence of migrant	30	10.2%
More leisure time	2	0.7%
No effect	48	16.3%
Forced to spend money on migration	47	16.0%
Household members work longer and harder	40	13.6%
Emotional stress as a result of family separation	8	2.7%
Lack of parents' care	2	0.7%
Forced to hire labour	0	0.0%
Other	5	4.4%

a. The question encouraged multiple answers. Totals and percentages in the table indicate the number of times the impact was selected by respondents from migrant households.

With only five households signifying another impact it was felt the predetermined list was comprehensive, providing a reliable overview of perceived subjective impacts of migration on the household. The value the Timorese place on education is reflected in the high proportion of households indicating that improved education status of the migrant and household was one of the main impacts of migration on the household.

Closer examinations of responses specific to households demonstrated that 80 per cent (n=239) of households with at least one migrant felt migration had a positive impact on their household, 16.4 per cent (n=48) reported no effect and 2.4 per cent (n=7) reported migration was solely a negative experience (i.e. they answered 'yes' to only the negative impacts listed in Table 5.6). Most households reported multiple effects of migration with 25 per cent (n=73) of migrant households experiencing a mix of positive and negative effects.

In section seven of the household survey, immediately after asking the value of household assets, two additional questions were asked specific to migration. Households were asked wether the migration of a household member had facilitated asset accumulation and wether in order to send a migrant the household had to dispose of assets. Nearly 33 per cent said that migration had enabled an increase of household assets while 26 per cent reported the selling of household assets to fund migration. A finding that migration was credited with having a positive impact on household income by 36.1 per cent of households will be explored further in the following sections.

Findings from qualitative data supported the quantitative results. When a young woman from Viqueque was asked about her views on the impact of internal migration on the household, recognising the challenges she indicated it was an important step in improving their lives.

> "I think when we talk about life, there is always conflict, it is inevitable. It depends on how we make [a] decision, how 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 FGD participant from Viqueque

A village chief in an isolated rural village in Baucau district spoke about internal migration saying:

> "By sending our children to school in Dili we believe they will get a better education and improve the life of the household in the long-term. The children will come back to work and build Timor's nation. They will come back here to work and help the family build a house and send others for education. Especially in this *aldeia*, there are many lives improved because of migration".
>
> — Interview with *xefe de aldeia* from Baucau

One aspect of migration that is essential to recognise is the potential impact of migration on the community at large, including non-migrant households. It was beyond the scope of this study to explore the theme further but a common issue raised in interviews was jealousy among the community toward migrant households who have noticeably experienced an improvement in livelihood. The issue was discussed at length in a village in Baucau district that had a number of international migrants.

> "There is jealousy in the community between those households who do not have a migrant and those who have. They [the non-migrant household] see their [the migrant household] life is much improved. But as they see living conditions improve for households with a migrant it also encourages others to migrate and send money home... so it is for the best".
>
> — 29 year-old male FGD participant from Baucau

Follow-up studies on migration and transfers in Timor-Leste would be advised to explore the impact of migration on the wider community and the development of migrant networks within villages that participate in migration.

5.3 Transfers

This section presents the descriptive data on transfers received by the household, the perceived impact of these transfers, and transfers sent by the household. Qualitative and quantitative results are presented simultaneously. A summary of qualitative themes identified during semi-structured interviews is presented in Table 5.7.

Table 5.7: Main themes from qualitative data on migration and transfers

Codes	Sub Themes	Themes
Send rice and money to migrant Send local vegetables Problem with food and firewood Costs are high in urban centres	Support migrant	Transfers sent
Send food to host household	Prevent hostility	
Send money when cultural event	Sociocultural Events	
Collect money from Dili Migrant bring money back Sometimes use bus driver Government or NGO Transfer to my bank account	Method of receiving	Transfers received
Migrant Government pension Other source	Received From	
Can build a house We built a water tank Able to build a good roof	Construction	Transfer use
Pay school fees Always more expenses	Education	
Buy food For fuel	Basic needs	
Purchase medicines	Health	
Mobile telephone, television	Consumer Durables	
Purchase animals	Livestock	
Spending on funerals, barlake[59] and parties Spending is more than for education	Spending on Sociocultural Events	
Used to pay for migration of others Loan repayment for migration costs	Migration Costs	
Some people save money Difficult to save because of cultural ceremonies	Savings	
Migrant decides how much to send Migrant decides what to spend money on Person who receives money decides use	Decision making	
Improve the economy of household Transfers improve quality of life Transfer only source of cash for the household	Household Livelihood	Transfer Impact
People can feel jealous See improved life and encourages others to migrate	Community impact	

[59] Barlake refers to the payments provided by families during wedding celebrations. It often includes livestock, jewellery, clothing and cash and can amount to thousands of dollars

5.3.1 Transfers Received

Internal transfers were received by 49.2 per cent (n=322) of sample households in the 12 months preceding the survey. Of the transfer-receiving households, 73.8 per cent received a cash transfer, 44.7 per cent received an in-kind transfer (food, goods, produce) and nearly 23 per cent of households received both.

5.3.1.1 Private Transfers

Only 17.7 per cent of transfer-receiving households (n=57) received a transfer from a household migrant. Male migrants sent 71.9 per cent of migrant transfers, with nearly 50 per cent of the senders between 25-34 years of age. Migrants sent cash transfers on an average of 3.6 times in the 12 months preceding the survey with an annual average value of US$151. Over 50 per cent of migrant transfers came from Dili with a member from the household responsible for collecting the money and bringing it back to the household[60]. For these households 29.8 per cent of total household income was derived from these private transfers. In contrast, 28.7 per cent of households with at least one migrant received the government solidarity pension, which constituted 61.1 per cent of total household income, confirming the initial assumption[61] that led to the inclusion of public and private transfers.

Qualitative data offered some explanation for the low rate of private transfers. The high cost of living in Dili was considered a barrier to transfer flows back to the village. When discussing transfer flows a young man from Viqueque said:

> "Life in Dili is difficult because everything is about money. So, for example, if a person is just an ordinary labour[er] whose monthly salary is around US$85.00, 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 male FGD participant from Viqueque

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[60] Ratha, Mohapatra, et al. (2011) found that internal migrant workers in Africa transferred transfers mainly through informal channels such as the migrant bringing money during visits or sending money thru friends and relatives, with the exception of Kenya, where mobile banking is well-established and mobile phones and telecommunication providers are an important channel for transferring money.

[61] The initial assumption made in Chapter 3 pointed out that in the context of limited employment and high poverty, public transfers may be more prolific than private transfers.

This was re-iterated by a young woman from a remote village in Baucau.

"The cost of living [in Dili] is very high. The only work in Dili is as a public servant or with an NGO. If you find this job you can send money home otherwise it is too difficult to survive in Dili".

— 28 year-old female FGD participant from Baucau

With the high cost of living in Dili it is common for migrants to work together to try and reduce living costs. A 42 year-old male from a rural village in Viqueque said:

M: "In places where there is no family sometimes four or five people go there in a group, thus making it easy for them to find a house and stay together. This happened with my siblings and their friends."

Researcher: "Do they send money home to the village?"

M: "They work in different places, for instance, some sell mobile phones and tape recorders. Those [people] earn little money and decide to come back to the village instead. If you work in a project you can earn more and it is possible to send some home".

— Interview with a 42 year-old male from Viqueque

A village chief from a rural village in Viqueque described internal migration and transfers from his perspective:

VC: "Those that go to Dili do not send money back. They find work and get on with life in Dili".

Researcher: "Why do you think they do not send money back to their family?"

VC: "I think they make a new life in Dili and are not interested in the village... they come for cultural celebrations and contribute some money then".

— Interview with *xefe de aldeia* from Viqueque

Temporary migration was commonly reported among migrant households with migrants securing short-term or contract work. The 2010 Labour Force Survey conducted by the International Labour Organisation reported a high rate of precarious employment[62]. In this context it is probable that migrants would complete their contract and then bring wages home with them in preference to facing the costs and risks associated with sending money back to the household. A 28 year-old male from Viqueque said,

> "Temporary work is very common... jobs such as fixing the road, small projects, temporary contracts... [the migrant] will go, work and come back, this is very common."
>
> — 28 year-old male FGD participant from Viqueque

A 34 year-old male from Ermera said,

> "They work for a year on a project, then [the project] is finished and they do not stay permanently in one place, they come and go all the time... maybe they find another project or they come back... there are many people doing that."
>
> —34 year-old male FGD participant from Ermera

Due to the small sample size that received transfers from household migrants in addition to a finding that a large number of non-migrant households were also recipients of private transfers, it was decided to analyse the data by comparing the differences between transfer-receiving and non-receiving households with the focus on origin of income flows in preference to the presence or absence of a migrant. In Table 5.8 the mean values of transfers received are provided for each study district and the total sample, with standard deviations in parenthesis. Interestingly, when the government solidarity pension[63] was removed from transfer totals the average transfer received by households dropped substantially.

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[62] Refer to Chapter Two for further details.

[63] The value provided includes the value of all cash and in-kind transfers excluding the pension. Other forms of government solidarity payments, such as resettlement packages and funds from NGOs were not removed and are included in these totals.

Table 5.8: Mean value of transfers received by transfer-receiving households in the 12 months preceding survey[a]

	Total (n= 322) (US$)	Baucau (n=99) (US$)	Ermera (n=109) (US$)	Viqueque (n=114) (US$)
Mean value of goods transfer received	$56(9)	$29(10)	$75(20)	$61(16)
Mean value of cash transfer received	$358(36)	$343(35)	$325(81)	$402(58)
Mean Total Transfer received[b]	$435(36)	$372(36)	$400(81)	$463(58)
Mean Total Transfer excluding Pension[c]	$178(40)	$114(34)	$200(78)	$185(58)

a. All values are in US$ (the national currency of Timor-Leste) with standard deviations in parenthesis.
b. With 95 per cent confidence intervals for the variable mean estimation, the upper and lower bound estimates for Total Transfers received for transfer-receiving households are $342.50 - $482.18. District specific 95 per cent confidence intervals for the estimation of Total Transfer received by transfer-receiving households are; Baucau: $301.36 -$441.78, Ermera: $239.48 - $559.84, and Viqueque: $347.83 - $570.98.
c. With 95 per cent confidence intervals for the variable mean estimation, the upper and lower bound estimates for Total Transfers received excluding the pension for transfer-receiving households are $99.45 - $570.98. District specific 95 per cent confidence intervals for the estimation of Total Transfer received excluding the pension are; Baucau: $46.58 -$182.27, Ermera: $44.84 - $354.47, and Viqueque: $70.62 - $298.71.

5.3.1.2 Cash Transfers Received

Public transfers were the predominant way in which households received cash. Of the households that reported receiving a *cash* transfer, 80.9 per cent (n=191) had received funds from the government with 177 households receiving the pension[64]. The government pension and solidarity payments therefore, constitute the majority of cash transfers received by transfer-receiving households. 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 the interviews and therefore would capture any solidarity payments administered between October 2009 and October 2010. Across the districts there was some variation of note.

In Ermera and Viqueque, a high proportion of households receiving cash transfers reported receiving the government pension (over 80 per cent in each district), however in Baucau a higher proportion of households receiving cash transfers reported receiving money from migrants (31.4 per cent) with 66 per cent receiving the government pension. A possible explanation is that households in

[64] Refer to Chapter Two for details on beneficiaries and value of the pension.

Baucau rely more on informal means of social protection (private transfers) that could be related to higher rates of employment among migrants from this district.

The large majority of cash transfers were sent to either the household head (63.4 per cent) or the spouse of the household head (26.4 per cent). When asked which member of the household decided on how the cash transfers was spent 54.2 per cent of households said the household head while 36.9 per cent of households reported the spouse of the household head made the decision. A member of the household classified as 'other relative' received a further 10.2 per cent of cash transfers, all were over 65 years and therefore the 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 transfer to make the decision of how it is spent.

5.3.1.3 In-kind Transfers Received

In-kind transfers included all goods sent by or received by households categorised in the household survey as food, clothing, electronic articles, mobile phone and other. In contrast to cash transfers, nearly 40 per cent of in-kind transfers were received from migrants of the household with just over 50 per cent received from government solidarity or NGOs. Similarly to the previous findings related to cash transfers, households in Baucau received a greater proportion of in-kind transfers from household migrants (69.2 per cent) and a smaller proportion from government solidarity or NGOs (15.4 per cent).

The reversal occurred in Ermera and Viqueque where a smaller proportion of in-kind transfers were received from household migrants (25.4 per cent and 31.3 per cent, respectively) and a much greater proportion was received from government solidarity and NGOs (61.9 per cent and 62.5 per cent, respectively). Food was the predominant in-kind transfer received by households. Nearly 77 per cent of in-kind transfers received by households in Baucau included food items with 69.8 per cent and 60 per cent in Ermera and Viqueque respectively.

5.3.2 Transfer-receiving Households

Transfer-receiving households differed from households not receiving transfers in some important ways[65]. Table 5.9 illustrates the income of transfer-receiving households was only marginally higher than that of non-transfer-receiving households when public transfers were included in income totals[66]. Transfers accounted for nearly 40 per cent of total household income for transfer-receiving households. The lower average home income of transfer-receiving households suggests transfers are reaching the poorest households[67].

Table 5.9: Mean income of transfer-receiving households in the 12 months preceding survey[a]

	All Households (n=654)	NRRHH[b] (n=332)	RRHH[c] (inc Pension) (n=322)	RRHH (exc Pension) (n=191)
Average Total Income	$1073	$1053	$1094	$846
Average Home Income	$908	$1053	$690	$688
Average Transfer Income[d]	$291	-	$435	$178
Average Per capita Income	$197	$172	$200	$142

a. All values are in $US (the national currency of Timor-Leste).
b. NRRHH = Non-transfer-receiving household.
c. RRHH = Transfer-receiving Household.
d. Transfer income is inclusive of all in-kind and monetary transfers including both formal and informal transfers.

When public transfers are treated as exogenous and removed from household income, the mean household income received by transfer-receiving households drops substantially although this difference in mean income was not found to be statistically significant[68]. This observation may indicate public transfers increased household income and potentially have a positive impact on livelihood. However, caution needs to be exercised in drawing conclusions about relationship between income and transfers using descriptive statistics; the analysis does not take into account indirect effects of transfers on income.

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[65] Refer to Appendix Seven, Table A7.2 for a complete table of descriptive variables, their means and significance.

[66] The difference in mean observed Total Income of transfer-receiving households and non-receiving households was not statistically significant (t-statistic = 0.84, p-value > 0.05).

[67] The difference in mean observed home income of transfer-receiving households and non-receiving households was not statistically significant (t-statistic = 1.44, p-value > 0.05).

[68] The difference in mean observed Total Income of transfer-receiving households excluding the pension and households not receiving transfers was not statistically significant (t-statistic - 0.84, p-value > 0.05).

A finding of note was that households receiving transfers generally had a household head with lower education than non-receiving households. This is contrary to findings in the literature that commonly report higher education levels among migrant and transfer-receiving households. The result is most likely due to the high number of households receiving government solidarity payments that had limited opportunity for education during the Portuguese colonisation (Hill, 2007).

The Portuguese administration of East Timor did not promote the education or the skill development of the indigenous Timorese population. Limited physical infrastructure beyond the major towns and cities prohibited access to the large majority of the population with only elite tribes (such as the *liurai*) close to the main centres accessing education and training (Molnar, 2010). Although Indonesia promoted education in Timor-Leste, developing physical infrastructure and building schools in many rural areas, those fighting in the resistance did not have access to such educational opportunities (Hill, 2007).

A middle-aged man in a remote village in Ermera had sent three of his children away for education. Two children were studying in secondary school in Gleno, the district capital and one was in Dili at university.

> "Many who fought in the resistance went without [an] education… we started fighting while we were still young and did not stay in one place to receive an education. Others who studied in Indonesia and abroad now have good jobs in the public service. We can only help our children now and think of their future."
>
> — 48 year-old male FGD participant from Ermera

Transfer-receiving households had a greater number of female-headed households, representing 17 per cent of total transfer-receiving households, slightly more than their total representation in the sample (13 per cent)[69]. The most plausible explanation is the government solidarity pension given to widows of ex-combatants and war veterans. Although male migrants do travel for employment purposes, in

[69] The higher proportion of female-headed households in transfer-receiving households when compared with non-receiving households was statistically significant (t-statistic = 2.96, $p < 0.01$).

some cases sending transfers back to their households, in the household roster they are consistently recorded as the head of the household.

The age of the household head was higher for transfer-receiving households[70]. Transfer-receiving households had, on average, more household members over the age of 15 years, more migrants and on average and more household members over 65 years of age, these findings were all statistically significant[71].

5.3.3 Transfer Use

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

Nearly 51 per cent of transfer-receiving households reported using transfer transfers to pay for education costs including materials, uniforms, transport, fees and other costs. Of these nearly 70 per cent said the education would not be possible without the transfer. Over 57 per cent of transfer-receiving households reported transfers were spent on health care costs in the past 12 months including consultation fees, medicines, hospital treatment and transport. Of these, over 54 per cent said the health care would not have been possible without the transfers.

Qualitative data collection revealed transfers were used for a variety of purposes (see Table 5.7). While it could be argued that transfers were spent on consumption rather than productive investment, this is not necessarily a negative outcome. In a nation experiencing high levels of poverty, consumption on the items

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[70] The difference in the mean age of the household head in transfer-receiving households compared with non-receiving households was statistically significant (t-statistic = -6.51, p-value < 0.001).

[71] The higher average number of household members over the age of 15 years in transfer receiving households, compared to non-receiving households, was statistically significant (t-statistic = 3.13, p-value < 0.01). The higher average number of household members over the age of 65 years in transfer receiving households, compared to non-receiving households, was statistically significant (t-statistic = -0.93, p-value < 0.001). The higher average number of migrants per household for both transfer receiving households including and excluding the pension was statistically significant when compared with non-transfer receiving households (t-statistic = -4.46, p-value < 0.001 and t-statistic = -5.16, p-value < 0.001, respectively).

listed may lead to improvements in the livelihood of household members. The list reflects similar findings by Deshingkar (2005) who argued that these uses are indeed an investment by the household, with a positive impact on the wellbeing of family members.

There exists a strong cultural practice across Timor-Leste of giving money for social events such as funeral rites, barlake[72] and parties; recognised as an important social fabric of Timorese culture. However 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. A 35 year-old male from Ermera said:

> "They use [transfers] 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 male FGD participant from Ermera

Another focus group discussion participant in Ermera said:

> "We, in Ermera, are recognised for spending much money on cultural celebrations than other districts. We can receive US$4 000 or US$5 000 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 male FGD participant from Ermera.

A man in Viqueque who was trying to save to send his son to Kupung in Indonesia for further studies expressed his frustration with the expectation to spend on cultural practices:

> "You can do the payment from generation to generation, no end, even until death you still pay money, [it is] never enough... I put some money aside for my son's education and then there is another cultural celebration."

[72] Barlake refers to the payments provided by families during wedding celebrations. It often includes livestock, jewellery, clothing and cash and can amount to thousands of $US.

— 45 year-old male FGD participant from Viqueque

The ability to save transfers was limited due to the expectation of households to contribute to these cultural celebrations. A village chief living in a remote village in Ermera with a migrant son living in Dili said:

> "Yes, [the migrant] sends us some money but it is difficult to save here due to the traditional culture and ceremonies."
>
> — Interview with a *xefe de aldeia* from Ermera

A 63 year-old female from Ermera had this to say about money spent for sociocultural celebrations:

> "Much money is spent on the cultural celebrations, if a migrant cannot manage to send money for other reasons, they will send it for cultural celebrations. People may start to realise money is of greater benefit if spent on education."
>
> — 63 year-old female FGD participant from Ermera

5.3.2 Transfers Sent

An unexpected finding in the analysis was the proportion of households sending transfers to migrants and other households throughout the country. In all three districts more than 40 per cent of households reported sending transfers. Table 5.10 summarises the average transfers sent by households, with standard deviations in parenthesis.

Table 5.10: Mean value of transfers sent in the 12 months preceding survey by transfer sending households[a]

	Total (n= 275)	Baucau (n=96)	Ermera (n=91)	Viqueque (n=88)
Mean value of goods transfer sent	$57.27 (6.25)	$55.19 (9.74)	$59.49 (10.71)	$57.13 (12.03)
Mean value of cash transfer sent	$180.31 (24.19)	$191.96 (39.84)	$176.53 (54.13)	$172.53 (28.83)
Mean Total Transfer Sent	$242.28 (26.56)	$253.34 (44.25)	$237.42 (56.44)	$236.12 (34.94)

a. All values are in $US (the national currency of Timor-Leste) with standard deviation in parenthesis

Food and clothes were the most commonly sent in-kind transfer with 95.4 per cent of households who sent an in-kind transfer, reporting sending food and 12 per cent reporting sending clothes.

Table 5.11 provides a breakdown of reasons given for cash transfers sent. Nearly 70 per cent (69.4 per cent) of households sending cash transfers sent transfers to help support the basic needs of the recipient and 64.4 per cent reported sending cash to help pay for education costs. Of transfers sent 3.5 per cent went to household members studying in Indonesia, the mean annual value of transfers sent to Indonesia was equal to US$1017.

> "I want to send my son to Indonesia to study but I need to save too much money… I must continue to send to help cover his education costs and needs while he is there."
>
> — 40-year-old male FGD participant from Viqueque

Table 5.11: Reason for sending a cash transfer

Effect of Migration on the Household	Households Sending a cash Transfer (n = 231[a])	Proportion of Transfer Sending Households[b]
To help support basic needs	160	69.4%
To pay for health care costs	36	15.6%
To pay for education costs	149	64.4%
To contribute to a sociocultural celebration	18	7.8%
Other	8	3.5%

a. The total number of transfer sending households was 276, however 231 reported sending cash transfers.
b. The question encouraged multiple answers. The totals and percentages in the table indicate the number of times the impact was selected by respondents from migrant households.

It is evident from the results that rural-urban linkages could play an important role in the survival of urban migrants in Timor-Leste. A large majority of transfers sent from households were sent to urban areas (69.5 per cent) with 73 per cent of these transfers going to Dili. Almost 66 per cent of transfer recipients were between 15 and 24 years of age. Qualitative data revealed that households send food, clothes and cash to household migrants in order to assist with living and education costs.

A young woman discussing the challenges of internal migration stated:

> "For new people who have just moved to Dili certainly face difficulties such as finding accommodation, there is also a problem with food and firewood. We must support them..."
>
> — 26-year-old female FGD participant from Viqueque

When asked what they send and how they support a migrant in Dili she replied,

> "We send local vegetables; local foods like sweet potatoes, roots and corn, we also send rice..." year-old
>
> — 26-year-old female FGD participant from Viqueque

A gentleman discussed how he supported his son, who studying in Dili:

> "My son stays with my sister in Dili to complete his studies, but it is difficult. My sister has children and life is expensive in Dili... we must help to support our son... we send food and sometimes money if we can".
>
> — 47-year-old male FGD participant from Ermera.

A similar finding was described by E. K. Campbell (2009) who, in examining internal migration and transfer flows in Botswana, found that a considerable amount of gross transfer was made by the household to migrants, particularly migrants in school or searching for employment. Migrants are often reliant on relatives or friends at the destination for accommodation and support, it is expected that the migrant's household of origin will assist in whatever way they can.

> "Usually we send food for the family in Dili... life is very expensive in Dili...even if we have relatives in Dili, that does not mean they will guarantee support for years [they] also have to fulfil their needs, otherwise problems may arise from relying solely on the relatives. We must be aware that the living expenses in Dili [are] very high... so we need to help our migrants."
>
> — 58 year-old male FGD participant from Viqueque

It was found that over 56 per cent of households with at least one migrant sent a transfer. This was unexpected given the high poverty rate and largely cashless rural economy. It is possible that the introduction of government solidarity pensions may have had an impact on this out-flow of transfers from rural households. Unfortunately due to the lack of any previous transfer data this assumption cannot be confirmed. Considering the migration figures previously reported it could 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. A surprising finding was that less than 8 per cent of transfer sending households sent cash for the purpose of contributing to sociocultural celebrations. Given the perceived financial burden of celebrations reflected in interview data transfers were expected to be much higher for this item.

5.3.2.1 Characteristics of Transfer-sending Households

Transfer-sending households differed from non-sending households in some important characteristics[73]. As one would expect, transfer-sending households reported an average higher total income and higher mean per capita income compared with non-sending households[74] (Table 5.12) providing some evidence that it is households with greater resources that send cash and goods to others.

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[73] Refer to Appendix Seven, Table A7.3 for a complete table of descriptive variables, their means and significance.

[74] The difference in mean observed Total Income of transfer-sending households when compared with households who hadn't sent a transfer was statistically significant (t-statistic - 2.58, p-value < 0.01). Similarly, the difference in mean observed per capita income of transfer-sending households when compared with households who hadn't sent a transfer was also statistically significant (t-statistic - 2.90, p-value < 0.05).

Table 5.12: Mean Income of transfer sending households in the 12 months preceding survey[a]

Variable	All Households (n=654)	Transfer Non-Sending Households (n=378)	Transfer Sending Households (n=278)
Average Total Income ($US)	$1073.34	$811.54	$1659.39
Average Home Income ($US)	$908.42	$614.62	$1293.45
Average Transfer Income[a] ($US)	$290.77	$202.05	$385.56
Average Per capita Income ($US)	$196.54	$161.46	$237.05

a. All values are in $US (the national currency of Timor-Leste).
b. Transfer income is inclusive of all in-kind and monetary transfers including both formal and informal transfers.

The average age of the household head was higher in transfer-sending households[75]. It was considered that perhaps a larger proportion of transfer sending households received the government pension and therefore had access to additional resources. A closer examination of the data proved this to be not the case, with 22 per cent of transfer sending households and 31 per cent of non-sending households reportedly receiving a pension. When examining total transfers inclusive of public and private transfers the proportion of recipient households was the same for both transfer sending and non-sending households (49 per cent). The difference in the average home income was markedly higher for transfer sending households. This was also found to be statistically significant[76], indicating that wealthier households are able to send transfers and help support household migrants. Not surprisingly the number of migrants is also statistically significantly higher for transfer-sending households[77].

In keeping with findings mentioned in the previous section transfer sending households had a higher number of household members (both male and female) over the age of 15 years[78]. Transfer-sending households also possessed significantly

[75] The higher average age of the household head in transfer-sending households was statistically significant when compared with non-sending households (t-statistic = -2.77, p-value < 0.01).

[76] (t-statistic = -2.33, p-value < 0.05).

[77] The higher proportion of migrants in transfer sending households compared to households who did not send a transfer was statistically significant (t-statistic = -11.24, p-value < 0.001).

[78] The higher average number of household members over the age of 15 years in transfer-sending households than non-sending households was statistically significant (t-statistic = -4.12, p-value < 0.001).

higher human capital indicators with a greater number of members completing primary, secondary and tertiary studies[79].

5.4 Impact of Transfers on Consumption and Poverty

A preliminary descriptive analysis of the impact of transfers on household poverty is presented in tables 5.13 and 5.14. The sample was categorised according to observed per capita consumption deciles. The literature contained conflicting views on the best measure of per capita consumption to use. The per capita consumption aggregate was calculated with no adjustment for equivalence scales. Equivalent scales recognise that all resources are not distributed evenly among all household members, with children and the elderly consuming less than the productive workforce of a household. Cultural gender bias and individual family dynamics can also influence resource distribution within a household (Deaton, 1997). The decision not to adjust for equivalence scales was based on the known poverty figures in Timor-Leste being calculated using aggregate per capita consumption estimates. In this calculation it is assumed that household resources are distributed equally among all members. As such, it is essential to recognise the limitations in the data presented in this section.

Consumption data presented here is the observed consumption data from households, transfers being treated as exogenous to household income. Conclusions cannot be drawn on the relationship between transfers and poverty from findings presented in this section, findings that are an indication of relationships that 'might' occur. Those findings were further tested using econometric techniques and reported in the following chapter.

5.4.1 Transfers and Poverty

Table 5.13 shows the most recent national poverty figures[80] available for Timor-Leste from the Living Standards Survey in 2007 (World Bank & National Statistics Directorate, 2008). The basic needs poverty line was estimated at US$0.88 per

[79] The larger proportion of household members over the age of 15 years that had completed primary, secondary and tertiary education in transfer-sending households when compared to non-sending households were all statistically significant (t-statistic = -2.03 p-value < 0.05, t-statistic = -2.19 p-value < 0.05, t-statistic = -5.1 p-value < 0.001, respectively).

[80] For details on how these values were calculated refer to: World Bank, & NSD. (2008).

person per day. This figure represented 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, indicating extreme poverty.

Table 5.13: Timor-Leste poverty estimates

	Absolute Poverty Line (US$)	Headcount index (Incidence)	Poverty gap index (Depth)	Squared poverty gap index (Severity)
National (2001)	0.52	36.3	10.5%	4.2%
National (2007)	0.88	49.9	13.6%	5.1%
Prediction (2009)	-	41.0	-	-

Source: TLSLS 2007. (World Bank & National Statistics Directorate, 2008, p. 4).

The estimates from Table 5.13 show that poverty incidence, depth and severity had worsened between 2001 and 2007. The introduction of government cash transfers at the end of 2008 has been credited with lowering poverty rates. Recent reports[81] suggest that most districts have seen a decline in the incidence of poverty since 2008, however there remains insufficient data to estimate a definitive national poverty estimate. The poverty figures based on national survey expenditure data were not available in 2012 when the present results were being compiled. However, the human development report for Timor-Leste released in 2011 reports that anecdotal data suggests poverty is reducing. In addition, the World Bank extrapolated poverty figures from the Demographic and Health Survey conducted in 2009 using a survey-to-survey imputation method, predicting a poverty headcount of 41.0 per cent (World Bank, 2009).

The 2010 National Census Report uses US$1.00 per person per day when calculating the cost of basic needs (DNE, 2011a). The UNDP Human Development Report 2011 placed the basic needs poverty line at US$1.25 per person per day (UNDP, 2011b). Poverty estimates from survey data[82] for this research are based on the national census basic needs estimate of US$1.00 per person per day (DNE, 2011a). The decision to use this figure was based on the premise that the census data was being collected concurrently with the survey data for this project, therefore an

[81] See (DNE, 2010; ILO et al., 2011; UNDP, 2011c; World Bank, 2007a)

[82] Refer to Appendix Eight for details on the calculation of poverty estimates.

estimate of the cost of daily needs used in the census would be relevant also to our survey.

The poverty figures represented in Table 5.14 are reflective only of what was occurring in the three districts of study and can in no way be extrapolated to Timor-Leste as a nation. The purpose of calculating poverty indices is to look at the potential impact transfers could be having on the incidence, depth and severity of poverty in recipient households in the study districts.

Table 5.14: Poverty analysis for transfer-receiving and non-receiving households using observed household consumption[a].

Poverty Indices	All Households	Households Receiving no transfer	Households Receiving Transfer (including pension)	Per cent Change (No transfer vs. Transfer including pension)
	(1)	(2)	(3)	(4)
Poverty Headcount	38.7%	38.3%	39.1%	+2.05%
Poverty gap	13.3%	13.3%	13.2%	-0.75%
Squared Poverty gap	6.7%	6.6%	6.4%	-3.03%
Mean per capita household consumption (including transfers)[b]	644.94 (39.08)	682.38 (72.13)	606.33 (27.78)	-11.15
TOTALS	654	332	322	

a. Column (1) measures the situation for all households; Column (2) measures the situation for households who reported receiving no transfers; Column (3) measures the situation for all households receiving a transfer, inclusive of the government pension; Column (4) measures the difference between households not receiving transfers and those receiving a transfer.
b. Standard deviations are in parenthesis.

Results indicate that transfers do not seem to have a positive impact on reducing poverty headcount with a higher poverty headcount experienced by households receiving transfers. This could be due to a larger number of poorer households receiving transfers. However, in examination of the other two poverty indices a positive impact on both the depth and severity of poverty is noted. The poverty gap index, measuring the depth of poverty, implies that the average household's per capita consumption falls short of the poverty line by 13.3 per cent. Households that receive a transfer close this gap by 0.8 per cent. A greater impact is evident when looking at the severity of poverty, measured by the squared poverty gap, transfers decrease a household's severity of poverty by 3 per cent.

These results support research findings from other low-income nations that show that transfers may not have an obvious impact on poverty headcount but can have a positive impact on decreasing the depth and severity of poverty[83]. However, caution should be exercised when drawing conclusions on the relationship between consumption and transfers using descriptive statistics, such as those presented in the tables above because the analysis treats transfers as exogenous additions to household income, failing to take into consideration the indirect effects of transfers on household consumption. Issues of endogeneity are addressed in Chapter Six by way of econometric analysis.

Table 5.15 breaks household consumption down further into quintile groups. The lower two quintile groups represent the poorest households living below the basic needs poverty line of US$1.00 per person per day. Over 40 per cent of households surveyed in Baucau and Ermera reported consumption below the poverty line, whereas in Viqueque the figure was slightly lower with nearly 37 per cent of households reporting consumption.

Table 5.15: Household average annual per capita consumption by quintile group[a]

Rank[b]	Annual Per Capita Household Consumption and Proportion of Households in Each Quintile Group by District[a]			
	Total Pooled sample (n=654)	Baucau (n=217)	Ermera (n=221)	Viqueque (n=216)
Lowest 20%	$173.89	$158.86 (22.2%)	$193.68 (18.4%)	$175.84 (18.4%)
Second 20%	$314.78	$307.22 (19.2%)	$319.34 (25.7%)	$316.31 (18.4%)
Third 20%	$468.15	$475.58 (16.2%)	$464.46 (22.9%)	$465.76 (14.9%)
Fourth 20%	$674.50	$669.53 (19.2%)	$682.20 (22.9%)	$670.76 (21.1%)
Top 20%	$1600.68	$1528.85 (23.2%)	$1534.71 (10.1%)	$1704.71 (27.2%)
All	$644.94	$617.64 (100.0%)	$591.27 (100.0%)	$727.28 (100.0%)

a. All currency is in US$.
b. Households ranked into quintile groups on the basis of annual per capita household consumption. The proportion of households in each quintile is presented in parenthesis.

Table 5.16 examines the distribution of migrant households and transfer-receiving households by quintile group, ranking per capita household expenditure.

[83] Adams (2004) reported a decrease of poverty headcount in Guatemala of 0.6 per cent and a decrease of the squared poverty gap of 21.1 per cent when internal transfers are included in household expenditure.

Table 5.16: Distribution of migrant households and transfer-receiving households by quintile group, ranked by observed per capita household expenditure, including transfers.

		For Transfer-receiving Households (n= 322)			
Rank[b]	Households with at least 1 migrant n=294	RRHH[a] (including Pension)	RRHH (excluding Pension)	Transfer as a per cent of total HH consumption (inc. Pension)	Transfer as a per cent of total HH consumption (exc. Pension)
	(1)	(2)	(3)	(4)	(5)
Lowest 20%	18.6%	19.6%	19.0%	38.6%	15.4%
Second 20%	20.0%	21.1%	21.4%	22.8%	9.8%
Third 20%	20.6%	18.0%	16.3%	22.1%	14.4%
Fourth 20%	18.9%	21.1%	21.9%	16.3%	8.1%
Top 20%	21.9%	20.2%	21.4%	13.4%	9.5%

a. RRHH refers to Transfer-receiving Household.
b. NB: Households are ranked into decile groups based on per capita HH consumption (including transfers). Column (1) shows the per cent of households in each consumption decile with at least 1 migrant. Columns (2) and (3) shows the per cent of households in each decile that are transfer-receiving households. Columns (4) and (5) show transfers as a per cent of total per capita household expenditure for transfer-receiving households in each consumption decile.

Interestingly, households from all groups reported sending migrants, with little variation between quintiles, suggesting that economic standing may not have a strong influence on the migration decision. Households receiving transfers were spread fairly evenly across the consumption deciles wether pensions are included or excluded. The impact of pensions can be seen when examining transfer-receiving households separately and observing transfers as a per cent of total household consumption.

Transfers without pensions constitute over 25 per cent of consumption among the poorest households (lowest two quintiles), increasing to over 60 per cent when government pensions are included in transfer totals, providing some indication that transfers (in particular government pensions) can allow the poorest households to increase consumption which may then lead to improvements in household welfare.

5.4.2 Migration, Transfers and Budget Shares

Budget shares for expenditure categories were estimated to gain insight into how the receipt of transfers affected the expenditure patterns of households. Table 5.17 presents the budget shares for households on selected expenditure categories[84].

[84] For a detailed breakdown of expenditure categories refer to Chapter 4, Table 4.1.

Table 5.17: Average budget shares on expenditure by transfer and migration status

Expenditure Category	All Households (n=654)	Households Receiving no transfer (n = 332)	Households Receiving Transfer (including Pension) (n=322)	Per cent Change (No transfer vs Transfer including Pension)	Non-Migrant Households (n=360)	Households with at least 1 migrant (n=294)	Per cent Change (No Migrant vs. at least 1 migrant)
Food	68.2	67.4	69.1	+2.5	70.2	65.8	-6.3**
Non-Food	18.2	19.5	16.8	-13.8*	17.2	19.3	+12.2
Housing	2.3	1.8	2.9	+61.1	2.5	2.2	-12.0
Utilities	4.8	5.3	4.3	-18.9	4.5	5.1	+13.3
Durables	1.5	1.5	1.4	-6.7	1.6	1.3	-18.8
Education	3.5	3.2	3.7	+15.6	2.5	4.6	84.0***
Health	1.6	1.3	1.9	46.2*	1.5	1.7	13.3

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

On average all groups of households spent over 65 per cent of their budgets on one consumption item, that being food and less than 5% on education.

Although differences in budget shares are noted between transfer-receiving and non-receiving households, the only differences of significance were on non-food expenditure (clothing, transport, fuel, cultural events, entertainment, sending cash or in-kind transfers to others) and health. Housing was separated from Non-Food expenditure to be included in its own category. This was based on both qualitative data reporting the spending of transfers on housing improvements and also on findings from literature which report the increased expenditure on housing among transfer-receiving households (R. H. Adams & Cuecuecha, 2010b; Quisumbing & McNiven, 2010). Households receiving transfers reported a reduction in expenditure on non-food items of nearly 14 per cent and an increase in expenditure on health by over 45 per cent.

Comparison of migrant and non-migrant households found the presence of at least one migrant in a household increased budget shares to education by over 84 per cent. Predictably migrant households also experience a significant decrease in food expenditure. The higher budget share to education among migrant households is not unexpected given the previous findings relating to characteristics of migrants and migrant households, where education featured strongly as the primary motive for

migration. The higher budget shares to education and health illustrate that both migration and transfers can raise the level of human capital in Timor-Leste.

As with the poverty analysis, the budget shares for expenditure are based on observed consumption figures, providing a guide to possible relationships rather than establishing cause and effect. Chapter Six uses counterfactual techniques and econometric analysis to address issues of endogeneity and thus produce more reliable estimates.

5.5 Conclusion

This chapter has presented the descriptive analysis, addressing each of the research objectives. The results presented are the foundation for the multivariate and econometric analysis provided in the following chapter. The poverty analysis and budget shares for expenditure noted here are based on observed consumption figures, suggesting possible relationships rather than establishing cause and effect. Chapter Six uses counterfactual techniques and econometric analysis to address issues of endogeneity and thus produce more reliable estimates. Chapter Six will test the research hypothesis and answer research objectives five and six with statistically significant findings.

The team with a village chief in Baucau district, updating the household list in preparation for sample selection

Chapter Six: Estimating the Impact of Transfers on Household Consumption and Human Capital.

6.0 Introduction

This chapter examines the effect of transfers on seven consumption categories using household expenditure data. For this purpose, the counterfactual methodology previously discussed in Chapter Three is applied to calculate what household consumption would have been in the event the household did not receive a transfer.

The chapter is presented in two sections. Section 6.1 provides multivariate analysis of factors influencing household participation in migration and the receipt of transfers. Section 6.2 uses econometric techniques to determine the impact of internal transfer transfers on household consumption.

6.1 Multivariate Analysis

To analyse factors significantly influencing household participation in migration and receipt of transfers, logistic regression was applied. Logistic regression relies on the maximum likelihood estimation to predict the probability of an event. The model makes use of independent variables (or predictor variables) to describe the relationship between these variables and a binary response variable (or dependent variable) (Acock, 2010; Baum, 2006). The two dependent variables in this study were 'Migration' and 'Transfers'. Independent variables were selected for inclusion in the analysis either because prior empirical research found them to be significant to migration and transfer flows or the descriptive analysis identified them as significant in the context of Timor-Leste.

Household characteristics have been shown to be important determinants in the decision to migrate and or send transfers (Zhu & Luo, 2006). The household demographic variables are household size, gender and age of the household head,

number of dependents (children under 15 years), and number of household members over the age of 65 years. The literature suggests that household size can affect a household's likelihood to participate in migration and receive private transfers. Larger households may be more likely to send a migrant, being better able to cope with the loss of farm labour the migrant may have provided, and also are more likely to benefit from the reduction in household consumption that the loss of a household member brings. The effect of this variable on migration and transfers is expected therefore to be positive.

The literature recognizes that migration can be related to a household's life-cycle factors (D. Massey, Goldring, & Durand, 1994). In context of the employment environment in Timor-Leste the association between dependents under-5 years and migration was expected to be negative. Empirical studies have highlighted contradictory findings. Snyder and Chern (2009) documented that households in rural China with young children were more likely to seek employment locally and less likely to migrate, contrary to Zhao (1999) who reported that in rural China dependents acted as an important source of farm labour, freeing up senior household members to migrate in search of wage employment. Descriptive analysis and qualitative findings demonstrated that education was the main reason for migration; the number of dependents between 5-15 years in the household, were therefore expected to have a positive influence on migration but not transfers. Given the proportion of households receiving the government pension, it was anticipated that households with members over the age of 65 years would have a positive association with receipt of transfers.

Prior research has shown that human capital variables are likely to affect migration and private transfers. Households with higher education have been shown to participate more in migration and have greater employment and income-earning possibilities (Taylor & Martin, 2001; Todaro, 1976). Following findings from descriptive analysis, it was expected that education variables would show a positive association with migration. Household education variables included; 15years and over with primary education, 15years and over with pre-secondary education, 15years and over with secondary education, 15years and over with university education, 15years and over with technical college education. Household

employment variables included; household members' employed and household member participating in seasonal or contract work. Both employment variables were expected to show a positive association with migration and transfers.

Household economic variables included a measure of per capita consumption, which was dichotomised to distinguish those households living below the poverty line (per capita consumption less than US$365 per year=0) and those living above the poverty line (per capita consumption more than US$365 per person per year=1). Household consumption could have either a positive or negative impact on migration. Where households with more resources can often send a migrant, it can also work in reverse, where poorer households send a migrant as a risk diversification and mitigation strategy in an attempt to improve the livelihood of the household (de Haan et al., 2000). Household consumption was not expected to influence the receipt of transfers with descriptive analysis showing migrant transfers were fairly uncommon and the nature of the government pension payment, which was not means tested.

The presence of savings, institutional loans and other loans were also included in order to determine whether the presence of savings or loans had a positive association with participation in migration or receipt of transfers. Empirical research has shown that incomes and living standards of internal migrant households are similar to non-migrant households (Deaton, 1997). Given the widespread poverty in Timor-Leste and low prevalence of private transfers it was not expected that household savings or loans would have a positive impact on transfer receipts. However, it was expected that the presence of household loans would have a positive impact on participation in migration, due to the fact that households may have to draw on the resources of extended family members in order to fund the initial migration costs.

Household asset variables included house, cultivable land, livestock, motorcycle, television, satellite dish, mobile telephone, radio and other. It was expected that households with access to a higher level of assets would be more likely

to have a migrant. This in keeping with the descriptive analysis, which showed more than 25 per cent of migrant households, reported selling assets to fund migration[85].

Table 6.1 reports the results of the logistic regression analysis for households participating in migration and for households receiving a transfer. With the exception of two household demographic variables and one human capital variable all the coefficients have the expected signs for migration and transfers. The significance of these variables in the propensity for a household to participate in migration or receive a transfer is discussed in the following sections.

6.1.1 Participation in Migration

The demographic characteristics of households were in general poor predictors of participation in migration, the one exception being, the presence of children between the ages of 5 and 15 years, households with children in this age group were 2 times ($p < 0.05$) more likely to have a migrant. Given the limited opportunity for employment in Timor-Leste it was expected this could act as a deterrent for households with dependents from participating in labour migration. A possible explanation for this positive association could be explained by the starting age for secondary school in Timor-Leste being 12 years of age. Access to secondary education is largely centralised with secondary schools found in the larger centres of each district (UNDP, 2011c). The remoteness of many villages and lack of accessibility associated with poor roads and heavy rains meant that the only way a young person could attend secondary school was by moving to one of these larger centres and staying with friends or family.

[85] Refer to Chapter Five.

Table 6.1: Logistic regression estimates of the propensity to participate in migration and receive a transfer

Variable[a]	Household has at least 1 migrant			Household receives a transfer		
	Coefficient	Standard error	Odds Ratio	Coefficient	Standard error	Odds Ratio
Household Demographics						
Household Size	-0.052	0.052	0.950	0.001	0.065	1.001
Gender HHH (1=Female)	0.067	0.385	1.092	0.388	0.489	1.474
HHH is between 25-54 years (1=yes)	-0.502	0.259	1.901	-0.290	0.335	0.749
Children under 5 years (1=yes)	0.339	0.245	1.480	0.526	0.316	1.691
Children 5-15 years (1=yes)	0.615*	0.280	1.828	-0.104	0.370	0.901
HH members over 65 years (1=yes)	0.231	0.290	1.236	1.248**	0.422	3.482
HH has at least 1 Migrant (1=Yes)	-	-	-	-0.491***	0.137	2.034
Human Capital						
HH members 15 years or over years with Primary level education (1=yes)	0.301	0.275	1.369	-0.407	0.356	0.666
HH members 15 years or over with pre-secondary education (1=yes)	-0.040	0.302	0.951	-0.720	0.426	0.487
HH members 15 years or over with Secondary education (1=yes)	0.808***	0.240	2.230	0.590*	0.294	1.804
HH members 15 years or over with Tertiary education (1=yes)	0.786*	0.378	2.235	-1.23*	0.54	0.291
HH members 15 years or over with Technical college education (1=yes)	-0.404	1.160	0.642	2.044	1.505	7.719
Employment						
HH members employed (1=yes)	0.344	0.244	1.417	0.620*	0.307	1.858
HH members who participate in Seasonal or contract employment (1=yes)	0.470*	0.236	1.630	0.996***	0.296	2.707
Household economics						
HH Consumption (1 = above poverty line)	-0.625**	0.240	0.540	0.146	0.304	1.157
Transfer Received (1=yes)	0.084	0.306	1.080	-	-	-
Public Transfer Received (1=yes)	0.118	0.352	1.091	-	-	-
Private Transfer Received (1=yes)	3.50***	0.605	32.755	-	-	-
Transfer Sent (1=yes)	2.36***	0.225	10.372	0.047	0.306	1.048
Household has savings (1=yes)	0.154	0.218	1.167	0.686**	0.225	1.985
Household has loans with a Financial institution (1=yes)	0.410	0.229	1.506	-0.090	0.314	0.914
Household has loans with Family/friends/employer (1=yes)	0.160	0.229	1.173	0.282	0.231	1.326
Household Assets[b]						
Cultivable land (1=yes)	0.894**	0.343	2.61	-	-	-
Mobile phone (1=yes)	0.392*	0.182	2.15	-	-	-
Other[c] (1=yes)	-2.39**	1.049	-2.76	-	-	-
Number of Observations			654			654
LR chi2 (32)			301.95			198.30
Prob>chi2			0.0000			0.0000
Pseudo R2			0.3367			0.2194

a. HHH refers to Household Head and HH refers to Household. * Significance at the 0.05 level. ** Significance at the 0.01 level. *** Significance at the 0.001 level.
b. No household assets were found to be significant when regressed for transfers. Assets regressed and not proven to be statistically significant were: house, livestock, car, motorcycle, television, satellite, radio and jewellery,
c. The classification of 'other' refers to assets other than those listed.

Households with members over the age of 15years with secondary ($p < 0.001$) and tertiary education ($p < 0.05$) were twice as likely to send a migrant. These results support descriptive finding of education being the most common reason given for leaving the household of origin. Most tertiary education centers are currently located in the capital Dili. Although there were plans for decentralized campuses offering specific courses this had yet to be realized and with the many challenges Timor-Leste faced with infrastructure, access, human and material resources, the commencement of decentralized tertiary institutions was unlikely to be eminent (UNTL, 2011).

As expected household with a member participating in seasonal or contract work were 2 times ($p < 0.05$), more likely to have a migrant; conversely no significant difference was found in the employment variable per se. A possible reflection on the current context of high 'vulnerable employment' across districts, where lack of job security and permanence led to high unemployment and a pattern of short-term contract employment. (ILO et al., 2011)

Household economic variables revealed that households living below the poverty line of $1.00/person/day were more likely ($p < 0.01$) to have a migrant. Despite less consumption migrant households were 10 times ($p < 0.001$) more likely to send a transfer to others. Households with cultivable land were 3 times more likely ($p < 0.01$) to send a migrant. The increased likelihood of land ownership may indicate that migrant households had more resources available to them to cover the initial costs of sending a household member out.

Households owning a mobile telephone were twice as likely ($p < 0.01$) to have a migrant. With poor telecommunications in Timor-Leste, mobile telephones were the only available means of ready communication between a migrant and the household of origin.

Unexpectedly, there was no significant difference in savings or loans between households who sent a migrant and those who do not. Discussions with key informants and focus groups identified a propensity for extended household members to assist with migration costs with no expectations of being repaid. The assistance

was viewed as benefiting the whole extended family long term and therefore was not viewed as a loan that required repayment but as a gift. Surprisingly this extended to the sending of migrants overseas, which costs involved thousands of dollars. Family members were reported to have sold livestock to fund a migrant moving overseas, although this was also not considered to be a loan. Rather it was universally accepted that the migrant would help the family once they had completed their education or secured employment.

6.1.2 Receipt of Transfers

The last 3 columns of table 6 give the regression results for households receiving a transfer. The only household demographic variable that was significant for receipt of transfers was the presence of a household member over the age of 65years, which increased the household's likelihood of receiving a transfer by 3 times ($p < 0.01$), an observation explained by the government solidarity pension. This result would be expected to be higher if the age classifications in the survey had been defined including a 60-year age bracket. Unfortunately the demographic age classifications in the survey were grouped 55-65 years and 65+ years[86].

Regression results show that households with at least one migrant were twice as likely not to receive a transfer ($p < 0.01$). One possible explanation is that households participating in migration are most likely 'younger' households sending children for education and therefore are less likely to receive the government pension, which is awarded to those over the age of 60 years. Alternatively, if the primary motivation for migration is education then migrants are unlikely to participate in well-renumerated employment, therefore will not remit back to their household of origin.

Of the education variables, the presence of members over the age of 15 years with secondary education increased the households likelihood of receiving transfer by 2 times ($p < 0.05$), whereas the presence of a member with tertiary education actually decreased the likelihood of a household receiving transfer by 0.3 times ($p < 0.05$). This result although found to be statistically significant, should be viewed with

[86] The age classification was corrected in the final questionnaire submitted to the National Statistics Department.

caution due to the small sample size of households with a member having tertiary education (n = 74).

Both of the employment variables were found to be significant determinants of a household receiving a transfer. The presence of an employed household member or a seasonal/contract worker increased the odds of receiving a transfer by 2 times ($p < 0.05$) and 3 times ($p < 0.001$), respectively. Household economic variables were found to be insignificant with the exception of household savings. Households with savings were twice as likely ($p < 0.01$) to receive a transfer.

6.2 Impact of Internal Transfers on Consumption

This section investigates the impact of internal transfers on household consumption. As discussed in Chapter Three the fungibility of transfers is often assumed where the marginal propensity to consume out of all income regardless of source is assumed equal (Friedman, 1957).

The present research recognises that household consumption patterns may differ had the household not received a transfer. Measurement requires an estimate of what the household's consumption patterns would have been in the absence of receiving a transfer. The marginal budget share is defined as how much additional income consumers allocate to respective goods (Mankiw, 2008). Counterfactual methodology is adopted to estimate household marginal budget shares that would have occurred in a hypothetical without-transfers scenario; these estimations are then compared with the marginal budget shares observed in the actual situation with transfers. In the analysis internal transfers are classified into two groups, private and public transfers, where public transfers constitute government pensions and private transfers consist of 'other' internal transfers.

In analysing the impact of transfers on consumption, household *expenditure* is used in preference to household income based on evidence that expenditure data is more effective in determining ‘impact’ of transfers on households (R. H. Adams, 2004; R. H. Adams et al., 2008a; R. H. Adams et al., 2008b). In low-income countries, where self-employment in agriculture is the main source of income, this

may be affected by natural shocks (weather events) and is also prone to under-reporting bias (Deaton, 1997; World Bank, 2005a). Expenditure data is easier to define and measure and consumption figures are closer to a logarithmic normal distribution than is income distribution (Battistin, Blundell, & Lewbel, 2007). In addition, the poverty indicators used in the analysis of this research are based on expenditure rather than income data. (World Bank & National Statistics Directorate, 2008)

In Section 6.3 of this thesis econometric techniques were used to calculate the marginal expenditure patterns in the three study districts for households receiving public and private transfers and to compare them to households who did not receive transfers. It is necessary to acknowledge that estimates were based on survey data from three districts only and cannot be extrapolated to draw conclusions about the nation as a whole.

6.3 Econometric Methods

The econometric challenges facing analysis of migration and transfer impact studies previously discussed in Chapter Three will now be addressed. In order to test the impact of migration and transfers on household consumption it is important to recognise the endogeneity of the migration decision. The decision to migrate is rarely made in isolation but is affected by observable and unobservable factors that may also help to explain household income/expenditure patterns. If migration is used as the explanatory variable in a regression, the coefficient on migration may be prone to the bias[87].

In an attempt to address the issue of endogeneity in this research the Heckman two-step procedure was employed (R. H. Adams, 2006; Deaton, 1997), utilising instrumental variable analysis (Angrist & Krueger, 2001; Staiger & Stock, 1997) which has been shown in previous migration and transfer research to produce the lowest bias in estimates, providing strong instruments have been used (McKenzie

[87] These biases were described in detail in Chapter Three and include reverse causality bias, selection bias, omitted variable bias and simultaneity.

& Sasin, 2007). In their analysis of the impact of migration and private transfers on asset holdings, consumption expenditures and credit constraints on households in origin communities from Bukindon, Philippines, Quisumbing and McNiven (2010) compared the results of both ordinary least squares (OLS) analysis and instrumental variable (IV). They found OLS analysis underestimated the impact of migration on housing and consumer durables, while also underestimating the impact of private transfers on asset holdings.

The econometric analysis is based on the method used by (R. H. Adams & Cuecuecha, 2010b) in their analysis of how the receipt of internal and international private transfers affected the marginal spending behaviour of households in Guatemala.

6.3.1 The Two-Stage Heckman Model

The two-stage Heckman model is based on two equations:

a) A choice equation, which predicts the receipt of transfers.
b) An expenditure equation, which determines household expenditure conditional on receipt of transfers.

Both equations signify the receipt of transfers in each sample group: households not receiving a transfer, households receiving a public transfer and households receiving a private transfer and are summarised as:

$$y_r^* = z_r y_r + \eta_r (1)$$
$$y_r = x_r \beta_r + \sigma_r \mu_r (2)$$

where r represents the sample group, z_r and x_r are matrices of the explanatory variable in group r; y_r and β_r are group-specific coefficients, where it is assumed that μ_r and η_r are independent of all of the components of x and z. The first equation is estimated across all observations in the data set and represents the household choice decision to receive transfers. (R. H. Adams et al., 2008b)

The second equation applies specifically to the households in group-r (separate equations apply to each distinct group) to estimate the household expenditure as a function of relevant explanatory variables. The dependent variable is household consumption and is both observable and continuous. Because of the possibility of selectivity bias, the two equations must be considered together. Heckman selectivity terms or 'lamba' derived from multinomial logit estimation are included in the second equation which then allows the second equation to be estimated by OLS to give consistent coefficient estimates (R. H. Adams et al., 2008b).

In order to implement a two-stage procedure, it is necessary to identify variables that are distinct for the receipt of transfers in the first stage equation and for the determination of household consumption in the second stage equation. A common econometric problem in the analysis of transfer studies is the difficulty that arises in selecting truly exogenous variables to the receipt of transfers.

6.3.1.1 Private Transfers

Instruments used successfully in previous migration and remittance research were identified and reviewed in relevance to the context of Timor-Leste and availability of data. It is argued that larger historical migration networks provide more opportunities for migration and employment for present-day migrants and therefore past migration networks have been used as instruments (Woodruff & Zenteno, 2007). Two variables related to migration networks in 2004 were constructed and tested as suitable instruments. They were the average in-migration and average out-migration for each district as reported in the 2004 census (DNE, 2004).

Distance variables have also been found to be strong instruments. R. H. Adams and Cuecuecha (2010b), in a study on remittances and household expenditure in Guatemala, used the distance to railroad lines in 1930 as an instrumental variable justifying its use as a good instrument as it is related to migration costs in the past and therefore the development of social networks. Similarly, McKenzie and Rapoport (2006) and Woodruff and Zenteno (2007) used the distance to railways built in the early 20th century to identify past migration networks. Possible distance

variables were identified for potential use as instrumental variables prior to data collection. In identifying reasons why one household may participate in migration and another seemingly 'identical' household may choose not to, an additional short community survey was developed and administered by each research team leader to the *xefe de aldeia* at the time of the selection of the research sample from the household lists.

Data were collected on the distance to the nearest transport road, nearest market place, closest urban centre, nearest health care centre, nearest hospital and the distance to the nearest primary and secondary schools. It is recognised that variables related to distance may also indirectly affect the socioeconomic status of households; for example transport corridors are often built in the most convenient locations and therefore economic activity may be more well established in these areas. It was therefore necessary to test the strength of those variables and whether they are correlated with other variables that may affect the interpretation of results.

Unfortunately none of the selected instruments proved strong individually, failing to show significance in the first stage. The use of weak instruments can lead to more significant bias than would otherwise be expected from OLS regression (Angrist & Krueger, 2001; Staiger & Stock, 1997). However in grouping the variables the likelihood ratio test showed that the null hypothesis can be rejected at the 10 per cent level[88]. If the bias produced by the use of instrumental variables is less than the threshold of 10 per cent relative to the bias of OLS, then the instruments are said to be strong (Stock & Yogo, 2005). Table 6.2 provides summary data on the selected instrumental variables.

[88] LRchi2(24) = 33.85, Prob>chi2 = 0.0873.

Table 6.2: Means and standard deviations for instrumental variables

Variable	Mean
Average 2004 in-migration by District	0.38 (0.01)
Average 2004 out-migration by District	0.79 (0.01)
Asset mobile phone (dummy variable)	0.52 (0.02)
Nearest transport road (in walking minutes)	31.62 (1.72)
Nearest market (in walking minutes)	74.43 (2.12)
Nearest urban center (in walking minutes)	109.29 (3.23)
Nearest primary school (in walking minutes)	36.97 (1.61)
Nearest secondary school (in walking minutes)	92.09 (2.51)

Standard deviations are in parenthesis.

Table 6.3 provides a summary of the variables included in the first-stage choice equation. The rationale for including these variables is consistent with migration and private transfer literature with further explanation provided previously in Section 6.1.

Table 6.3: Summary data on non-transfer and transfer-receiving households

Variable	No Transfer Received	Pension Received	Other Transfer Received	t-test (no transfer vs. Pension)	t-test (no transfer vs Migrant Transfer)
Household Characteristics					
Household Head is between 25-54 years (1=yes)	0.75 (0.02)	0.34 (0.04)	0.40 (0.07)	9.72***	5.52***
Household Head is over 55 years old (1=yes)	0.22 (0.02)	0.64 (0.04)	0.58 (0.07)	-10.03***	-5.78***
Household has children under 5 years (1=yes)	0.57 (0.03)	0.46 (0.04)	0.42 (0.07)	2.23*	2.04*
Household has children between 5-14 years (1=yes)	0.78 (0.02)	0.59 (0.04)	0.67 (0.06)	4.42***	1.87
Per Capita household consumption in US$	682.38 (72.13)	615.02 (40.91)	666.07 (60.72)	0.63	0.09
Human Capital					
HH members 15yrs and over with primary level education (1=yes)	0.21 (0.02)	0.15 (0.03)	0.18 (0.05)	1.75	0.61
HH members 15yrs and over with pre-secondary education (1=yes)	0.17 (0.02)	0.12 (0.03)	0.16 (0.05)	1.57	0.20
HH members 15yrs and over with secondary education (1=yes)	0.28 (0.02)	0.32 (0.04)	0.40 (0.07)	-1.02	-1.94*
HH members 15yrs and over with higher education (1=yes)	0.12 (0.02)	0.12 (0.03)	0.16 (0.05)	0.07	-0.72
Dummy Area (1=rural, 0=urban)	0.91 (0.02)	0.93 (0.02)	0.95 (0.03)	-0.80	-0.88

Standard deviations are in parenthesis.
* Significance at the 0.05 level. ** Significance at the 0.01 level. *** Significance at the 0.001 level.

Based on these variables the first stage choice function of the probability a household was the recipient of a public or private transfer is:

Prob (y = receive transfer) = *f*, Household Characteristics (dummy variables for whether the household head is between 25 and 54 years of age or over 55 years of age, a dummy variable for whether there are children under 5 years of age or between 5 and 15 years of age, log of per capita household consumption, Human Capital (dummy variables for whether there are members of the household over 15 years of age with primary, pre-secondary, secondary or higher education), dummy of Area whether rural or urban, Regional dummy variables and Instrumental variables.

Table 6.4 illustrates the results from the first-stage analysis.

Table 6.4: Multinomial logit model using Heckman model

	Received Pension		Received Other Transfer	
Variable	Coefficient	Standard error	Coefficient	Standard error
Household Characteristics				
Household Head is between 25-54yrs (1=yes)	0.071	4.923	-0.033	2.676
Household Head is over 55 years old (1=yes)	2.026	4.924	0.811	2.726
Household has children under 5yrs (1=yes)	0.262	0.274	0.285*	0.162
Household has children between 5-14yrs (1=yes)	-0.562**	0.277	-0.020	0.306
Per Capita household consumption in US$	-0.076	0.158	-0.058	0.171
Human Capital				
HH members 15yrs&over with primary level education (1=yes)	-0.673***	0.286	-0.539***	0.187
HH members 15yrs&over with pre-secondary education (1=yes)	-0.255	0.331	-0.331	0.327
HH members 15yrs&over with secondary education (1=yes)	0.333*	0.185	0.638**	0.291
HH members 15yrs&over with higher education (1=yes)	-0.504	0.815	-0.375	0.329
Dummy Area	0.390	0.596	0.951*	0.538
logPerCapCsmp	-0.076	0.158	-0.058	0.171
Region2	0.010	0.970	0.781	1.041
Region3	0.764	0.714	0.145	0.882
logIVavInMig	0.092	0.667	0.373	0.610
logIVOutMig	0.020	1.909	-0.126	2.021
IVAssetMPhone	0.188	0.285	0.162	0.258
logNearestTpRoad	0.071	0.191	-0.142	0.285
logNearestMarket	0.168	0.284	0.052	0.273
logNearestUrbanCentre	0.146	0.315	0.213	0.271
logNearestPrimSch	-0.196	0.242	-0.086	0.275
logNearestSecSch	0.099	0.207	0.010	0.281
o._cons	-2.721	5.223	-2.323	3.013

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

The second-stage consumption share equation is estimated using:

$$C_{si} / EXP + y_{si}(log\ EXP) + \mu_{si1} Age25to54 / EXP + \theta_{si1} Age25to54 + \mu_{si2} Age55 / EXP + \theta_{si2} Age55 + \mu_{si3} U5 / EXP + \theta_{si3} U5 + \mu_{si4} F5to15 / EXP + \theta_{si4} F5to15 + \mu_{si5} Prim / EXP + \theta_{si5} Prim + \mu_{si6} PreSec / EXP + \theta_6 PreSec + \mu_{si7} Sec / EXP + \theta_{si7} Sec + \mu_{si8} HigherEd / EXP + \theta_{si8} HigherEd + \delta_{si0} AR + \sum_{j=1}^{2} \delta_{sij} REG_j + \sum_{hnem} \pi_{mh} \lambda_h + \nu_{si}$$

Where

- C_{si} is the annual per capita household expenditure on one of seven expenditure categories (durables, food, utilities, health, education, non-food and housing) by household that chose category *s*,
- EXP is total annual household expenditure,
- Age 25-54 is equal to one if the household head is between 25-54 years of age,
- Age 55 is equal to one if the household head is over 55 years of age,
- U5 is one if the household has at least one child under the age of 5 years,
- F5to15 is one if the household has a child between the ages of 5-15 years old, Prim is one if the household has a member over 15 years of age with primary education,
- PreSec is one if the household has a member over the age of 15 years with pre-secondary education,
- Sec is one if the household has a member over the age of 15 years with secondary education,
- HigherEd is one if the household has a member with post-secondary tertiary or technical education,
- AR is the dummy variable for rural/urban location and
- REG (region) represents two regional dummy variables.

Note that the instrumental variables included in the first stage equation are excluded in the second stage equation, however a potential economic problem is raised due to the instruments providing independent information at sub-district level. This information is shared by all households living in the sub-district and therefore

generates a correlation of observations within a sub-district. The issue is resolved by clustering standard errors by sub-district (R. H. Adams & Cuecuecha, 2010b). In addition the estimation error introduced when using a two-stage model can inflate standard errors. The bootstrap procedure was employed to prevent inflation of standard errors and these are the standard errors reported in the second stage tables.

Tables 6.5-6.7 show the results from the second stage equation for the seven expenditure categories for each group of households: households with no transfer (Table 6.5), households receiving the government pension (Table 6.6) and households receiving another form of internal transfer (Table 6.7).

Conducting interviews in a remote village in Viqueque.

Interviewing the head of the household in a remote village in Ermera.

Table 6.5: Household expenditure estimates for households not receiving a transfer

Variable	Durables		Food		Utilities		Health		Education		Non-Food		Housing	
	coef	**se**	**coef**	**Se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**
reciExpTotal	35.883	64.472	-261.396	497.609	63.979	328.553	-0.859	45.129	68.362	56.361	-50.696	342.725	144.728	144.626
logExpTotal	-0.006	0.006	-0.195***	0.029	0.063**	0.032	0.005	0.003	0.004	0.008	0.033	0.040	0.095**	0.047
HHH25to54overExpTotal	-30.676	64.763	153.848	497.344	-52.189	326.637	-4.110	40.804	-38.494	48.183	26.746	319.312	-55.125	110.659
HHH25to54	0.035	0.026	-0.178	0.236	0.019	0.127	0.011	0.017	0.035*	0.020	0.029	0.179	0.049	0.044
HHHover55overExpTotal	-42.693	66.098	140.553	486.486	-17.321	324.381	-3.856	44.607	-56.344	50.034	53.062	327.719	-73.401	121.027
HHHover55	0.024	0.047	-0.080	0.212	-0.058	0.134	0.015	0.025	0.021	0.040	0.037	0.168	0.042	0.061
Under5yrsoverExpTotal	-30.813**	15.664	66.252	42.233	-2.773	22.167	-4.936	10.020	44.835**	19.742	12.871	52.510	4.234	26.928
Under5yrs	0.010	0.008	-0.034	0.036	0.009	0.020	-0.002	0.008	-0.001	0.015	0.026	0.035	-0.009	0.014
from5to14ysover ExpTotal	9.206	13.767	-95.609**	47.091	49.238	34.792	8.740	10.415	2.619	19.487	-6.203	68.295	32.010	33.169
from5to14ys	-0.006	0.015	0.051	0.043	0.048**	0.024	-0.008	0.008	0.023	0.017	0.010	0.051	-0.022	0.025
Over15PrimaryoverExpTotal	-22.077	16.841	107.474	65.751	43.219	43.253	1.158	9.689	8.759	28.994	-128.873	80.640	-9.661	39.141
Over15Primary	0.026**	0.011	-0.122***	0.038	-0.001	0.025	0.003	0.007	0.013	0.013	0.076**	0.038	0.006	0.022
Over15PreSecoverExpTotal	41.184***	14.332	-47.727	85.099	-33.294	39.524	-9.600	14.295	-4.791	31.382	44.250	73.534	9.978	41.976
Over15PreSec	-0.012	0.008	-0.004	0.057	0.031	0.030	0.011	0.011	0.012	0.016	-0.028	0.045	-0.011	0.029
Over15SecoverExpTotal	-56.549**	26.823	-29.673	94.375	57.757	46.408	12.388	18.296	7.199	18.286	-30.100	93.116	38.979	39.978
Over15Sec	0.023	0.016	0.003	0.049	-0.028	0.026	-0.005	0.013	-0.021*	0.011	0.049	0.050	-0.021	0.017
Over15higherEdoverExpTotal	8.496	43.442	-15.375	143.443	40.115	76.851	39.911	36.280	54.087	74.775	-137.044	113.930	9.809	116.393
Over15higherEd	0.007	0.016	-0.094	0.081	-0.024	0.034	-0.019	0.014	0.008	0.029	0.121**	0.061	0.002	0.059
DummyArea	-0.020	0.013	0.052	0.040	-0.038**	0.019	-0.000	0.006	-0.005	0.019	0.049	0.040	-0.038	0.028
Region2	-0.023	0.017	0.057	0.049	-0.014	0.021	-0.008*	0.004	-0.029*	0.015	0.017	0.025	-0.000	0.022
Region3	-0.018	0.011	0.103**	0.045	-0.032	0.020	0.006	0.005	-0.027	0.018	-0.038	0.031	0.007	0.020
lambdaNPPension_logIVs	0.014	0.073	0.139	0.206	-0.038	0.082	0.005	0.021	-0.010	0.069	-0.094	0.115	-0.016	0.077
lambdaNPOther_logIVs	-0.046	0.070	-0.044	0.205	-0.003	0.077	-0.010	0.019	-0.019	0.063	0.122	0.101	0.000	0.076
_cons	0.023	0.064	2.452***	0.337	-0.439	0.303	-0.035	0.039	-0.063	0.085	-0.143	0.475	-0.796*	0.413

***p<0.01, **p<0.05, *p<0.1

Table 6.6: Household expenditure estimates for households receiving a public transfer

Variable	Durables		Food		Utilities		Health		Education		Non-Food		Housing	
	coef	**se**	**coef**	**Se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**
reciExpTotal	16.385	79.619	-573.289*	319.390	-27.249	65.318	187.153*	101.381	182.382	129.316	111.798	319.444	102.821	121.229
logExpTotal	0.007	0.008	-0.131***	0.040	0.014	0.028	0.014	0.012	0.014	0.041	0.077*	0.045	0.005	0.020
HHH25to54overExpTotal	7.462	72.175	544.569*	321.813	30.184	52.225	-144.896*	85.461	-210.754**	94.560	-143.259	296.581	-83.307	95.542
HHH25to54	-0.027	0.044	-0.356*	0.186	-0.002	0.025	0.058	0.048	0.100**	0.046	0.192	0.153	0.035	0.049
HHHover55overExpTotal	-16.066	77.079	526.886*	318.893	34.992	59.260	-165.126*	88.734	-190.157*	106.693	-77.445	308.068	-113.083	122.053
HHHover55	-0.020	0.047	-0.220	0.242	-0.084	0.055	0.015	0.084	0.069	0.072	0.129	0.190	0.111	0.079
Under5yrsoverExpTotal	-29.839**	14.230	215.234***	69.227	-14.997	28.879	-9.430	31.476	33.185	54.575	-222.746***	51.328	28.593	31.380
Under5yrs	0.011	0.008	-0.028	0.055	-0.009	0.022	-0.001	0.016	-0.035	0.028	0.101***	0.039	-0.040**	0.020
from5to14ysover ExpTotal	0.829	9.553	-73.026	119.599	-14.556	25.788	-25.158**	11.740	56.746	39.937	96.731	100.073	-41.566	28.893
from5to14ys	-0.001	0.007	-0.056	0.084	0.040***	0.015	0.029	0.020	-0.019	0.022	-0.010	0.076	0.016	0.021
Over15PrimaryoverExpTotal	11.500	29.376	-275.684	228.054	134.426**	67.585	5.139	139.781	-84.382	127.048	211.445**	95.053	-2.443	32.774
Over15Primary	-0.007	0.015	0.086	0.106	-0.046*	0.027	0.035	0.039	0.059	0.080	-0.090*	0.048	-0.038*	0.023
Over15PreSecoverExpTotal	-46.209	32.818	-196.441	351.969	70.410	83.010	126.132	107.161	233.938*	135.460	-139.309	363.263	-48.521	95.786
Over15PreSec	0.017	0.014	0.101	0.138	-0.028	0.031	-0.037	0.031	-0.106**	0.053	0.057	0.152	-0.005	0.042
Over15SecoverExpTotal	5.747	21.271	-26.875	156.516	4.018	49.968	31.427	45.759	5.085	86.175	-13.839	66.181	-5.564	48.893
Over15Sec	-0.009	0.014	-0.026	0.081	-0.003	0.025	-0.006	0.019	-0.005	0.041	0.026	0.046	0.023	0.025
Over15higherEdoverExpTotal	165.114**	75.188	95.244	351.381	-69.925	47.723	112.657	91.905	-424.980**	203.895	101.197	197.092	20.693	102.373
Over15higherEd	-0.051**	0.022	-0.194	0.144	0.033*	0.020	-0.021	0.030	0.249***	0.090	0.009	0.076	-0.025	0.030
DummyArea	0.002	0.012	-0.068	0.050	-0.002	0.010	0.011	0.011	0.038**	0.019	-0.012	0.057	0.033	0.021
Region2	-0.014	0.013	0.027	0.056	0.014	0.012	-0.017	0.015	-0.008	0.021	0.014	0.041	-0.017	0.014
Region3	-0.005	0.009	0.011	0.052	-0.010	0.011	-0.031	0.025	0.008	0.026	-0.018	0.048	0.045**	0.018
lambdaNPPension_logIVs	0.043	0.040	-0.041	0.168	0.029	0.047	0.066	0.052	0.063	0.076	-0.139	0.143	-0.021	0.047
lambdaNPOther_logIVs	-0.057	0.049	-0.017	0.165	0.020	0.035	-0.030	0.042	-0.049	0.070	0.155	0.161	-0.023	0.046
_cons	-0.036	0.100	2.037***	0.496	0.050	0.191	-0.076	0.206	-0.155	0.386	-0.624	0.522	-0.197	0.206

***p<0.01, **p<0.05, *p<0.1

Table 6.7: Household expenditure estimates for households receiving other internal transfers

Variable	Durables		Food		Utilities		Health		Education		Non-Food		Housing	
	coef	**se**	**coef**	**Se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**
reciExpTotal	-49.149	59.491	1,234.181**	481.810	-39.199	76.770	-141.429**	60.344	-227.928*	128.530	309.789	207.894	-1,086.266	1,201.240
logExpTotal	0.017	0.013	-0.181***	0.051	0.014	0.014	0.001	0.014	-0.035	0.024	0.116**	0.054	0.068*	0.039
HHH25to54overExpTotal	21.186	61.654	-1,455.730***	373.101	100.158	95.155	182.014***	61.724	154.065	103.360	-210.238**	95.279	1,208.546	1,213.148
HHH25to54	0.015	0.024	0.498***	0.161	-0.043	0.045	-0.017	0.018	-0.048	0.048	0.181***	0.059	-0.584	0.376
HHHover55overExpTotal	2.292	59.197	-1,592.313***	411.004	134.202	95.577	180.324***	62.945	187.276*	110.410	-147.638	141.062	1,235.855	1,209.448
HHHover55	0.015	0.031	0.467**	0.189	-0.014	0.062	-0.023	0.027	-0.020	0.054	0.160*	0.090	-0.586	0.388
Under5yrsoverExpTotal	-9.974	9.319	67.870	88.480	29.017	19.776	-17.729	12.128	-41.926	27.174	-48.383	48.326	21.126	49.173
Under5yrs	0.009	0.008	-0.022	0.072	-0.013	0.011	-0.001	0.006	0.005	0.022	0.040	0.043	-0.017	0.034
from5to14ysover ExpTotal	53.971	43.024	310.909**	154.340	-92.984	58.190	-47.201	34.807	-6.672	43.075	-121.615	77.801	-96.409	75.658
from5to14ys	-0.018	0.019	-0.127	0.081	0.015	0.022	0.009	0.011	0.000	0.031	0.089**	0.041	0.032	0.040
Over15PrimaryoverExpTotal	105.916*	56.187	-90.774	235.944	16.948	72.163	-20.942	24.539	104.342	93.573	-46.235	83.768	-69.254	190.400
Over15Primary	-0.034	0.026	0.065	0.094	-0.043**	0.022	0.010	0.011	-0.031	0.039	0.009	0.046	0.024	0.066
Over15PreSecoverExpTotal	23.796	75.539	-488.213***	179.351	-40.224	45.825	223.289***	77.648	-71.124	77.885	369.056***	88.608	-16.579	277.970
Over15PreSec	0.004	0.035	0.087	0.075	0.021	0.025	-0.066***	0.023	0.032	0.036	-0.091*	0.048	0.013	0.095
Over15SecoverExpTotal	17.416	33.582	24.854	96.218	-64.496	59.816	-69.217	45.072	-38.262	57.061	139.813*	82.597	-10.108	129.002
Over15Sec	0.002	0.011	0.024	0.056	0.018	0.021	0.005	0.011	0.006	0.013	-0.057*	0.033	0.002	0.074
Over15higherEdoverExpTotal	121.601***	31.992	-504.086**	225.041	167.291***	53.525	136.597**	55.577	-8.588	67.888	98.407	192.263	-11.222	207.201
Over15higherEd	-0.037**	0.017	0.077	0.105	-0.043**	0.021	-0.018	0.016	0.024	0.028	-0.015	0.077	0.012	0.074
DummyArea	-0.030*	0.017	0.006	0.067	0.014	0.012	-0.011	0.012	0.038*	0.020	-0.013	0.029	-0.004	0.068
Region2	-0.019**	0.009	0.065	0.074	0.020**	0.008	-0.029***	0.011	-0.035	0.026	-0.012	0.030	0.010	0.040
Region3	-0.021	0.015	-0.008	0.085	0.031	0.024	-0.023**	0.009	-0.036	0.029	0.008	0.039	0.050	0.043
lambdaNPPension_logIVs	0.012	0.038	0.210	0.181	-0.090	0.069	0.021	0.032	-0.059	0.063	-0.029	0.083	-0.065	0.089
lambdaNPOther_logIVs	-0.001	0.042	-0.263	0.204	0.108	0.075	-0.005	0.034	0.072	0.072	0.024	0.085	0.063	0.108
_cons	-0.061	0.107	1.656***	0.600	-0.052	0.143	0.088	0.156	0.387	0.245	-1.014*	0.542	-0.005	0.546

***p<0.01, **p<0.05, *p<0.1

6.4 Transfers and Consumption

To estimate the effect of public transfers on marginal expenditure of households the method used by R. H. Adams and Cuecuecha (2010b) using multiple treatments was adopted. In estimating the counterfactual consumption of households receiving public and private transfers, self-selection issues should be considered. The Heckman model addressed issues of self-selection and therefore, the coefficients from Tables 6.5-6.7 were used to calculate the estimated marginal budget shares for the seven expenditure items for each group of households. Counterfactual marginal budget shares for without-other transfer and without-government pension are calculated for use in the estimation of the average treatment effects on the treated (ATT).

The first counterfactual: $\boldsymbol{E}\ (\mathbf{MBS_3} \mid \boldsymbol{s} = \mathbf{1})$ represents the expenditure that households that received an 'other' transfer would have had if they had not received the transfer. It is calculated by using the equation for expenditure shares for households that receive no transfers on households that receive an 'other' transfer.

Similarly the second counterfactual: $\boldsymbol{E}\ (\mathbf{MBS_3} \mid \boldsymbol{s} = \mathbf{2})$ represents the expenditure that households that received a government pension would have had if they had not received the government pension.

Pairwise comparison of treatments identify ATT (Esteves & Khoudour-CastÈras, 2009). The ATT is the average gain from treatment for those who actually were treated. For each population unit there are two possible outcomes: Y (0), the outcome without treatment and Y (1), the outcome with treatment. The binary treatment indicator is W, with W = 1 signifying treatment:

$$T_{att} = E(Y(1) - Y(0)|W = 1)$$

R. H. Adams and Cuecuecha (2010b, p. 1629) modified the equation in their analysis of the impact of internal and international transfers on the marginal spending behaviour of households in Guatemala to:

$$ATT_{ml} = E(MBS_m \mid s = m) - E(MBS_l \mid s = m)$$

where MBS_m, is the marginal budget share of households that received a public transfer, and $MBS_{l,}$ is the counterfactual marginal budget share of the same households if they had not received public transfers. In other words, the counterfactual marginal budget share estimates what the expenditure behaviour of the households would have been without the receipt of public transfers. $E(MBS_l \mid s = m)$ denotes the population average of the marginal budget shares. The ATT reveals the change in the average expenditure behaviour generated by public transfers.

Using the coefficients from Tables 6.5 to 6.7 the estimated marginal budget shares for expenditure categories[89] were calculated to identify at the margin how the receipt of transfers affects the expenditure patterns of households. Table 6.8 reports the marginal budget shares while also comparing them to the counterfactual of what would have happened if these households had not received a transfer.

When compared with what they would have spent without receipt of the government pension, households receiving government solidarity pension payments spend 7 per cent more at the margin on education than they would have spent without the receipt of the pension (although this increase was not shown to be statistically significant). Significant findings were the 40 per cent increase in marginal expenditure on food and 275 per cent increase in marginal expenditure on health. These results indicate that with the increase in income as a result of the government solidarity pension payments, households spend more on human capital expenditure items; education, health and food. The findings are consistent with the results from the qualitative data analysis reporting that food, education and health were among the top four uses of transfers[90].

[89] For a detailed breakdown of expenditure categories refer to Table 4.1, note that housing expenditure was removed from the non-food expenditure category and treated as a variable on its own.

[90] Further analysis was conducted removing the migration instrumental variables. The is presented in Appendix ten

Table 6.8: Marginal budget shares on expenditure and average treatment effects (ATT) by transfer category

	No Transfer	Pension Received				Other Internal Transfer Received			
Expenditure Category	Estimated Marginal Budget Share	Estimated Marginal Budget Share	Counterfactual Marginal Budget Share	Average Treatment Effect (ATT)	Per cent difference[b] (received public transfer vs did not receive)	Estimated Marginal Budget Share	Counterfactual Marginal Budget Share	Average Treatment Effect (ATT)	Per cent difference[b] (received other transfer vs did not receive)
Durables	0.045	0.013	-0.012	0.025***(0.002)[a]	-208%	0.076	0.050	0.027***(0.004)	54%
Food	0.452	0.650	0.464	0.186***(0.017)	40%	0.514	0.609	-0.095***(0.014)	-16%
Utilities	0.126	0.059	0.089	-0.030***(0.007)	-34%	0.164	0.072	-0.056***(0.006)	-78%
Health	0.018	0.030	0.008	0.022***(0.005)	275%	0.059	0.021	0.039***(0.002)	186%
Education	0.050	0.015	0.015	0.001 (0.008)	7%	0.024	0.028	-0.004 (0.006)	-14%
Non Food	0.214	0.248	0.349	-0.101***(0.015)	-29%	0.260	0.142	0.118***(0.022)	83%
Housing	0.085	-0.016	0.078	-0.094***(0.009)	-121%	0.054	0.068	-0.015(0.009)	-22%

a. Figures in parenthesis are standard errors clustered by sub-district.
b. Per cent difference calculated by dividing ATT by the value of counterfactual Marginal Budget Share.
c. Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level.

Unexpected was the large 121 per cent decrease in expenditure on housing, than what the household would have spent on this item without the receipt of the government pension payments. This is contrary to findings from the descriptive analysis, which showed an increase in expenditure on housing by households receiving a pension when compared with households not receiving a transfer.

6.5 Conclusion

In Timor-Leste household characteristics affected the likelihood of a household participating in migration or receiving an internal transfer. Migrant households were better resourced than non-migrant households, with higher human capital outcomes. In keeping with findings from Chapter Five that public transfers were far more common than private transfers, transfer-receiving households were more likely to have a household member over the age of 65 years and therefore a recipient of the pension. Both migrant and transfer-receiving households were more likely to have a household member engaged in seasonal or contractual employment.

The results in this chapter indicate that the spending behaviour of transfer-receiving and non-receiving households differs. The impact of public transfers on household budget was examined further using specialised econometric techniques. Households receiving the government solidarity pension payments were shown to spend more on investment (education) and less on consumption goods.

Conducting a household interview in a village in Baucau district.

Chapter Seven: Discussion, Significance, Recommendations and Conclusions

7.0 Introduction

This thesis posits that internal migration and transfers have the potential to play an important role in improving the human capital of households while influencing household consumption patterns. Increasingly, empirical research on international migration and transfers in developing countries shows a positive relationship between the receipt of transfers, poverty and investment in human capital (R. H. Adams, 2006; R. H. Adams & Cuecuecha, 2010a; E. K. Campbell, 2009; de Brauw & Harigaya, 2007; Du et al., 2005).

While a few of the above studies also examined the impact of internal transfers on recipient households, this area remains to a large extent unexplored. Where it has occurred it has been conducted primarily in nations experiencing an economic boom driving rural-urban migration such as in China, Vietnam and India. The exploration of internal migration and transfer patterns in a post-conflict nation is a largely under-researched area.

This thesis explores the flow of internal migration and transfers in Timor-Leste by examining the impact of internal transfers on household economy and human capital in this post-conflict transitional nation. Two research hypotheses were empirically tested in the study. The first hypothesis focussed on the impact of internal migration and transfers on the human capital of recipient households, as measured by migration patterns and marginal budget shares to education. The second hypothesis postulated that internal transfers could offer benefits to households in Timor-Leste by increasing household consumption and thereby having a positive effect on household welfare, as measured by marginal budget shares to various consumption items.

This concluding chapter briefly responds to each of the research objectives, stating the more interesting general observations, and highlighting the major findings. Synthesising discussion from the previous six chapters and drawing on research findings the chapter provides a justification for an expansion of migration theory beyond a purely economic model of understanding migration and transfer flows to encompass a livelihoods approach. It also discusses the important contributions and limitations of this research. Based on the findings the study proposes recommendations and discusses policy implications.

7.1 Overview of the Research Methods

This research was primarily exploratory in nature, employing mixed methods using a detailed household survey and semi-structured interviews to obtain a deeper understanding of internal migration and transfer flows and impacts in three districts of Timor-Leste. The discussion of research design and method presented in Chapter Four highlights the cultural and technical challenges associated with collecting data in this setting. The household survey was developed specifically as a migration and transfer modular survey that could be used in its entirety or in part in larger nationwide household surveys[91] to monitor migration and transfer patterns over time.

The combination of research methods enhanced and validated the research findings. The semi-structured interviews provided in-depth knowledge of the lived experience of migration, offering insights into the process of migration and the decision to migrate, together with the perceived impact of migration and internal transfers on household livelihood.

Descriptive analysis presented in Chapter Five supports the view that internal migration and transfers in Timor-Leste had a positive impact on both human capital and household consumption. The literature reviewed in Chapter Three highlights the methodological complexities involved in examining the impact of transfers on a

[91] It is the practice in some countries (Moldova, Vietnam) to add migration and transfer modules to HIES (household income/expenditure surveys) and LSS (national living standards surveys) in order to monitor migration and transfer trends over time. These modules provide an important source of panel data for analysis when used in repeated surveys.

household when potential self-selection and other endogeneity issues were taken into account. The lack of a standardised approach to migration and transfer analysis has resulted in varied econometric and statistical methods across studies. Taking into consideration the cross-sectional data collection methodology and lack of panel data it was argued that the construction of counterfactual estimates and use of instrumental variables would produce the most robust results. This methodology was employed (Chapter Six) to investigate the impact of transfers on household consumption.

7.2 The Livelihoods Framework and Understanding Migration Patterns in Timor-Leste

The results of this research support de Haas's (2007, 2010) recommendation to integrate the *new economics of labour migration* theory (NELM) with the *livelihood approaches strategy.* While migration theory has continued to develop over the years it continues to have a strong micro-economic focus, ignoring the complexities of migration yet focusing on the immediate economic risk and income insurance model (Lucas & Stark, 1985). There is little scope for exploring the relationship between migration, transfers and human capital in current migration theory.

Although NELM recognises migration as a household decision rather than the decision of a single individual (Taylor, 1999) drawing some conceptual parallels with the livelihood approaches model in as much as it recognises migration as an important livelihood strategy, its central emphasis is that migration is a means to overcome economic market constraints. However, the structure of economy and society is context-specific and temporal. Therefore household decisions on whether or not to send a migrant, and the relationship with the context within which these decisions are made, are more than purely economic.

The livelihoods framework considers household livelihood as not exclusively an economic position but incorporates social, natural, physical, human and economic capital into its conceptual framework (Scoones, 1998). In the context of Timor-Leste, a young nation state recovering from a protracted period of conflict it is seen that migration is a livelihood strategy that is better understood under the livelihood

framework. The section that follows will respond to each of the research objectives within the conceptual structure of the livelihoods framework.

7.3 Response to Research Objectives

In order to test the research hypotheses, six research objectives were formulated. This section will respond to each of the research objectives.

7.3.1 Objective One: To document the internal migration patterns in Timor-Leste and the characteristics of migrant and non-migrant households.

7.3.1.1 Internal Migration Patterns

This study found that *internal* migration patterns in Timor-Leste were unique, predominantly driven by the desire for further education. The findings are inconsistent with the literature on *internal* migration patterns in other Southeast Asian nations, which have been shown to be largely driven by employment. Rising inequality in rural India has led to increased internal migration for short-term and seasonal employment (Deshingkar & Farrington, 2006). In Bangladesh and Cambodia the desire for employment as a means of livelihood diversification has fuelled rural-urban migration with individuals migrating to seek work in the garment industry, as rickshaw pullers or domestic workers (Deshingkar, 2008; Maltoni, 2007). Quisumbing and McNiven (2005) show that although much attention has been given to international labour migration from the Philippines, internal migration has continued as households seek ways to smooth consumption and spread economic risk.

The unique situation in Timor-Leste where over 60 per cent of *internal* migration is for education rather than employment can be attributed to its distinctive context discussed in depth in Chapter Two. Nations that have experienced protracted conflict differ in important ways from other low-income contexts. Opportunities for education and skill development are disrupted by conflict, which in a country such as Timor-Leste that experienced 25 years of resistance against Indonesian occupation, can result in one or more generations with limited or no education and a severe lack of

skills. Faced with an environment of limited employment opportunities, poor physical infrastructure and lack of access to basic services, households were making livelihood choices to secure a more promising future for their children. Qualitative findings provided further insight into the prioritisation of education in migration decisions. Households placed great emphasis on education recognising its importance not only in securing a better livelihood for the household but also in building the future of their nation.

However, qualitative data also revealed the barriers to realising these goals locally. The lack of access to quality education for children and scarcity of vocational skills training for those of employable age was emphasised in all three districts. The larger centres were seen as having more resources and attracting the most qualified teachers.

Migration to Dili made up more than half of all out-migration to another district. Internal mobility has been shown to be increasing in many developing nations (Deshingkar & Grimm, 2005) with rural-urban migration stimulated by rapid economic growth in urban areas (Guest, 2003). Timor-Leste, however, has limited capacity for labour absorption in urban formal and informal sectors, the economy being driven by offshore oil and gas rather than an expansion in manufacturing that is helping to push internal migration in other Asian nations[92]. With human capital motives dominating migration decisions, a direct result is that the demographic profile of Dili is changing with the influx of so many young people. (UNDP, 2011a)

As discussed in Chapter Two, this has important implications for Timor-Leste in the future, with over half of its population under the age of 15 years and the population predicted to double by 2033 (UNDP, 2011a). Such population growth poses great challenges for the government to improve already-weak service provision, particularly in the areas of education, health and employment.

[92] China, Vietnam and India have all experienced manufacturing booms that have led to rapid rural-urban migration (Deshingkar & Grimm, 2005)

Castillo (2008) suggests that employment-creation is imperative to ensuring lasting peace and security in post-conflict transitional nations placing particular emphasis on employment for the younger populations, which constitutes a large part of the labour force in these nations. At the time of writing this thesis the employment market was weak in Timor-Leste. Results from this research show that short-term contract employment was the most common form of non-agricultural work available to job seekers. The search for employment is further complicated by nepotism, which features strongly in an individual's capacity to secure permanent employment, irrespective of education and skill set. (Molnar, 2005)

7.3.1.2 Characteristics of Migrant Households

This research has shown that internal migration was associated with households with more resources or *financial capital*. The finding supports Massey's cumulative migration theory which states that in the early stages of a nation's migration experience it is the relatively well-resourced households that are more able to meet the risks associated with migration and therefore participate more readily (D. Massey et al., 1994). Massey asserts that as migration networks develop, migration becomes more widespread throughout the income centiles.

Internal migration in the three districts was not bringing immediate economic return to the majority of participating households. On the contrary, households reported drawing on their *financial capital* in order to support household migrants in their pursuit of further education. The family may have to wait until education was complete and employment secure before reaping a return on their investment in migration. Thus, not only are social networks necessary to facilitate migration but the household must also have the resources and means to offer support to the migrant and host household, thereby maintaining strong links between rural and urban households.

7.3.1.3 International Migration

While it was not the focus of this research to examine international migration the survey reported that 7 per cent of households had at least one international migrant, including households in some of the most remote villages surveyed. It was a surprising finding

given the widespread poverty and expense associated with sending a migrant overseas. The majority (60 per cent) of these international migrants were residing in Indonesia undertaking university education with the remainder finding work in Europe or with the government migrant worker program in South Korea.

Small island states, experiencing underdevelopment and limited employment opportunities, frequently have the highest rates of international migration. Often dependent on a single sector or commodity with little scope for economic growth they are prone to exogenous shocks such as changes in trade markets and exchange rate shocks (Bertram, 2004; Briguglio, 1995). Recognising the increased exposure to risk[93] the United Nations recommends that small island nations incorporate international migration issues into their development and poverty reduction strategies[94] in order to meet the challenge of job creation.

Timor-Leste may possibly follow in the pattern of other small island nations in the Asia Pacific and experience an increase in international migration, which has already commenced. This research has provided the government of Timor-Leste[95] with important baseline data on migration and transfer patterns in three districts with high population movements. It is imperative that the government begins to prepare migration and transfer-friendly policies early in the migration process to maximise the developmental benefit of future transfers.

[93] Examples of risks include exogenous shocks, climatic changes, and natural disasters

[94] Resolution 63-7 from the United Nations General Assembly suggests incorporating international migration issues into national development plans and poverty reduction policies. (United Nations, 2007)

[95] A complete report of findings was presented to the government of Timor-Leste. The survey questionnaire and training manual were given to Direcção Nacional de Estatística (the department of National Statistics) in both Tetun and English for future use in collecting data on migration and transfers. These versions included post-data collection revisions.

7.3.2 Objective Two, Three and Four: To record transfer flows in and out of the household, to identify the primary sender/recipient of these transfers, and (Objective Four) to measure the numerical value of public and private internal transfer receipts in Timor-Leste.

It is evident from results presented in Chapter Five that rural-urban linkages played an important role in the survival of urban migrants in Timor-Leste. Rural households reported sending both cash and in-kind transfers in the 12 months preceding the survey. A large proportion of private transfers sent were sent to urban areas with the majority of transfer recipients between 15 and 24 years of age. Qualitative data revealed that households send food, clothes and cash to household migrants who were studying in other cities within Timor-Leste to assist with living and education costs. A similar finding was described by E. K. Campbell (2009) when examining internal migration and transfer flows in Botswana, where a considerable amount of gross transfer was made by the household to migrants, particularly migrants that were in school or searching for employment.

Migrants are often reliant on relatives or friends at the destination for accommodation and support and it is expected that the migrant's household of origin will assist in whatever way they can. The Timor-Leste survey data showed that over half of all households with at least one migrant sent a transfer. This was unexpected given the high poverty rate and largely cashless rural economy.

Rural-urban linkages and resultant reverse transfers have been shown to be a vital livelihood strategy for poor urban households in other developing countries (Frayne, 2007; Owuor, 2007). Frayne (2007) noted that the process of rural-urban migration in Namibia involved strong ties between rural and urban households, vital when migrants faced economic difficulties due to limited employment opportunities and increases in costs of living in the urban environment. The survival of urban migrants was credited in part to the food they received from rural households. Similarly, Owuor (2007) discovered that urban-rural linkages were important for the survival of poor urban migrants in the town of Nakuru, Kenya, where urban migrants relied on food sent from their rural homes.

The results of this research document how the lack of access to the five capitals of the livelihoods framework restricted households from using migration as a livelihood strategy. In the post-conflict context of Timor-Leste, even when households were able to draw on some or all of the capitals to send a migrant, the poor employment market prevented many migrants from securing well-renumerated employment. In addition, those that did manage to find work faced prohibitive increases in living costs at the destination, which limited their capacity to send transfers home. Facing an economic environment consisting of high unemployment and high vulnerable employment households in Timor were choosing to invest in human capital. By adopting a theory of migration that has a strong micro-economic focus, the complexities of the migration process in this young nation would be missed. This thesis offers empirical support to de Haas's (2007, 2010) recommendation for the integration of economic migration theory and sociological migration theory in order to gain a more thorough understanding of migration and transfer flows.

The study also reveals that in this post-conflict setting a lack of secure employment opportunities—combined with poor business policy and limited infrastructure—meant migrant transfers were uncommon and had limited impact. This is contrary to findings presented in the literature (Deshingkar & Grimm, 2005; Deshingkar et al., 2006; Deshingkar, Sharma, Kumar, Akter, & Farrington, 2008; Deshingkar & Start, 2003) that internal transfers reach a large percentage of migrant households. It then follows that post-conflict transitional nations offer a unique context with which to understand internal migration and transfers.

An unexpected finding was the impact of government solidarity pensions, which accounted for 80 per cent of cash transfers received by households. The mean value of transfers received in the 12 months preceding the survey was US$435. In all districts, when the value of government pensions received is removed from transfer totals, transfers are reduced substantially with the mean dropping to US$178. Increasingly, social protection is recognised as an essential basic service for the poor (Samson, Van Niekerk, & MacQuene, 2006). There is a move toward implementing cash transfers in post-conflict nations in preference to in-kind transfers that have dominated relief efforts. (Holmes, 2009)

Government cash transfers have had an important role to play in addressing the upheaval of the 2006 crisis in Timor-Leste. Resettlement packages assisted those displaced by the crisis in their return home. Cash transfers were offered for housing repairs to those damaged during the violent clashes that ensued. In late 2009 a further US$500 was given to each of the affected households for assets lost during the 2006 crisis. Long-standing grievances of disaffected and vulnerable groups were addressed through introduction of government social protection pension payments, in the latter half of 2008. These pensions are provided to veterans who fought in the resistance for independence, those disabled in the fight for independence, widows of resistance fighters and the elderly (UNDP, 2011a). This thesis provides empirical evidence that cash transfers from government pensions (public transfers) were playing a crucial role in improving the livelihoods and welfare of recipient households.

The introduction of cash transfers in conflict-affected countries contributes to poverty reduction while also aiding peace-building efforts by rebuilding state-citizen relationships, providing the state with increased legitimacy when its people feel their needs are being addressed (Holmes, 2009). While it was beyond the scope of this paper to measure these impacts, future studies should examine how government transfers have affected the people of Timor-Leste's perceptions of the government and whether they have had an impact on reducing dissent.

Very little research attention has been paid to studying the impact of social pension payments in post-conflict nations[96]. Research on the impact of such pensions on welfare, poverty and consumption are imperative in order to evaluate whether cash transfers are the way forward in response to humanitarian crises and post-conflict reconstruction. The implications for future relief efforts, should cash transfers be found to be effective, could lead to a much more cost effective and resource efficient approach to the response effort.

[96] See (Ali, Toure, & Kiewied, 2005; Holmes, 2009; Holmes & Jackson, 2007; Holmes & Upadhya, 2009; Mattinen & Ogden, 2006; Samson et al., 2006)

7.3.3 Objective Five: To explore the role of transfers in the household economy in Timor-Leste and the impact they have on household consumption.

Results presented in Chapter Six show that, when accounting for endogeneity, budget shares to education, health and food items were higher for households receiving transfers, specifically public transfers while budget shares to utilities, durables, non-food and housing were significantly lower. When compared with what they would have spent without public transfers, households receiving the government pension spent 7 per cent more at the margin on education, 40 per cent more on food and 275 per cent more on health. These findings are consistent with the results from the qualitative data analysis, which found that food, education and health were among the top four uses of transfers.

A surprising finding was the fall in expenditure on housing with receipt of a transfer. When housing is separated from non-food items, the marginal budget share to this item decreased, contrary to findings in the literature, such as from Osili (2004) who reported an increased expenditure on housing among transfer-receiving households in Nigeria. A possible explanation is the value of the transfer received was combined with the prioritisation of household expenditure. It would be expected that international transfers, being of substantially larger value, would be spent on housing an indication learned in the qualitative analysis of households with an international migrant.

Interestingly, households receiving public transfers spend significantly less on durable goods that include domestic appliances, TV, satellite, radio, computer, DVD, and vehicles than they would have spent without the receipt of the public transfers, indicating that households did not spend their additional income on ‘conspicuous’ consumption. This finding is contrary to that of Chami, Fullenkamp, and Jahjah (2003) who stated in their review of transfer literature that a large proportion of transfer income was spent on status-oriented consumption goods. Cash transfers have been historically credited with being 'wasted' by recipient households on non-productive consumption.

Taylor et al. (1996) cited studies from around the globe (Egypt, Turkey, Yemen, Sub-Saharan Africa, India, Thailand, Philippines, Samoa and the Americas), where the

authors show that transfers were spent on consumption rather than production. Their conclusions resulted in transfers being blamed for weakening local economies, causing inflation and promoting a 'dependency' mentality among recipients (D Massey & Eggers, 1990). However, findings from Timor-Leste indicate that internal transfers received are not spent on 'conspicuous consumption' but are invested in consumption necessary for survival and improved livelihood.

Despite cultural events featuring as one of the top four priorities[97] for transfer expenditure mentioned by households in Timor-Leste, and qualitative data providing insight into the perceived burden of the 'endless' contribution to socio-cultural celebrations (weddings, births, funerals) analysis of survey data revealed that the proportion of households reporting sending a cash transfer for the purposes of a sociocultural celebration was less than 8 per cent. This was surprising and suggests the perceived burden may be much larger than the actual burden although, given the household survey asked about contributions made during the previous 12 months the financial burden of sociocultural contributions may indeed be significant over a household's lifecycle. This is an area that requires further research, particularly as it was identified as a common theme in qualitative analysis.

Further research should examine the social pressures[98] on households who were in receipt of public and private transfer transfers to contribute to socio-cultural celebrations. The analysis of the impact of transfers on household consumption shows that transfers influenced household consumption patterns with increased spending on consumption items directly related to human capital. This research therefore rejects the view that transfers are fungible and are spent like any other source of income.

[97] Daily needs, education, social/cultural celebrations and health were listed as the top four priorities of transfer expenditure among recipient households. This was inclusive of public and private transfers

[98] Molnar (2010) states that during public constitutional hearings in 2001 popular consensus was for the abolition of barlake (bride wealth) due to the heavy economic burden on households. Although such a law did not pass in the constitution, anecdotal evidence and evidence from the focus group discussions and key informant interviews that accompanied this present research found the resentment of the expectation to contribute such large sums to cultural celebrations remains widely felt.

7.3.4 Objective Six: To examine if internal migration and transfers impact on human capital.

Qualitative and quantitative findings from this research support the hypothesis that internal migration and transfers can provide a means for increasing the human capital of households. Households in Timor-Leste prioritised education with many making the decision to send a young person as a migrant to pursue better quality or higher education. In addition, the receipt of public transfers was shown to enhance the budget shares for education, food and health among recipient households.

In the context of Timor-Leste where private transfers were restricted due to the labour market and infrastructure challenges previously discussed, public transfers could have assisted in raising the level of human capital in Timor-Leste. This finding supports earlier studies that cash transfers lead to increased expenditure on education (Davies et al., 2009; Quisumbing & McNiven, 2010). At the time of the present study households in Timor-Leste faced insecure employment and trade markets and were investing in their young people, building the human capital of the household and the nation with the expectation that over time this investment would bring dividends, improving livelihoods.

7.4 Significance of the Study

7.4.1 Expansion of Migration Theory

This research contributes to existing literature by providing evidence for the need of a migration model that encompasses a broader approach to migration and transfers, embracing other factors of development such as human capital indicators. Migration patterns in Timor-Leste can be better explained by the conceptual 'livelihood approaches' model constructed by sociologists and linked to NELM by de Haas (2007). The model suggests that the poor are active in making decisions to improve their livelihoods, employing whatever means they have. This research revealed that despite the challenges the Timorese face with poverty, high unemployment and inaccessible and weak capital markets, people were actively taking action to improve their livelihoods.

The findings of the research advocate for an exploration of the impact of internal migration and transfers outside the bounds of a macro- or micro-economic model.

7.4.2 Significance with Respect to Cash Transfers in Post-conflict Nations

This research offers new insights into the drivers for migration, flow of public and private transfers and the impact of these transfers on household consumption and human capital in a post-conflict/transitional context. Econometric techniques were utilised to examine the impact of public and private transfers on household economy. Public transfers were shown to have a significant positive impact on recipient households.

The findings of this research support the implementation of cash transfers in post-conflict nations, contributing to the limited literature on the impact of social pension payments in a post-conflict nation. As this was not a direct aim or objective of the study but, rather an unexpected finding, the measures associated with impact were restricted[99] to the impact on household consumption items.

7.4.3 Significance with Respect to Migration and Transfer Literature & evidence-based Research

The research contributes to existing literature providing a systematic and in-depth review of internal migration and transfer impact studies. In addition the research provides new knowledge on internal migration patterns and public and private transfer flows in Timor-Leste, adding to the limited knowledge of transfer flows in post-conflict and transitional nations. The issues Timor-Leste faced during reconstruction and continues to face during nation building share many similarities with other post-conflict transitional nations. The analysis of specific features of migration and transfer patterns, flows and impacts in Timor-Leste and resulting conclusions and recommendations could assist other nations facing similar upheaval to implement favourable policies to maximise the flow and benefits of internal transfers.

[99] At the time of writing the World Bank was preparing to undertake a study specifically looking at the perceived and actual impacts of the government pension on households.

7.4.4 Significance with Respect to Research Design

The mixed methods research design enabled in-depth analysis on the migration process and identification of issues surrounding transfers. Few migration and transfer studies have explored these phenomena beyond the data gained from large nationwide surveys, thereby offering statistical facts and figures but failing to provide insight into the personal experiences of migration and transfers. It is hoped that this study will encourage other researchers to adopt a mixed methods approach in understanding patterns of migration and transfer flows.

7.4.5 Significance with Respect to the Development of a Research Tool

During the research process a new survey was designed and trialled with specific focus on migration and transfers. This survey used modules that can easily be transferred to larger nationwide surveys to ascertain data on a specific area of interest. It is intended that the survey design can be used in the future by the government of Timor-Leste. The survey underwent extensive revisions pre data collection and once again post data collection following feedback from the research team. During data analysis it was noted that the age ranges used in the survey were limiting, further household surveys in Timor-Leste should ensure the 60+ year-old age group stands on its own in order to clearly capture recipients of the government pension.

7.5 Limitations

Conducting research within a *post-conflict* nation is complex due to unique challenges associated with physical infrastructure, human capacity and access. Combined with the physical geography of Timor-Leste, unscheduled rains and multiple languages spoken in rural areas, the undertaking of this research was not without difficulties. These limitations were acknowledged early in the research process and measures implemented in order to minimise the impact on data quality. The use of a four-wheel drive vehicle enabled access to remote villages. University students were selected as enumerators and provided with a training manual and a week of training. Daily briefings during the research process provided ongoing training and early identification of any issues. The three research teams were grouped on the basis of languages spoken to ensure that in

each group there was a representative fluent in the rural language of the villages to be visited, in the eventuality that an interviewee did not understand or speak Tetun.

The second limitation concerns qualitative data collection. Saturation was not reached during qualitative data collection. Rather the qualitative data acted to highlight key concepts that may not have been captured by the survey. Qualitative findings from this study demonstrate the research scope and need for more in-depth research into the experience and impact of migration and transfers on both the migrant and the household.

The third limitation was financial. Due to limited funding the study was restricted to three districts of Timor-Leste therefore findings offer an insight into internal migration patterns and the impact of transfers on consumption and human capital in these three districts and generalisation to Timor-Leste as a nation must be used with caution. Nonetheless, these are the first findings on migration and transfers in Timor-Leste and results may provide impetus for a larger nationwide study.

Fourth, the cross-sectional, non-experimental nature of the household survey data and small sample size places limitations on the econometric analysis of some variables. These restrictions are explained in Chapter Six[100]. Notwithstanding these limitations, the sample size was sufficient to detect key associations; this research provides important insight into internal migration patterns and transfer flows in Timor-Leste. However, future research could benefit from examining these associations with a larger sample.

7.6 Recommendations From the Study

From the findings of this research recommendations can be made for the government of Timor-Leste, policy developers and future research.

[100] See also the review of empirical studies in Chapter Three.

7.6.1 Recommendations for the Government of Timor-Leste

7.6.1.1 Delivery of Social Protection

This research showed that public transfers were having a positive impact on households. However, the distribution of the pension poses problems for both those responsible for distributing the money and the recipients. Those who can access formal financial services such as local bank branches were able to receive their pension by direct transfer, on the condition that they were able to provide enough paperwork to open an account. Others had to wait for the annual or six monthly deliveries by vehicle. The government of Timor-Leste must implement a more efficient system of Pension delivery in order to maximise the benefit to recipient households.

7.6.1.2 Money Transfer Systems

The flow of private transfers is also restricted by poor access to formal financial services, transfer fees and other collection costs. Qualitative analysis revealed that one of the main financial service providers in Dili charged a 10 per cent fee on collecting an international transfer with further late fees if the individual did not collect the money within one month. Delivery of private transfers requires an individual to travel to the home of the recipient person/household, which prevents the transfer being received in a timely manner and increases transport costs on delivery. Policy priorities should consider increasing access to formal financial services while also looking at alternate technologies for cash transfer.

Policies need to focus on reducing transaction costs, increasing transparency and dissemination of information beyond major centres to educate the population on what services are available and how they can access these services. These policies, if implemented early in the migration phase, will serve to increase the developmental impact of international transfers which are sure to increase as young Timorese complete their education and seek employment and career opportunities which Timor-Leste at this point in time is unable to offer.

7.6.1.3 Skilled Worker Retention

The prioritisation of education among many households in Timor-Leste will in the long term provide the young nation with a skilled workforce and could contribute to future economic growth. However, the outcome of increasing access to quality education in a small nation like Timor-Leste will pose new policy challenges. With a better-educated workforce will come demand for suitable employment. In the absence of local employment opportunity Timor-Leste may face a future 'brain-drain' as experienced in other small island economies.

Failing to secure work in the local market, educated young people will be attracted to move internationally to pursue their career and economic goals. The government needs to institute measures that provide incentive to attract highly educated Timorese to remain in the country and meet the nation's human resource needs, ensuring continued development, while facilitating the movement of the surplus workforce. Patterns observed in other small nations suggest a likely increase in international transfer flows into Timor-Leste. The impact of the international transfers on development and the economy will largely depend on the policies in place.

The government of Timor-Leste is in a fortunate position of having the opportunity to learn from other small island economies and *post-conflict* transitional nations. The government should begin monitoring trends and institute migrant and transfer-friendly policy early in the migration process.

7.6.1.4 Employment Creation

Decentralisation of quality high school education, tertiary and polytechnic institutes is imperative in mitigating the rate of rural-urban migration. With an annual urban growth rate of 4.7 per cent it is anticipated that by 2025 the urban population will double (Bulatao, 2008). This pattern of youth migration is not isolated to Timor-Leste but is a growing phenomenon in other developing nations. Contrary to the rural-urban migration pattern in Timor-Leste which sees young people moving due to the lack of quality education in rural areas, in other developing nations it is the expansion of educational opportunities in rural areas in the absence of improved employment prospects that is

now helping to increase the proportion of younger migrants as they leave to search for urban employment (Deshingkar & Grimm, 2005; Guest, 2003). Improving the quality of and access to education in rural Timor-Leste may not necessarily guarantee a reduction of rural-urban migration, unless rural labour markets are also strengthened.

7.6.2 Recommendations for International Non-Government Organisations and International Organisations in Timor-Leste

The emphasis the Timorese households in the three districts covered by this study place on educating the next generation can help direct funding and program development in this young nation. In 2012 there were over 60 International Non-Government Organisations (INGOs) working in Timor-Leste, these organisations should examine their priorities and ensure they fit within the needs and wishes of the Timorese people (Charles Darwin University & Australian National Commission for UNESCO, 2012). Programs that help strengthen the goals outlined in the strategic plan for improvement and construction of school buildings, teacher training, development of mother-tongue educational resources, provision of educational scholarships can all be supported by INGOs working in Timor-Leste. While some organisations are supporting such programs this research shows the demand is high and many more are required to meet the immense need.

At the time of research the capacity for the government to role out sufficient training and skill development programs was limited due to the national human capital deficit and cost. INGOs can support the government in its endeavour to decentralise training centres, such programs would have the added benefit of slowing the rapid population growth in Dili.

7.6.3 Recommendations to Policy Makers in Post-conflict Nations

Post-conflict transitional nations offer a unique context with which to study transfers and migration. It is particularly so in the case of protracted conflict, where over an extended period of time, economic decline or stagnation has occurred, often accompanied by the limited or absence of development of human capital, infrastructure and basic services. At a time when newly installed governments are struggling with restoring governance and socio-economic development, households and individuals are

also in a recovery phase, confronted with making choices to secure a livelihood often in the face of widespread poverty and restricted markets. Policy implemented in this early recovery phase can have a lasting impact on the ability of the nation to move forward.

7.6.3.1 Implementing Social Protection in Post-conflict Nations

This research supports the implementation of Social Protection Pensions in *post-conflict* nations. However, it also highlights the necessity for policy makers in *post-conflict* transitional nations that are implementing a government social protection pension system to examine alternative ways within which to deliver the cash to the individual in the face of limited access to formal financial services.

7.6.3.2 Thinking Outside the Theoretical and Economic Model

Policy makers working in the field of migration and transfers need to look beyond a pure economic model of understanding. This research has shown that internal migration and transfers are important for post-conflict societies, also highlighting the impact, which cannot always be measured using economic indicators. Adoption of a more hybrid understanding of migration and transfers involving a multisectoral approach will maximise the impact on households.

7.6.4 Recommendations for Further Research

Various recommendations for further attention in future research have been offered throughout this discussion, however some particular areas seem relevant for immediate research attention to support the strengthening of human capital:

7.6.4.1 The Experiences of Young Migrants

One area for immediate research attention is the issue of whether the young people who are leaving their villages to live with family and friends in pursuit of further education are achieving their educational goals. The migration of youth failing to secure employment and not extending their education has led to a rise in gangs in Dili and other urban centres (UNDP, 2009). Disaffected youth were considered responsible for the escalation of the 2006 crisis. (World Bank, 2007b)

Young migrants are at higher risk and more vulnerable to abuse and exploitation (Bredl, 2011). There is a need for research on the complexities experienced by young migrants in Timor-Leste in order to facilitate the development of efficient and effective social policies to afford some protection to this vulnerable group and to minimise negative impacts.

7.6.4.2 Measuring the Impact of Lost Labour on Households

Migrants are predominantly young adults seeking secondary and tertiary education, representing a significant risk and sacrifice as households let go of a valuable household production labour force in pursuit of future gains. Both Lipton (1980) and Rubenstein (1992) found the departure of young migrants produced a lost-labour effect in households of origin reducing agricultural production in migrant households. Although it was beyond the scope of this study to estimate output loss due to migration, it is important in the context of Timor-Leste where household survival is reliant on subsistence agriculture. Research measuring the lost-labour effect in Timor-Leste would provide the government with valuable information for poverty reduction policy.

7.6.4.3 Public Transfers and Ongoing Peace

Although beyond the scope of this study to determine whether public transfers have influenced the peace process in this young nation with such a tumultuous history, the relative peace that has been present since the government social protection program was first rolled out suggests that the initiative may have had a role to play in diffusing tension and reinforcing state legitimacy.

Future studies should examine how government transfers have affected the people of Timor-Leste's perceptions of the government and whether they have had an impact on reducing dissent.

7.7 Concluding Comment

This study used a mixed methods research design to examine internal migration patterns and transfer flows in three districts of Timor-Leste.

Three significant key findings emerged. First, the primary motivator for internal migration in Timor-Leste was to pursue further education with young people being sent from their villages to larger urban centres for higher and better education. Second, internal transfer flows were bi-directional flowing into and out of households in Timor-Leste. These transfers represented an important component of household income in surveyed households. While nearly 50 per cent of all households surveyed reportedly received an internal transfer, the majority of these transfers were public transfers with households in receipt of the government solidarity pension scheme. Finally, receipt of internal transfer was shown to influence household consumption, specifically increased spending on education, health and food all of which are important in the development of human capital.

Empirical research has not yet examined the role of internal transfers[101] in post-conflict transitional nations. It was on this basis that this research set out to investigate the internal migration patterns and transfer flows within Timor-Leste and to determine whether transfers were significant enough to influence consumption and human capital in recipient households.

This study contributes to the international literature on *internal* migration and transfers while providing new insight into internal migration patterns and transfer flows in a post-conflict transitional nation. The results support the hypothesis that internal transfers can increase household income/consumption and thereby have a positive effect on household welfare. The study has highlighted that the significance of rural-urban linkages in enabling households to invest in human capital should not be underestimated.

[101] A few studies have examined the role of diaspora in specific development projects; for example Leather, Ismail, Ali, Abdi, and Abby (2006) looked specifically at the role of diaspora in supporting health-care reconstruction in Somaliland. However, to the knowledge of the present researcher, there are no studies specifically examining the impact of migration and transfers in a post-conflict transitional nation.

The case of Timor-Leste provides a timely opportunity to analyse the potential developmental role of internal transfers in post-conflict, transitional countries. It is hoped that the study will help guide future research on larger migration and transfer studies in Timor-Leste. As Timor-Leste undergoes the transition from a post-conflict to independent nation, the building of human capacity and the reduction of poverty are two issues imperative to continued peace and stability.

This thesis therefore advances the view that internal transfers can and do provide a valuable contribution to both recipient and sending households. This thesis has also demonstrated the importance of the social protection role of government pensions that has had an impact on many poor and vulnerable households in Timor-Leste. This research has highlighted the need for migration theory to move beyond a purely economic understanding of migration and transfers, to recognising that a household's decision to send a migrant may not be purely for immediate economic gain but for furthering human capital. Development of a theory and policy embracing a lifecycle model of understanding of migration and transfer flows can provide a much more sophisticated theoretical basis for understanding the processes of migration and its impact on households in a transitional nation.

Primary school in Dili

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APPENDICES

Appendix One: Curtin University Ethics Approval

A1.1 This Appendix contains the research ethics approval from the School of Research and Development at Curtin University.

memorandum

To	Dr Jaya Earnest, Centre for International Health
From	A/Professor Stephan Millett, Chair, Human Research Ethics Committee
Subject	Protocol Approval **HR 153/2009**
Date	28 April 2010
Copy	Tambri Housen Centre for International Health Graduate Studies Officer, Faculty of Health Sciences

Curtin
University of Technology

Office of Research and Development

Human Research Ethics Committee

TELEPHONE 9266 2784
FACSIMILE 9266 3793
EMAIL hrec@curtin.edu.au

Thank you for providing the additional information for the project titled "*Rural/ Urban Migration Patterns and the Impact of Internal Remittances on Poverty and Human Capital in Timor-Leste*". The information you have provided has satisfactorily addressed the queries raised by the Committee. Your application is now **approved**.

- You have ethics clearance to undertake the research as stated in your proposal.
- The approval number for your project is **HR 153/2009.** *Please quote this number in any future correspondence.*
- Approval of this project is for a period of twelve months **28-04-2010** to **28-04-2011**. To renew this approval a completed Form B (attached) must be submitted before the expiry date **28-04-2011**.
- If you are a Higher Degree by Research student, data collection must not begin before your Application for Candidacy is approved by your Faculty Graduate Studies Committee.
- The following standard statement **must be** included in the information sheet to participants:

  This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR 153/2009). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au.

Applicants should note the following:

It is the policy of the HREC to conduct random audits on a percentage of approved projects. These audits may be conducted at any time after the project starts. In cases where the HREC considers that there may be a risk of adverse events, or where participants may be especially vulnerable, the HREC may request the chief investigator to provide an outcomes report, including information on follow-up of participants.

The attached **FORM B** should be completed and returned to the Secretary, HREC, C/- Office of Research & Development:
When the project has finished, or

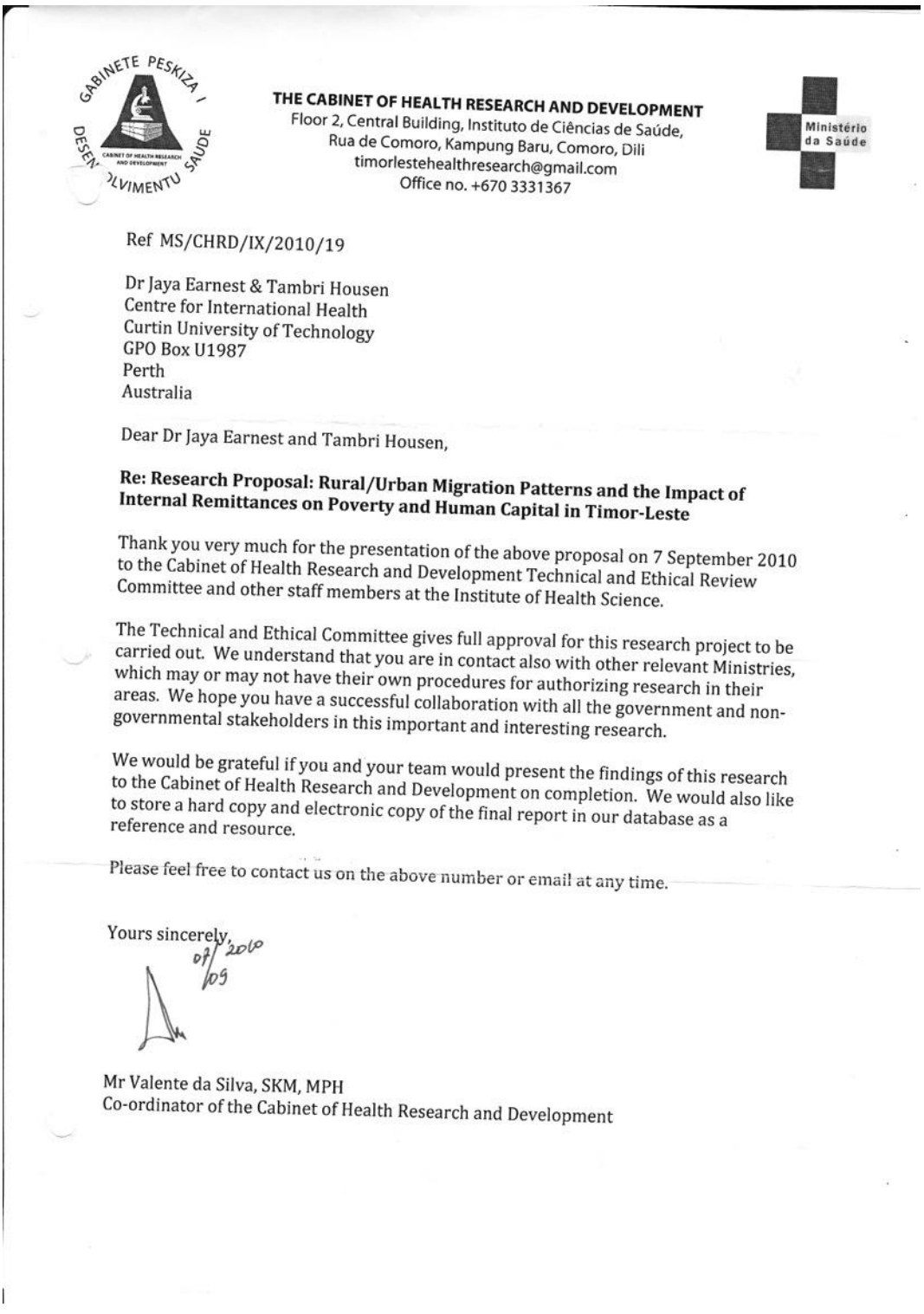
- If at any time during the twelve months changes/amendments occur, or
- If a serious or unexpected adverse event occurs, or
- 14 days prior to the expiry date if renewal is required.
- An application for renewal may be made with a Form B three years running, after which a new application form (Form A), providing comprehensive details, must be submitted.

Regards,

A/Professor Stephan Millett
Chair Human Research Ethics Committee

Appendix Two: Ethics Approval

A2.1 This Appendix contains the research ethics approval from the Cabinet of Health and Research and Development in Timor-Leste.



GABINETE PESKIZA I DESENVOLVIMENTU SAUDE

THE CABINET OF HEALTH RESEARCH AND DEVELOPMENT
Floor 2, Central Building, Instituto de Ciências de Saúde,
Rua de Comoro, Kampung Baru, Comoro, Dili
timorlestehealthresearch@gmail.com
Office no. +670 3331367

Ministério da Saúde

Ref MS/CHRD/IX/2010/19

Dr Jaya Earnest & Tambri Housen
Centre for International Health
Curtin University of Technology
GPO Box U1987
Perth
Australia

Dear Dr Jaya Earnest and Tambri Housen,

Re: Research Proposal: Rural/Urban Migration Patterns and the Impact of Internal Remittances on Poverty and Human Capital in Timor-Leste

Thank you very much for the presentation of the above proposal on 7 September 2010 to the Cabinet of Health Research and Development Technical and Ethical Review Committee and other staff members at the Institute of Health Science.

The Technical and Ethical Committee gives full approval for this research project to be carried out. We understand that you are in contact also with other relevant Ministries, which may or may not have their own procedures for authorizing research in their areas. We hope you have a successful collaboration with all the government and non-governmental stakeholders in this important and interesting research.

We would be grateful if you and your team would present the findings of this research to the Cabinet of Health Research and Development on completion. We would also like to store a hard copy and electronic copy of the final report in our database as a reference and resource.

Please feel free to contact us on the above number or email at any time.

Yours sincerely,

09/09/2010

Mr Valente da Silva, SKM, MPH
Co-ordinator of the Cabinet of Health Research and Development

Appendix Three: Participant Information Sheet

A3.1 This is the participant information sheet read to each respondent prior to asking for consent to commence the survey interview. The English and Tetun version is provided. Where Tetun was not spoken by the respondent a team member translated the form into the dialect spoken.

CENTRE FOR INTERNATIONAL HEALTH
FACULTY OF HEALTH SCIENCES

Curtin
UNIVERSITY OF TECHNOLOGY

You are being invited to take part in a research study. I would like to read the following information to you so that you understand why the research is being done and what it involves. Please ask if there is anything not clear to you or if you would like me to explain anything in more detail. Take time to decide whether or not you wish to take part.

The research is conducted by Tambri Housen of Curtin University in Western Australia with a team of Timorese co-researchers from (name of organization/department).

We want to obtain information on how many people in Timor Leste are migrating for employment purposes. We want to determine where people are migrating from, where they are going and if they are finding work at the destination. We also want to find out if they are managing to send money or goods home to relatives and friends and find out what the money is used for. Our aim is to explore if labor migration is increasing the quality of life for the people at home, if money and goods sent home is helping relieve poverty and assisting in education costs for those remaining.

The purpose of finding out this information is to inform the appropriate organizations and departments of migration and remittance patterns so they can better target programs, supports and interventions to increase the impact of labor migration on poverty reduction and education.

We understand it is important for Timor-Leste as a young nation to grow strong and independent with a good quality of life for all citizens. Information is needed to direct and support programs that will help strengthen the country and it's people.

Your household has been chosen for the study in the following way
We are conducting the study in 3 districts, from those 3 districts 60 Enumeration Areas have been selected for each district. We then chose 15 households from each EU randomly. Every household had an equal chance of being selected and yours was one that was selected for the study.

If you agree to participate in the study we want to take an hour of your time to ask some questions about migration and remittance patterns within your household. All the information you give us will be completely confidential, no-one will see the information except for the research team. We will enter all the information into a computer and only the researcher and data entry person will have access to it. Once all the survey information is collected the data will be analysed to find out the patterns of migration and remittance in the 3 districts in general and what impact this is having on poverty and education.

The information will be written in a report and sent to NGO's, relevant departments and will also be published in international journals. At no point will any of the publications bear any households name or details that will identify them from another household. The information from your household will be mixed up with information from all other participating households (900 in total).

If you agree to participate I need to you sign a consent form to say that you understand what the research is about and are happy to answer our survey questions. You are free to withdraw your consent at any time during the interview if you feel you no longer want to participate in the study.
Do you have any questions?
Do you agree to participate?

Ba Xefe da Família,

Universidade Curtin iha Perth, Austrália Osidental hala'o hela projetu peskiza ida kona-ba oinsá migrasaun afeta membru família sira-nia moris iha suco.

Ami hakarak hetan informasaun kona-ba número ema Timor-oan ne'ebé muda sai husi sira-nia suco hodi buka servisu ka empregu ka hodi kontinua estudu. Ami hakarak hatene ema sira ne'e muda husi ne'ebé, atu muda ba iha ne'ebé no karik sira hetan servisu iha destinasaun ka fatin ne'ebé sira muda ba. Ami mós hakarak buka hatene karik sira haruka osan ka sasan mai uma ba parenti maluk sira no buka hatene osan sira ne'e atu uza ba sadeit. Ami-nia objetivu hodi buka hatene karik movimentu hodi buka servisu no estudu ne'e hasa'e kualidade moris ema-nia iha suco.

Ami kompriende katak importante tebes ba Timor-Leste nudar nasaun foin sa'e hodi sai forte no independente ho kualidade moris ne'ebé diak ba sidadaun tomak. Informasaun sira nune'e importante tebes hodi kondus ho suporta programa sira ne'ebé hodi ajuda hakbit nasaun no nia-povu.

Ami hili tiha ona Ita-Boot nia Uma-kain hodi tuir estudu ne'e hanesan tuir mai ne'e. Ami labele halo entrevista ho uma-kain tomak tan ne'e Ami hili tiha ona Uma-kain 15 husi kada Aldeia ne'ebé hili tiha ona. Kada uma-kain iha biban hodi tuir entrevista.

Informasaun sira ne'ebé uma-kain fó mai ami sei sai konfidensiál; laiha ema ida sei haree informasaun sira ne'e exsetu ekipa peskiza sira. Informasaun husi Aldeia ne'e sei tau hamutuk ho informasaun husi Aldeia sira seluk iha Ita-Boot nia distritu.

Informasaun ne'ebé Ami foti tiha ona sei uza hodi determina kona-ba padraun migrasaun iha distritu ne'e. Laiha ajudu ka benefísu ruma husi governu mai iha Aldeia ne'e tan rezultadu husi estudu ne'e. Estudu ne'e hodi hato'o informasaun ba governu no organizasaun sira hodi ajuda sira halo desizaun ruma ne'ebé bele fó benefísiu ba uma-kain sira tomak iha Timor-Leste.

Ho ajudu husi Ita-Boot sira ba estudu ne'e Ita-Boot sira ajuda ona estudante Timor-oan sira ne'ebé hala'o entrevista ne'e ho uma-kain sira. Estudante sira ne'e simu tiha ona treinamentu, ho partisipasaun sira-nian iha estudu ne'e sira sei hetan esperiénsia importante husi peskiza ne'e no bele ajuda sira hodi buka servisu seluk iha futuru.

Karik Ita-Boot konkorda hodi tuir entrevista ne'e halo favor assina iha karta ne'ebé hau fó ba Ita-Boot. Ita-Boot bele hapara entrevista ne'e iha kualker tempu.

Obrigadu ba Ita-Boot nia koperasaun no ajudu ba Ami-nia ekipa. Ami fiar katak estudu ne'e sei sai importante ba Timor-Leste.

Ita bo'ot sira livre atu muda ita bo'ot nia hanoin iha tempu saida de'it durante intervista, karik ita bo'ot senti lakohi atu partisipa iha estudu ne'e.
Ita bo'ot iha pergunta balun?
Ita bo'ot aseita atu partisipa?

Appendix Four: Participant Consent Form

A4.1 Each enumerator was given one of these consent sheets for each district. The Tetun version is provided. This was kept with the participant information sheet and functioned as the signature page. The number of the questionnaire went in the first column, then the date and in the last column the respondents signature or mark to show they consented to being interviewed and understood they could stop the interview at any point.

CONSENT SHEET

Obrigadu ba Ita-Boot nia koperasaun no ajuda ba Ami-nia ekipa. Ami fiar katak estudu ne'e sei sai importante ba Timor-Leste

	BAUCAU	
Númeru Kuestionáriu	**Data**	**Assinadu**

Appendix Five: Household Survey Questionnaire

A5.1 Migration Patterns and the Impact of Internal Remittances on Poverty and Human Capital in Timor-Leste Number of questionnaire[102] |__|__|__|__|

At this moment the Centre for International Health in Perth, Western Australia is conducting a study on internal remittance and migration. We kindly ask you to answer the following questions. The survey will take 1hr of your time. We guarantee that the information given by you will be confidential and appreciate your assistance.

Section 1: Basic information *s1 q1-q6 will be filled out by the Supervisor **SPECIAL CODES 98 respondent does not know 99 no answer**

Continuation Questionnaire used 1.Yes
For Household Roster 2. No

s1q1	*District (**use codes)**	
s1q2	*Sub-district **(use codes)**	
s1q3	* Suco (**use codes)**	
S1q4	* Aldeia (use codes)	
s1q5	Size of locality **(from community leader)**	1 Less than 100 inhabitants 2 101-300 inhabitants 3 301-1000 inhabitants 4 1001-5000 inhabitants 6 More than 5 000 inhabitants
s1q6	Area	1 Urban 2 Rural
s1q7	Name of interviewer	|__|__|
s1q8	Interview date	|__|__| date |__|__| month
S1q9	Name of Household head	
S1q10	Name of person interviewed	
s1q11	Interviewer start time	|__|__|:|__|__|
s1q12	Interviewer end time	|__|__|:|__|__|

The number of times the interview was attempted

	Record the correct code in the column	**Code**	*S1q13a* **1st visit**	*S1q13b* **2nd visit**	*S1q13c* **3rd visit**
S1q13	Interview completed Respondent not at home Nobody at home Partly completed Refused to respond House not found Other (specify)	1 2 3 4 5 6 7			

S1q14	What language was used by the respondent to answer the questions?	***Use language codes***	
S1q15	Was an interpreter used? ***Circle the answer***	1. Yes 2. No	
S1q16	Who was the interpreter	1. Member of the team 2. Friend/Relative of Respondent	

Questionnaire edited by:

	Supervisor	**Office**	**Data entered into database**
Name			
Signature			
Date			

[102] © Developed by the Kiel Institute (Moldova Migration and Remittance Survey) modified for the Timorese context by Tambri Housen (Centre for International Health, Curtin University, 2010)

Section 2: Basic individual characteristics [all individuals in the household, start with household head] **SPECIAL CODES** **respondent does not know [98] no answer [99]**

s2q1	At this time how many people live in this household? *A household member is someone who has lived in the HH for more than 3 months in the past 12 months.*	____ persons

s2q2	***S2q3***	***s2q4***	***s2q5***	***S2q6***	***s2q7***	***s2q8***	***s2q9***	***S2q10***
Code	Please give the name of all the persons living in the Household in the last 12 months. (write code and name)	Place of Birth	Language	Age	Sex	Marital Status	Education (highest level reached)	If education incomplete what is the reason why ?
The first line is for the respondents details [ID]	1. Household head 2. Spouse of household head 3. Child of household head 4. Sister/brother of Household head 5. Grandchild of household head. 6. Parent of Household head 7. Other relatives 8. Other non-relatives 9. Other (specify)	For each of the members of the household record if they were born *Record the Sub-district Code*	*Use language codes*	1. <5yrs 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-54 7. 55-64 8. 7. 65+	1.Female 2.Male	1. Not Married 2. Married 3. Separated/ Divorced 4. Widowed 5. Cohabiting	1. No formal schooling 2. Primary incomplete 3. Primary complete 4. Pre-Secondary incomplete 5. Pre-Secondary complete 6. Secondary incomplete 7. Secondary complete 8. Academy/University 9. Technical college	1. Still studying 2. Too expensive 3. No interest 4. Work 5. School too far 6. (specify)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

To make sure I have a complete listing of all persons in the household (read all names you have listed one by one and then ask)

1. Are there any other person(s), such as small children, infants, or old person that we have not listed?

1. **YES** (if yes, enter their names in the table and mention the line numbers ____ ____ ____ ____ ____) 2. **NO**

2. Are there any other person(s) who may not be a member(s) of your family such as friends, domestic servants, lodgers or relatives who usually live here but we have not listed?

1. **YES** (if yes, enter their names in the table and mention the line numbers ____ ____ ____ ____ ____) 2. **NO**

3. Are there any members of the family who usually live here and are away at present for a vacation and we have not listed?

1. **YES** (if yes, enter their names in the table and mention the line numbers ____ ____ ____ ____ ____) 2. **NO**

SPECIAL CODES respondent does not know [98] no answer [99]

s2q11	Who is the main earner in the household? *[indicate ID]* If the household has no income from anywhere write 0 in the answer box.	|__|__|

S2q12	*s2q13*	*s2q14*	*s2q15*	*s2q16*
ID based on household list / first name	What is the main activity of each person in your household over 5yrs of age? 1. Employed 2. Seasonal worker 3. → s2q14 4. Unpaid work on family farm/ business 5. Student 6. Unemployed 7. Home duties 8. Too young to work or retired 3-7→ s2q15	In what industry is this employment *Look at code sheet and write the industry code.*	Does anyone have another job or own a business? 1. Yes 2. No → s3q1	What do they do in their other job? *If Employed* *Look at code sheet and write the industry code.*

Section 3: MigrationSPECIAL CODES respondent does not know [98] no answer [99]
In-Migration

S3q1	*s3q2*	*s3q3*	*s3q4*	*S3q5*
ID based on household list from s2q2 / first name	How long has each member of your household been living in this sub-district?	Where did they move from?	What year did they first arrive?	Why did they move here?
	1. *Since Birth* → s3q6 2. *They were born somewhere else and moved here.*	*Use location codes to record Sub-district*	Write the year	1. For education 2. Job transfer 3. Seeking employment 4. Seasonal work 5. Own business 6. Accompanying parent 7. Accompany husband/wife 8. Political/Religious reasons 9. Insecurity 10. Drought/Famine/Flood 11. Other (Specify)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Out-Migration

SPECIAL CODES respondent does not know [98] no answer [99]

S3q6	***s3q7***	***s3q8***	***S3q9***	***s3q10***	***s3q11***	***s3q12***	***s3q13***	***s3q14***	***s3q15***
For current household members record [ID] and name. For previous household members write 0 and name	Has anyone that has lived in your household, now or previously ever moved away for paid work or study purposes	Which members of the household have moved for work or study? *List the current household members first then the former HH members.*	Sex of the Person	What year did they first leave?	Where did they go?	Have they returned to the village to live?	Where are they living now?	What was their main activity before moving to another place?	How old were they when they first left the village to live elsewhere
	1. Yes 2. No→ s3q19	1. Household head 2. Spouse of household head 3. Child of household head 4. Sister/brother of Household head 5. Grandchild of household head. 6. Parent of Household head 7. Other relatives 8. Other non-relatives 9. Other (specify)	1 Female 2 Male	Write the year	*Use location codes record Sub-district.*	1. Yes 2. No	Use location codes *If at this location write* 0	1. Employed 2. Seasonal worker 3. Unpaid work on family farm/ business 4. Student 5. Unemployed 6. Home duties 7. Too young to work or retired.	1. <5yrs 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-54 7. 55-64 *8.* 65+

SPECIAL CODES respondent does not know [98] no answer [99]

	s3q16	***S3q17***	***S3q18***	***S3q19***	***S3q20***	***S3q21***
ID from s3q6 / first name	How many school years had [ID] completed prior to first migration	What was the main reason they left the household the first time?	How often have they been back to the village to visit in the past 12 months?	Does anyone in your household leave for short periods for paid work in another place and then return to the village?	In what season of the year does [ID] leave most often? *[do not consider short home visits]*	What is the average length of time [ID] is away from the household
	Record actual number Of school years In whole numbers	1. For education 2. Job transfer 3. Seeking employment 4. Seasonal work 5. Own business 6. Accompanying parent 7. Accompany husband/wife 8. Political/Religious reasons 9. Insecurity 10. Drought/Famine/Flood 11. Other (Specify)	Write the number of times	1. Yes 2. No → S4q1	1. Wet (Dec-April) 2. Dry (May-Nov) 3. Departure does not depend on season	1. Less than 1 month 2. 1-3 months 3. 3-6 months 4. more than 6 months

Section 4: Remittances SPECIAL CODES respondent does not know [98] no answer [99]

S4q1	In the last 12 months has anyone in your household receive GOODS OR MATERIALS from another person?	1. Yes 2. No → *S4q12*	

S4q2			
Who send these GOODS/MATERIALS?		Yes	No
A	A member of the household who is working or studying somewhere else	1	2
B	Former household members now living permanently elsewhere	1	2
C	Other relatives	1	2
D	Friends	1	2
E	Neighbours/acquaintances	1	2
F	Solidarity / NGO	1	2
G	Other (specify)	1	2

If the household receives goods or materials from others

S4q3	***S4q4***	***S4q5***	***S4q6***	***S4q7***	***S4q8***	***S4q9***
Who do you receive these GOODS or MATERIALS from?	*How old is the person who sent you these goods?*	*What is the sex of the person sending goods?*	What types of GOODS have you received from [ID] in the last 12 months? *[choose all that apply]*	How often in the last 12 months have you received GOODS from [ID?	How do you receive the GOODS/MATERIALS?	From what location are these GOODS/MATERIALS Sent?
Use codes from s4q2	1. <5yrs 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-54 7. 55-64 8. 65+	1. Female 2. Male	1. Food 2. Clothes/shoes 3. Electronic articles 4. Mobile phone 5. Other things (specify)	Write the number of times	1. [ID] brings them on a home visit 2. Someone else brings them on a home visit 3. Taxi/bus/ conductor 4. By mail 5. Other (specify)	*Use location codes Refer to separate sheet Record sub-district only*

S4q10	Which household member is these goods/materials given/sent to?	(indicate ID) |__|__|

S4q11	In the last twelve months what has been the estimated total value of these goods/materials *($US –if other, specify currency)*	_____

S4q12	In the last 12 months has anyone in your household received MONEY from another person?	1. Yes 2. No → s5q14	

S4q13			
Who sends the MONEY?		Yes	No
A	A member of the household who is working or studying somewhere else	1	2
B	Former household members now living permanently elsewhere	1	2
C	Other relatives	1	2
D	Friends	1	2
E	Neighbours/acquaintances	1	2
F	Solidarity / NGO	1	2
G	Other (specify)	1	2

If the household receives money from others

S4q14	***S4q15***	***S4q16***	***S4q17***	***S4q18***	***S4q19***	***S4q20***	***S4q21***
Who do you receive the MONEY from?	How old is the person who sends the money?	What is the sex of the person sending money?	How much MONEY did you receive from [ID] in the last 12 months?	From what location do you receive this money	How many times in the past 12 months have you received money from [ID]?	What has been the main method that they have sent money in the past 12 months?	What is the main reason they have used this method?
Use codes from s4q2	1. <5yrs 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-54 7. 55-64 8. 65+	1.Female 2.Male	*[$US or specify currency]*	**Use location codes to record sub-district*	Write the number of times	1. [ID} brings it on a visit. 2. Someone else brings it to the household. 3. Taxi or bus driver. 4. Bank Transfer 5. Money Transfer (Western Union) 6. Microfinance office (IMFTL) 7. Credit Unions 8. Specialised NGO's (Moris Rasik, Tuba Rai Metin, CCF) 9. Other (specify)	1. Speed 2. No other option 3. Security 4. Costs 5. Familiarity 6. Trust 7. Other (specify

S4q22	What is the main problem you have when receiving money?	1. No problems 2. Time - Have to wait for someone to come to the village with the money. 3. Money did not arrive 4. Receive only a portion of what is sent 5. Complicated (I have to travel to receive the money) 6. High Fees 7. Other (specify)	

S4q23	In the past 12 months which household member/s have received money from these people? (indicate ID) *Write the ID of the household members as recorded in s2q2* |__|__| |__|__| |__|__| |__|__| |__|__|

S4q24	Which household members decide how to spend the money received? (indicate ID) *Write the ID of the household members as recorded in s2q2* |__|__| |__|__| |__|__| |__|__| |__|__|

Section 5: Remittance use (If no monetary remittance received → s5q14) ***Rank the 3 most important uses***

		How have you mostly used the money received in the last 12 months? Do not consider money received from employment wages or business. This question is ONLY about the money received from others that we have discussed in the last question. *(Mark all that apply then rank then three most important uses)*	**S5q1** Mark all that apply	**S5q2a** First use	**S5q2b** Second use	**S5q2c** Third use
S5q1	A	Daily needs (food, clothes, rent etc.)		1	21	41
	B	Consumer durables (mobile telephone, TV, computer, fridge etc.)		2	22	42
	C	Social events (weddings, funerals, celebrations)		3	23	43
	D	To repair an apartment/flat/house		4	24	44
	E	Education (school fees etc.)		5	25	45
	F	Health care		6	26	46
	G	To buy a motorcycle		7	27	47
	H	To purchase land		8	28	48
	I	To rent land		9	29	49
	J	To purchase livestock		10	30	50
	K	To buy agricultural inputs (seeds, fertilizer, tractor etc.)		11	31	51
	L	To start a business		12	32	52
	M	Savings		13	33	53
	N	To repay a loan		14	34	54
	O	To lend money to relatives/friends		15	35	55
	P	To assist other household members to move		16	36	56
	Q	To assist other relatives/friends who are not household members to migrate		17	37	57
	R	To buy an apartment/ house		18	38	58
	S	Holidays		19	39	59
	T	Other (specify)		20	40	60

Education

SPECIAL CODES: respondent does not know [98] no answer [99]

S5q4	***S5q5***	***S5q6***	***S5q7***	***S5q8***
What do you spend on education each month?	Has money sent from others been spent on education costs	What level of education has the remittance been used for	What is the remittance mostly used for	Would the education be possible without the remittances?
$US (if other specify)	1. Yes 2. NO→ s5q9	1. Primary education 2. Pre-secondary 3. Secondary education 4. Tertiary education 5. Technical college 6. Other (specify)	1. School fees 2. Clothing for school 3. Materials (books, pens) 4. Transport to and from school 5. Other (specify)	1. Yes 2. No

Health

S5q9	***S5q10***	***S5q11***	***S5q12***
What do you spend on health care each month?	Has the remittance been used to pay for health care or services	If remittance has been used to pay for Health which of the following is it mainly used for	Would the Health care be possible without the remittance receipts
$US (if other specify)	1. Yes 2. No → s5q13	1. Consultation fees 2. Purchase of medicines 3. Hospital Treatment 4. Transport to and from the Clinic/hospital	1. Yes 2. No

Other aspects (If no monetary remittance received → s5q14)

SPECIAL CODES respondent does not know [98] no answer [99]

S5q13	How much do remittances contribute to the household's budget?	1.Not at all. 2.A little 3.About half 4.More than half	
S5q14	Does your household have savings?	1.Yes 2.No→ s5q17	
S5q15	Does your household have a *savings* account at a bank or other institution	1.Yes 2.No → s5q17	
S5q16	Who is this savings account with	1. ANZ 2. CGD (Caixa Geral do Depositos) 3. Bank Madniri 4. IMFTL (Instituicao de Microfinancas de Timor-Leste) 5. Credit Union 6. Moris Rasik 7. Tuba Rai Metin 8. Other (specify)	
S5q17	Does your household have a loan with a financial institution?	1.Yes 2.No → s5q19	
S5q18	Who is this loan with	1.ANZ 2.CGD (Caixa Geral do Depositos) 3.Bank Madniri 4.IMFTL (Instituicao de Microfinancas de Timor-Leste) 5.Credit Union 6.Moris Rasik 7.Tuba Rai Metin 8.Other (specify)	
S5q19	Does your household have loans with other people?	1.Yes 2.No → s5q21	
S5q20	Who is this debt with (multiple answers accepted)	1.Relatives 2.Friend 3.Neighbour 4.Employer 5.Other (specify)	

Remittances sentSPECIAL CODES respondent does not know [98] no answer

S5q21	*S5q22*	*S5q23*	*S5q24*	*S5q25*	*S5q26*	*S5q27*	*S5q28*	*S5q29*
For current household members record [ID] and name. For previous household members write 0 and name	Have you sent GOODS/ MATERIALS to any migrant in the last 12 months?	Who did you sent the goods to?	Age of recipient	Sex of Recipient	Location of Recipient	What type of GOODS did you send?	What was the total value of these items you have sent in the last 12 months?	How often in the past 12 months have you sent GOODS to a relative/ friend?
	1. Yes 2. No → s5q30	1. A member of the household who is working or studying somewhere else. 2. Former household members now living permanently elsewhere 3. Other relatives 4. Friends 5. Neighbours/acquaintances 6. Other (specify)	1. <5yrs 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-54 7. 55-65 8. 65+	1. Female 2. Male	*use location Codes and record sub-district code*	1. Food 2. Clothes/ Shoes 3. Electronic articles 4. Mobile telephone 5. Other (specify)	*($US or if other, specify)*	*Write the number of times*

S5q30	*S5q31*	*S5q32*	*S5q33*	*S5q34*	*S5q35*	*S5q36*	*S5q37*
For current household members record [ID] & name For previous household members write 0 and name	Have you sent MONEY to a relative for friend in the last 12 months?	Age of recipient	Sex of Recipient	Location of Recipient	What were the main reasons? (*choose up to two answers)*	How much did you send in Total in the past 12 months?	How often in the past 12 months have you sent MONEY to another person?
	1. Yes 2. No → S6q1	1. <5yrs 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-54 7. 55-64 8. 65+	1. Female 2. Male	*use location Codes and Record sub-district*	1. To help support their basic needs 2. To pay for their health care costs 3. To pay for education costs 4. To help pay for a celebration, birth, wedding or funeral. 5. For a penalty 6. To pay for relocation costs. 7. Other loan repayment 8. Other (specify)	*$US or if other, specify*	*Write the number of times*

Section 6: Living standardSPECIAL CODES respondent does not know [98] no answer [99]

		S6q1	***S6q2***
	How do you assess your living standard?	Today	*Has your living standard in these areas improved, remained the same or worsened since the first household member moved to another place to live*
		1 More than adequate (can afford everything needed) 3 Adequate (enough for a decent living but cannot afford more expensive goods) 4 Less than adequate (just enough for the bare necessities) 5 Very bad (not enough for the bare necessities)	1. Improved 2. Stayed the same 3. Worsened
a.	In general		
b.	Food		
c.	Housing		
d.	Clothing		
e.	Health Care		
f.	Children's' education		

S6q3
How has migration of household members affected the household *Circle all that the respondent mention and then write the codes clearly in the box below.*
1. Increased income of household 2. Increased education of household 3. Increased education of migrant 4. Increased skills of migrant 5. Lower cost of living as a result of the absence of the migrant 6. More leisure time 7. No effect 8. Forced to spend money in migration 9. Household members have to work longer and harder 10. Emotional stress as a result of couple/family separation 11. Lack of parents care 12. Forced to hire labour 13. Other (specify)

Section 7: Consumption, Expenditure, Income, AssetsSPECIAL CODES respondent does not know [98] no answer [99]

S7q1	In the last 30 days, what is the sum of the household's total income? *[in $US – if other, specify]*	_____

	S7q2	S7q3	S7q4
	In the last year, what is the main source of the households' income? (Mark with an X)	In the last 30 days, what is the households' income from each of the following sources? *[in $US – if other, specify]*	In the last 12 months what is the household income from each of the following sources
a	Farm produce	$US	$US
b	Main place of Employment (wages)	$US	$US
c	Salary from additional work	$US	$US
d	Non-farm enterprise/business	$US	$US
e	Seasonal contract work	$US	$US
f	Money from family or friends	$US	$US
g	Income from renting of property items	$US	$US
h	Income from sale of house	$US	$US
i	Income from sale of property	$US	$US
j	Government social protection	$US	$US
k	Pension from Portugal/ Indonesia	$US	$US
l	Other (specify)	$US	$US
m	Don't know	98	98
n	Refuse to answer	99	99

S7q5	During the past 30 days have you received food, goods, materials in payment for work? If yes, what is the total value of these items.	1. Yes 2. No	US$_____

S7q6	During the past 30 days have you received food, goods or materials from NGOs, Solidarity or Ministry of Health? IF yes, what is the total value of these items	1. Yes 2. No	US$_____

S7q7	In the last 30 days how much of the households income is spent on essential items (essential items include food, cooking fuel, rent those necessary for survival?	US$_____

S7q8	Would you consider this current economic year	1. Better than normal 2. Normal 3. Worse than normal	

S7q9	How would you describe the current economic condition of your household?	1. Very Good 2. Average 3. Poor 4. Very poor 98. Don't know 99. Refused to answer	

Assets **SPECIAL CODES respondent does not know [98] no answer [99]**

	S7q10 Does *your household* own the following assets?		***S7q11*** How many of each asset does *your household* own?	***S7q12*** What is the current value in $US of this asset?
	Yes	No		
1. House	1	2		
2. Cultivable Land	1	2	hectares	
3. Livestock	1	2		
4. Car	1	2		
5. Motorcycle	1	2		
6. Washing machine	1	2		
7. Television	1	2		
8. TV satellite dish	1	2		
9. Mobile phone	1	2		
10. Radio,	1	2		
11. Jewellery	1	2		
12. Other assets				

S7q13	Has the movement of other household members to other locations for work or study helped you increase your assets?	1. Yes 2. No	

S7q14	Has the Household had to sell any of its assets to pay for migration costs of family members?	1. Yes 2. No	

Section 7: Consumption SPECIAL CODES respondent does not know [98] no answer [99]

S7q15	In the last 30 days, what is the sum of the household's total expenditures? *[in $US – if other, specify]*	_____

S7q16			***S7q17***	***S7q18***	***S7q19***	***S7q20***
Has a member of your household spent money on any of these items or received any items listed as a gift form another person in the past 12 months? 98 respondent does not know 99 no answer	YES	NO	How much has your household spent on the following items in the past 30 days?	During the last 30 days did your household receive any of these items as a gift or as payment for work? If Yes - Please record the value. If No → S7q19	How much has your household spent on the following items in the past 12 months?	During the last 12 months did your household receive any of these items as a gift or as payment for work? If Yes - Please record the value. If No → S7q21
Non-food						
1. Clothes/Shoes	1	2	US$	US$	US$	US$
2. Transport (bus, microlet, taxi)	1	2	US$	US$	US$	US$
3. Fuel for motorcycle or car	1	2	US$	US$	US$	US$
4. Cultural events (weddings, funerals,	1	2	US$	US$	US$	US$
5. Entertainment	1	2	US$	US$	US$	US$
6. Home (improvements, construction)	1	2	US$	US$	US$	US$
8. Sending money to others	1	2	US$		US$	
9. Gifts/presents/goods for others	1	2	US$		US$	
Utilities						
10. Electricity, gas, water,	1	2	US$	US$	US$	US$
11. Cooking fuel (firewood, coal, kerosene,	1	2	US$	US$	US$	US$
12. Phone bills	1	2	US$	US$	US$	US$
13. Rent	1	2	US$	US$	US$	US$
14. Agriculture (seed, fertilizers, wages)	1	2	US$	US$	US$	US$
15. Livestock	1	2	US$	US$	US$	US$
16. Non-farm enterprise (your business)	1	2	US$	US$	US$	US$
17. Health	1	2	US$	US$	US$	US$
18. Education	1	2	US$	US$	US$	US$
19. Savings	1	2	US$	US$	US$	US$
20. Repayment of loans	1	2	US$	US$	US$	US$
Durables						
21. Domestic appliances	1	2	US$	US$	US$	US$
22. Television, Satellite dish, radio Computer,	1	2	US$	US$	US$	US$
23. Vehicles (bicycle, motorcycle, car, truck,	1	2	US$	US$	US$	US$
24. Other	1	2	US$	US$	US$	US$

S7q21			*S7q22*	*S7q23*	*S7q24*		*S7q25*	*S7q26*	*S7q27*
I want to ask you about the food consumed in your household regardless of the person who ate it. In the past 7 days did a member of your household consume any of the following food items. This is about food you have consumed in the last 7 days. not food you are saving or storing for another day. 98 respondent does not know 99 no answer	YES	NO	Of the food consumed by your household during the last 7 days, how much was purchased by your household?	How much did your household spend for the food purchased [in $US – if other, specify]	Of the food consumed in the last 7 days, how much was grown by your household or home-produced? If None → S7q26		What is the value of the food grown or home-produced?	Of the food consumed in the last 7 days, how much did your household receive in-kind, as a gift, payment for work or food aid? If None → s7q28	What is the value of the food received?
Food									
25. Cereals (rice, corn, wheat flour, corn flour, other cereals)	1	2	box	US$	Kg.	US$		Kg.	US$
26. Tubers (cassava, sweet potatoes, sago, taro, potatoes, other)	1	2	Kg bunch	US$	Kg.	US$		Kg.	US$
27. Fish (tuna, salted fish, fresh fish, other seafood, canned fish)	1	2	Kg bunch	US$	Kg.	US$		Kg.	US$
28. Meat (beef, buffalo, goat, port, chicken, other meat)	1	2	Kg bunch)	US$	Kg.	US$		Kg.	US$
29. Eggs and milk products	1	2		US$		US$			US$
30. Vegetables	1	2	Kg bunch	US$	Kg.	US$		Kg.	US$
31. Legumes and nuts (soya bean, mung bean, kidney bean, cashews, peanuts)	1	2	Kg cup	US$	Kg.	US$		Kg.	US$
32. Fruit	1	2	Kg.	US$	Kg.	US$		Kg.	US$
33. Oil and fat (cooking oil, butter and margarine)	1	2		US$		US$			US$
34. Spices and honey (salt, honey, candle nut, paprika, soy sauce, other spices	1	2		US$		US$			US$
35. Beverages/Drinks (coffee, tea, juice, cola)	1	2		US$		US$			US$
36. Other foods (noodles, macaroni, bread, biscuits, sweets, snacks)	1	2		US$		US$			US$
37. Alcoholic drinks	1	2		US$		US$			US$
38. Tobacco and betel	1	2		US$		US$			US$

S7q28

Thankyou for your time and participation. Do you have any questions you would like to ask me?
Do you think one or more of the family members that have moved for work or education from your household would be happy to talk to us about their experiences

If so can you please tell me their name: _____ location: _____ mobile phone:_____

Appendix Six: Interview Guides

This appendix contains the question guides used in Key informant and Focus Group Discussions, the primary research tool for the qualitative data.

A6.1 Key informant interviews (community leaders, NGO's, local organizations)

General Information
Name of Interviewer
Date
District/Village
Place
Start time
Name of Interviewee
Job title or relationship to issue of migration/transfers
Organization/Institution
Sex
Age
Level of education

Interview Guide
1. Could you please provide an overall description of this community
2. What's the main source of income for the residents in the community?
3. Has the source of income of the residents changed in the past 10 years (since independence)? In what way?
4. Have there been any changes in the community's productive activities?
5. Are you aware of families in this community receiving transfers from internal migrants?
6. What do you think about migration to another districts/centre for work?
7. Has the migration to other districts/centres for work changed the standard of living in the community? How?
8. Are their differences between households receiving money from migrants working in other areas of the country and those that do not? What kinds?
9. Has the number of poor families in the community decreased?
10. What impact has migration and transfers had in the following areas?
    - Housing
    - Access to education
    - Health
    - Access to healthcare services
    - Job creation
    - Procurement of goods
    - Food Basket/Security
11. In terms of the community, have needs been met by the inflow of transfers?
12. Do you think that transfers have had an impact on the community's level of development (economic, social or human)?
13. Besides the families of the migrants, who in the community has benefited the most from the funds sent by migrants?

NB: The questions are only to be used as a reference guide and prompt. An open interview directed by the interviewee is the aim.

A6.2 Focus group discussion interview guide

General Information
Name of Interviewer
Date
District/Village
Place
Start time
Number of People in the Group

- Number of females and approximate age
- Number of males and approximate age

History of Migration

1. Of the household members that live in other districts/centres, where do they live and for how long? And who has lived away but no longer does?
2. How was the decision to migrate made in each case?
3. What was the occupation of those who migrated prior to leaving?
4. How are they earning a living now?

Economics and Transfers

1. Who helps support the household financially and how? Do all those who have income contribute to the household? Are there differences in the contributions? Why?
2. What changes in the employment or activity of household members has there been since migration?
3. Who decides how much money the migrant is to send? How is it decided?
4. In addition to the money, are any other types of shipments made? (clothing, electrical appliances, food, etc.) What method is used to send these?
5. How much (per centage) of the household income is from transfers?
6. Does the migrant always send the same amount? What factors influence the amount sent?
7. What is the money spent on?
8. Have transfers had an impact on any of the following
    - Housing
    - Access to education
    - Health
    - Access to healthcare services
    - Job creation
    - Procurement of goods
    - Food Basket/Security
9. How decides what to spend the money on?
10. How does the household benefit from the money received?
11. What things are done now that was not possible prior to sending a migrant?
12. Is more invested in education and health?
13. Do you have a bank account?
14. Is some of the money received saved?
15. Since your family member has been away, has an investment been made in: a business, purchase of property, purchase of animals, etc.?
16. Do you own land?
17. Is part of the transfer money used for agricultural/livestock activities?

Poverty and Human Capital

1. Has the transfer money improved your standard of living? How or Why not?
2. Do you think the money/goods received has changed your household's status in your community?
3. Are you aware of differences between yourself, other households in the community receiving transfers and households who do not receive transfers?
4. Has the transfer money enabled members of your household to gain further education? How?
5. What are barriers to education of household members?

6. What changes to your household have occurred after the migrant's departure (role changes, power, carer etc.)?
7. What negative effects do you think migration has had on the living conditions of this household?
8. If they had not migrated, how do you think the overall situation of this household would be different from what it is today?
9. If you stopped receiving transfers, how would the family's lifestyle change?

NB: The questions are only to be used as a reference guide and prompt. An open interview directed by the interviewee is the aim.

Appendix Seven: Descriptive Statistics

This Appendix provides the complete tables of descriptive variables presented in Chapter Five.

Table A7.1: Descriptive statistics of Migrant and Non-Migrant Households

	All Households (n=654)	Non-Migrant Households (n=360)	Migrant Households (n=294)	Difference
Average Total Income ($US)	$1073	$682	$1554	-1117.45 (-3.46)***
Average Home Income ($US)	$908	$488	$1427	-938.92 (-3.27)***
Average Transfer Income[a]($US)	$291	$190	$416	-226.24 (-1.81)
Average Per capita Income ($US)	$197	$147	$257	-110.81 (-3.08)**
Average number of employed persons	0.45	0.39	0.52	-0.13 (-2.20)*
Average number of seasonal/contract workers	0.63	0.59	0.68	-0.89 (-1.10)
Household Size	6.51	6.26	6.82	-0.56 (-2.61)**
Gender of Household Head	1.87	1.88	1.86	0.02 (-0.53)
% Males	87%	88%	87%	
% Females	13%	12%	13%	
Average Age of Household Head	35-44	35-44	45-54	-0.54 (5.14)***
Average number of dependents	3.00	2.98	3.03	-0.28 (-0.44)
Average number of children under 15years	2.67	2.68	2.66	0.02 (0.13)
Average number 15yrs and over	3.85	3.57	4.20	-1.46 (4.29)***
Average number of males over 15 years	1.91	1.78	2.09	-0.31 (3.26)**
Average number of females over 15 years	1.94	1.79	2.11	-0.32 (3.53)***
Average number over 65 years	0.33	0.30	0.37	-0.65 (-1.31)
Cultivable land (Ha)	2.67	2.19	2.50	-0.31 (-0.92)
Average number of Migrants	0.79		1.75	
Members 15yrs and over Completed Primary school education	0.21	0.19	0.23	-0.04 (1.06)
Members 15yrs and over completed Pre-secondary education	0.17	0.16	0.18	-0.02 (0.80)
Members 15yrs and over completed Secondary school education	0.46	0.35	0.60	-0.25 (4.05)***
Members 15yrs and over with Academy/University education	0.15	0.01	0.25	-0.24 (4.60)***
Members 15yrs and over with Technical college education	0.01	0.01	0.01	0.0 (0.25)
Average education level completed of Household Head	Primary Incomplete	Primary Incomplete	Primary Incomplete	-0.18 (-1.05)
Nearest transport road to the aldeia (walking minutes)	31.62	30.03	33.56	-3.53 (-1.02)
Nearest market to the aldeia (walking minutes)	74.43	70.17	79.66	-9.49 (2.23)*
Nearest urban centre to the aldeia (walking minutes)	109.29	116.33	100.66	15.67 (2.42)*
Nearest Primary school to the aldeia (walking minutes)	36.97	38.89	34.66	4.19 (1.30)
Nearest Secondary school to the aldeia (walking minutes)	92.09	96.97	86.12	10.85 (2.16)*

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

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

Table A7.2: Descriptive Statistics of Transfer-receiving and Non-Receiving Households

	All Households (n=654)	NRRHH[a] (n=332)	RRHH[b] (inc Pension) (n=322)	RRHH (exc Pension) (n=191)	Difference (RRHH inc Pension v's NRRHH)	Difference (RRHH exc Pension v's No Remit and No Pension)
Average Total Income ($US)	$1073	$1053	$1094	$846	-41.29 (-0.17)	206.95 (0.84)
Average Home Income ($US)	$908	$1053	$690	$688	362.81 (1.47)	364.69 (1.44)
Average Transfer Income[c] ($US)	$291	-	$414	$168	-	
Average Per capita Income ($US)	$197	$172	$200	$142	-27.90 (-0.89)	29.31 (0.93)
Average number of employed persons	0.45	0.42	0.47	0.51	-0.052 (-0.89)	-0.90 (-1.27)
Average number of seasonal/contract workers	0.63	0.56	0.71	0.72	-0.16 (-1.97)*	-0.16 (-2.26)*
Household Size	6.51	6.47	6.54	6.60	-0.07 (-0.34)	-0.05 (-0.20)
Gender of Household Head	1.87	1.91	1.83	1.84	0.08 (2.96)**	0.07 (2.35)*
Males	87%	91%	83%	84%		
Females	13%	9%	17%	16%		
Average age of Household Head	35-44	35-44	45-54	45-54	-0.67 (-6.51)***	-0.46 (-3.96)***
Average number of dependents	3.00	3.03	2.97	2.90	0.61 (0.39)	0.13 (0.70)
Average number of children under 15 years	2.67	2.90	2.41	2.59	0.49 (3.13)**	0.31 (1.67)
Average number 15yrs and over	3.85	3.65	4.08	4.01	-0.42(-2.90)**	-0.35 (-2.01)*
Average number of males over 15 years	1.91	1.84	2.00	2.00	-0.61 (-0.69)	-0.56 (-1.36)
Average number of females over 15 years	1.94	1.82	2.07	2.00	-0.26 (-2.88)**	-0.18 (-1.71)
Average number over 65 years	0.33	0.13	0.56	0.31	-0.43 (-0.93)***	-0.18 (-4.03)*
Cultivable land (Ha)	2.67	2.05	2.66	3.11	-0.61 (-1.84)	-1.07 (-2.50)*
Average number of Migrants	0.79	0.60	0.99	1.13	-0.39 (-4.46)***	-0.52 (-5.16)***
Members 15yrs and over completed Primary school education	0.21	0.23	0.18	0.21	0.05 (1.37)	0.02 (0.42)
Members 15yrs and over completed Pre-secondary education	0.17	0.20	0.13	0.13	0.07 (2.04)*	0.07 (1.76)
Members 15yrs and over completed Secondary school education	0.46	0.41	0.53	0.58	-0.12 (-1.94)	-0.17 (-2.29)*
Members 15yrs and over with Academy/University education	0.15	0.18	0.12	0.13	0.55 (1.44)	0.05 (1.08)
Members 15yrs and over with Technical college education	0.01	0.01	0.01	0.01	-0.00 (-0.15)	0.00 (0.35)
Average education level completed of Household Head	Primary incomplete	Primary incomplete	Primary incomplete	Primary incomplete	0.40 (2.35)*	0.14 (0.65)

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

a. NRRHH = Transfer-receiving Household.

b. RRHH = Non-transfer-receiving household

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

Table A7.3: Descriptive statistics of Transfer Sending and Non-Sending Households

Variable	All Households (n=654)	Transfer Non-Sending Households (n=378)	Transfer Sending Households (n=278)	Difference
Average Total Income ($US)	1073.34	811.54	1659.39	-811.54 (-2.58)**
Average Home Income ($US)	908.42	614.62	1293.45	-678.83 (-2.33)*
Average Transfer Income[a] ($US)	290.77	202.05	385.56	-183.51 (-1.46)
Average Per capita Income ($US)	196.54	161.46	237.05	-75.59 (-2.90)*
Average number of employed persons	0.45	0.43	0.47	-0.04 (-0.72)
Average number of seasonal/contract workers	0.63	0.60	0.67	-0.67 (-0.83)
Household Size	6.51	6.24	6.88	-0.63 (-2.93)**
Gender of Household Head	1.87	1.87	1.88	-0.02 (-0.58)
% males	87.2	86.5	88.0	
% females	12.8	13.5	12.0	
Average age of Household Head	35-44	35-44	45-54	-0.30 (-2.77)**
Average number of dependents	3.00	2.96	3.06	-010 (-0.60)
Average number of children under 15yrs	2.67	2.06	2.70	-0.64 (-1.91)
Average number 15yrs and over	3.85	3.60	4.20	-0.61 (-4.12)***
Average number of males 15yrs and over	1.91	1.80	2.07	-0.27 (-2.79)**
Average number of females 15yrs and over	1.94	1.79	2.13	-0.34 (-3.76)***
Average number over 65yrs	0.33	0.30	0.37	-0.07 (-1.4)
Cultivable land (Ha)	2.67	2.50	2.19	-0.31 (-0.92)
Average number of Migrants	0.79	0.40	1.32	-0.92 (-11.24)***
Members 15yrs and over Completed Primary school education	0.21	0.18	0.25	-0.08 (-2.03)*
Members 15yrs and over completed Pre-secondary education	0.17	0.17	0.17	-0.00 (-0.10)
Members 15yrs and over completed Secondary school education	0.46	0.40	0.54	-0.14(-2.19)*
Members 15yrs and over with Academy/University education	0.15	0.07	0.26	-0.19 (-5.1)***
Members 15yrs and over with Technical college education	0.01	0.01	0.01	-0.00 (-0.39)
Average education level completed of Household Head	Primary incomplete	Primary incomplete	Primary incomplete	-0.21 (-1.20)
Nearest transport road to the aldeia (walking minutes)	31.62	33.26	29.36	3.91 (1.12)
Nearest market to the aldeia (walking minutes)	74.43	71.52	78.42	-6.90 (-1.61)
Nearest urban centre to the aldeia (walking minutes)	109.29	113.60	103.39	10.21 (1.56)
Nearest Primary school to the aldeia (walking minutes)	36.97	39.04	34.13	4.91 (1.51)
Nearest Secondary school to the aldeia (walking minutes)	92.09	95.98	86.78	9.20 (1.81)

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

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

Appendix Eight: Calculating Poverty Measures

A8.1 Poverty Measures

Poverty figures were based on *per capita* household expenditure. In calculating an expenditure measure of welfare, we consider an expenditure function:

$$y_i = p \,.\, q = e(p,x,u)$$

with y_i representing the minimal cost required to meet a given level of utility u or wellbeing, derived by the prices p, demographic characteristics of the household x and vector of quantity of goods and services consumed q. (Deaton, 1997)

Per capita household consumption fails to recognize that different individuals in the household may have different needs, assuming that all consumption is shared equally between household members. In reality we know this not to be the case with needs based on individual characteristics such as age, gender, employment etc. This limitation is recognized in our analysis but due to resource constraints it was not feasible to interview every member of each of the study households.

Consumption figures were calculated using the total value of food and non-food items consumed by the household, including those purchased, self-produced and received as gifts or transfers. A household is considered poor if the per capita consumption is below the 2007 poverty line. (World Bank, 2005a)

Three poverty indices were considered in the analysis (World Bank, 2005a). The poverty *headcount index* provides the proportion of the population living below the poverty line but does not provide any indication as to the severity or depth of poverty experienced:

$$P_o = \frac{1N}{} \sum_{i=1}^{N} I(y_i < z)$$

where N represents the total sample, y_i is the expenditure and z the poverty line. I is an indicator function that takes on the value of 1 if the expenditure is less than poverty line. The house is then counted as poor. While the poverty headcount provides an indication of overall welfare of a population it does not provide any understanding as to how poor the poor are. It also fails to measure the impact of cash transfers on the very poor. Welfare may have increased in households receiving a cash transfer but their income may

remain low enough to be still classified below the poverty line. For these reasons we need to also consider other measures of poverty.

The *poverty gap* index gives the 'depth' of poverty, providing a measure of by what per centage the average expenditure of the poor falls below the poverty line:

$$P_1 = \frac{1}{N}\sum_{i=1}^{N}\frac{G_i}{z}$$

where the mean proportionate poverty gap in the population P_1 represents the poverty gap G_i as measured by the poverty line z minus the actual income y_i for poor households, non-poor households have zero poverty gap. This measure does not take into account inequality among the poor. For this reason the squaring of the poverty gap is often favoured as it places more weight on observations that are well below the poverty line:

$$P_2 = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{G_i}{z}\right)^2$$

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 (World Bank, 2005a). These poverty measures were calculated[103] for households receiving the government pension and compared with households not receiving the government pension (Du et al., 2005).

[103] The measures were calculated using FGT's in STATA (version 11.2) based on the poverty measures proposed by Foster, Greer and Thorbecke (1984).

Appendix Nine: Logistic Regression

Logistic regression estimates of the propensity to participate in migration and receive transfers, Timor-Leste 2010.

Table A9.1: Logistic Regression estimates of Propensity to Participate in Migration and Receive Transfers

Logistic regression — Number of obs = 654; LR chi2(29) = 186.66; Prob > chi2 = 0.0000; Log likelihood = -359.91215; Pseudo R2 = 0.2059

Remittance	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
HHSize	.0510525	.0458231	1.11	0.265	-.0387592	.1408642
GenderHHH	.5091756	.3021664	1.69	0.092	-.0830597	1.101411
HHH25to54	-.9363972	.2169664	-4.32	0.000	-1.361643	-.5111509
Under5yrs	.094811	.2141727	0.44	0.658	-.3249597	.5145818
from5to15ys	-.2308531	.2503291	-0.92	0.356	-.7214891	.2597829
Over65yrs	1.880428	.2535839	7.42	0.000	1.383413	2.377443
Over15Prim~y	-.4757301	.2464709	-1.93	0.054	-.9588042	.0073441
Over15PreSec	-.4405668	.2789467	-1.58	0.114	-.9872922	.1061587
Over15Sec	.4366018	.2143792	2.04	0.042	.0164264	.8567773
Over15Tert~y	-.6287653	.336495	-1.87	0.062	-1.288283	.0307528
Over15Tech	.923851	1.162678	0.79	0.427	-1.354956	3.202658
SeasContWk	.8787616	.2074216	4.24	0.000	.4722227	1.2853
Employed	.42277	.2196236	1.92	0.054	-.0076844	.8532243
Pov1	.0037702	.2050048	0.02	0.985	-.3980318	.4055721
RemSent	-.1783698	.1990687	-0.90	0.370	-.5685373	.2117978
Savings	.3967624	.2403057	1.65	0.099	-.0742281	.8677529
InstitLoans	-.4022888	.2951745	-1.36	0.173	-.9808202	.1762425
otherLoans	-.0136187	.2323355	-0.06	0.953	-.468988	.4417505
House	-.2356082	.6531892	-0.36	0.718	-1.515836	1.044619
Cultivable~d	.069236	.3526686	0.20	0.844	-.6219818	.7604538
Livestock	.4075652	.287622	1.42	0.156	-.1561636	.9712939
Car	-.6011819	.7145426	-0.84	0.400	-2.00166	.7992959
Motorcycle	-.0680784	.4132301	-0.16	0.869	-.8779945	.7418376
Television	-.3569353	.515371	-0.69	0.489	-1.367044	.6531733
Satellite	.4192729	.6374214	0.66	0.511	-.8300501	1.668596
MobilePhone	.0636065	.2168678	0.29	0.769	-.3614465	.4886595
Radio	-.0518842	.231127	-0.22	0.822	-.5048849	.4011165
Jewelry	.3150555	.3538124	0.89	0.373	-.378404	1.008515
Other	1.061979	.7825179	1.36	0.175	-.4717279	2.595686
_cons	-.6337102	.7442721	-0.85	0.395	-2.092457	.8250363

Table A9.2: Logistic Regression estimates of Propensity to Participate in Migration and Receive Transfers

Logistic regression — Number of obs = 654; LR chi2(32) = 305.14; Prob > chi2 = 0.0000; Log likelihood = -297.41056; Pseudo R2 = 0.3391

Migrant	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
HHSize	-.0814023	.0528194	-1.54	0.123	-.1849265	.0221218
GenderHHH	.0261197	.3403596	0.08	0.939	-.6409729	.6932123
HHH25to54	-.5164517	.2555583	-2.02	0.043	-1.017337	-.0155666
Under5yrs	.3583446	.2475534	1.45	0.148	-.1268512	.8435403
from5to15ys	.5910695	.2832357	2.09	0.037	.0359377	1.146201
Over65yrs	.2460228	.2900978	0.85	0.396	-.3225585	.8146041
Over15Prim~y	.1180842	.2788748	0.42	0.672	-.4285004	.6646689
Over15PreSec	.0094958	.3073083	0.03	0.975	-.5928174	.6118091
Over15Sec	.7937973	.2428986	3.27	0.001	.3177248	1.26987
Over15Tert~y	.6444839	.3907769	1.65	0.099	-.1214248	1.410392
Over15Tech	-.051677	1.073414	-0.05	0.962	-2.15553	2.052176
SeasContWk	.4696983	.2346028	2.00	0.045	.0098853	.9295113
Employed	.1783854	.2471885	0.72	0.471	-.3060951	.6628659
Pov1	-.6948781	.2349109	-2.96	0.003	-1.155295	-.2344611
Remittance	.1320581	.3092007	0.43	0.669	-.4739642	.7380804
PensionRec~d	.0840392	.3600656	0.23	0.815	-.6216765	.7897549
RemFromMig	3.811592	.6215752	6.13	0.000	2.593327	5.029857
RemSent	2.434161	.2322419	10.48	0.000	1.978976	2.889347
Savings	.0854337	.2752478	0.31	0.756	-.4540421	.6249095
InstitLoans	-.3224197	.3309959	-0.97	0.330	-.9711598	.3263204
otherLoans	.2196494	.2627108	0.84	0.403	-.2952543	.734553
House	1.444516	.9797602	1.47	0.140	-.4757785	3.364811
Cultivable~d	.8233875	.4160871	1.98	0.048	.0078718	1.638903
Livestock	-.0672502	.3257966	-0.21	0.836	-.7057999	.5712995
Car	.1513679	.7533689	0.20	0.841	-1.325208	1.627944
Motorcycle	.5486386	.4722751	1.16	0.245	-.3770035	1.474281
Television	.4126432	.5716164	0.72	0.470	-.7077044	1.532991
Satellite	.7309601	.7428786	0.98	0.325	-.7250553	2.186975
MobilePhone	-.0800318	.2433887	-0.33	0.742	-.5570649	.3970013
Radio	.3659456	.259593	1.41	0.159	-.1428475	.8747386
Jewelry	-.7249139	.3969003	-1.83	0.068	-1.502824	.0529963
Other	-3.292739	1.346764	-2.44	0.014	-5.932348	-.6531301
_cons	-3.754088	1.09976	-3.41	0.001	-5.909578	-1.598598

Appendix Ten: Econometric Analysis

The econometric estimation was re-run without the migration instrumental variables. In the first stage equation past migration instrumental variables were removed and the analysis re-run with instrumental variables that determine selection into the government pension receiving group but are not correlated with expenditure. As discussed in chapter 2 the lack of robust targeting systems for the government social protection scheme has resulted in poor distributed to those in need with 60% of the bottom two income quintiles not reached by any social protection program. Distance is one limiting factor on access to social protection. Various distance variables were grouped to provide an instrument to account for endogenity bias.

Table A10.1: Means and standard deviations for instrumental variables

Variable	Mean (SD)
Asset mobile phone (dummy variable)	0.52 (0.02)
Nearest transport road (in walking minutes)	31.62 (1.72)
Nearest market (in walking minutes)	74.43 (2.12)
Nearest urban center (in walking minutes)	109.29 (3.23)
Nearest primary school (in walking minutes)	36.97 (1.61)
Nearest secondary school (in walking minutes)	92.09 (2.51)
Nearest Health Care Centre (in walking minutes)	74.96 (1.96)
Nearest Hospital (in walking minutes)	152.60 (7.15)

Standard deviations are in parenthesis

Table A10.2 illustrates the results from the first-stage analysis.

Table A10.2: Multinomial logit model using Heckman model

	Received Pension		Received Other Transfer	
Variable	Coefficient	Standard error	Coefficient	Standard error
Household Characteristics				
Household Head is between 25-54yrs (1=yes)	-0.051	4.281	-0.204	2.813
Household Head is over 55 years old (1=yes)	1.894	4.309	0.613	2.860
Household has children under 5yrs (1=yes)	0.271	0.265	0.294*	0.162
Household has children between 5-14yrs (1=yes)	-0.584**	0.281	-0.083	0.299
Human Capital				
HH members 15yrs&over with primary level education (1=yes)	-0.618**	0.296	-0.482**	0.213
HH members 15yrs&over with pre-secondary education (1=yes)	-0.202	0.318	-0.340	0.301

HH members 15yrs&over with secondary education (1=yes)	0.372**	0.189	0.628**	0.288
HH members 15yrs&over with higher education (1=yes)	-0.484	0.568	-0.374	0.342
Dummy Area	0.388	0.555	0.991*	0.540
logPerCapCsmp	-0.115	0.149	-0.067	0.182
Region2	-0.001	0.395	0.611	0.496
Region3	0.846	0.526	0.292	0.492
IVAssetMPhone	0.193	0.301	0.214	0.284
logNearestTpRoad	0.080	0.206	-0.139	0.291
logNearestUrbanCentre	0.188	0.328	0.209	0.320
logNearestPrimSch	-0.217	0.329	-0.078	0.393
logNearestSecSch	0.039	0.278	0.006	0.328
logNearestHCCentre	0.160	0.418	0.140	0.390
logNearestHospital	0.049	0.385	-0.206	0.298
o._cons	-2.615	4.470	-1.906	2.968

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

Tables A10.3-A10.5 show the results from the second stage equation for the seven expenditure categories for each group of households: households with no transfer (Table A10.1), households receiving the government pension (Table A10.2) and households receiving another form of internal transfer (Table A10.3).

Using the coefficients from Tables A10.3-A10.5 the estimated marginal budget shares for expenditure categories[104] were calculated to identify at the margin how the receipt of transfers affects the expenditure patterns of households. Table A10.6 reports the marginal budget shares while also comparing them to the counterfactual of what would have happened if these households had not received a transfer.

The coefficients carry the same sign and approximate point estimate as those calculated in Chapter 6 where the instrumental variables included migration variables.

[104] For a detailed breakdown of expenditure categories refer to Table 4.1, note that housing expenditure was removed from the non-food expenditure category and treated as a variable on its own.

Table A10.3: Household expenditure estimates for households not receiving a transfer

Variable	Durables		Food		Utilities		Health		Education		Non-Food		Housing	
	coef	**se**	**coef**	**Se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**
reciExpTotal	23.763	67.841	-227.884	569.262	54.573	281.926	-3.215	32.915	55.923	56.926	-47.614	383.507	144.454	159.724
logExpTotal	-0.007	0.006	-0.188***	0.029	0.061*	0.034	0.005	0.003	0.003	0.007	0.032	0.036	0.095**	0.046
HHH25to54overExpTotal	-22.074	70.208	133.685	573.430	-44.240	277.652	-2.590	30.470	-30.827	52.947	17.827	354.291	-51.780	127.801
HHH25to54	0.029	0.026	-0.169	0.264	0.012	0.107	0.010	0.013	0.032	0.022	0.042	0.186	0.044	0.051
HHHover55overExpTotal	-34.529	72.016	121.550	559.208	-9.632	272.375	-2.429	33.225	-49.137	54.714	44.113	362.387	-69.936	136.295
HHHover55	0.008	0.038	-0.057	0.267	-0.045	0.120	0.010	0.020	0.000	0.039	0.021	0.195	0.063	0.074
Under5yrsoverExpTotal	-30.051*	16.226	63.491	44.292	-3.934	22.871	-4.658	9.721	-43.326**	18.414	16.242	54.347	2.235	26.399
Under5yrs	0.008	0.008	-0.019	0.039	0.014	0.021	-0.003	0.007	-0.007	0.016	0.006	0.037	0.002	0.016
from5to14ysover ExpTotal	10.584	13.967	-98.661**	44.828	49.048	33.934	9.094	9.666	4.278	20.498	-5.226	67.513	30.883	32.154
from5to14ys	-0.007	0.012	0.063*	0.036	-0.053*	0.028	-0.008	0.008	0.022*	0.012	0.004	0.052	-0.022	0.023
Over15PrimaryoverExpTotal	-23.565	16.920	110.620*	59.757	42.947	41.524	0.811	9.313	7.160	29.217	-128.999	83.546	-8.974	39.816
Over15Primary	0.031**	0.012	-0.144***	0.036	-0.007	0.028	0.004	0.008	0.023	0.015	0.101***	0.036	-0.009	0.027
Over15PreSecoverExpTotal	40.192***	14.577	-42.761	74.866	-34.899	38.291	-9.720	14.273	-6.092	30.377	44.359	71.870	8.921	43.034
Over15PreSec	-0.008	0.008	-0.023	0.050	0.029	0.027	0.012	0.011	0.019	0.016	-0.009	0.043	-0.020	0.030
Over15SecoverExpTotal	-61.038**	28.411	-18.929	88.703	59.462	51.624	11.114	16.769	1.334	18.544	-36.915	78.816	44.972	45.025
Over15Sec	0.019	0.014	0.039	0.054	-0.022	0.026	-0.007	0.014	-0.033**	0.013	0.004	0.048	0.000	0.017
Over15higherEdoverExpTotal	9.308	40.520	-25.402	136.059	35.242	78.783	40.651	36.928	58.219	76.733	-116.781	108.434	-1.237	108.507
Over15higherEd	0.009	0.014	-0.104	0.079	-0.028	0.039	-0.018	0.015	0.014	0.031	0.134**	0.062	-0.006	0.064
DummyArea	-0.026*	0.014	0.096**	0.044	-0.030	0.020	-0.003	0.007	-0.021	0.020	-0.004	0.045	-0.012	0.032
Region2	-0.028*	0.017	0.097**	0.048	-0.010	0.021	-0.009**	0.004	-0.042***	0.013	-0.028	0.028	0.020	0.019
Region3	-0.021*	0.012	0.109**	0.044	-0.024	0.020	0.004	0.006	-0.034**	0.016	-0.053	0.036	0.018	0.025
lambdaNPPension_logIVs	0.015	0.056	0.002	0.159	-0.022	0.085	0.006	0.019	0.014	0.039	0.043	0.119	-0.058	0.080
lambdaNPOther_logIVs	-0.062	0.062	0.171	0.183	0.003	0.077	-0.018	0.017	-0.077*	0.042	-0.113	0.106	0.097	0.069
_cons	0.037	0.053	2.388***	0.325	-0.406	0.310	-0.034	0.036	-0.050	0.068	-0.152	0.459	-0.782*	0.402

***p<0.01, **p<0.05, *p<0.1

Table A10.4: Household expenditure estimates for households receiving a government solidarity pension

Variable	Durables		Food		Utilities		Health		Education		Non-Food		Housing	
	coef	**se**	**coef**	**Se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**
reciExpTotal	30.033	68.363	-660.762**	324.332	28.673	77.188	155.909	121.657	188.786	116.733	120.455	292.674	136.905	108.475
logExpTotal	0.006	0.008	-0.124***	0.041	0.016	0.030	0.010	0.013	0.011	0.037	0.076	0.048	0.005	0.020
HHH25to54overExpTotal	-5.324	63.070	631.286**	319.169	-25.052	59.171	-112.380	102.629	-215.910**	86.597	-154.793	274.611	-117.828	92.061
HHH25to54	-0.016	0.038	-0.400**	0.176	0.017	0.027	0.053	0.055	0.110***	0.040	0.185	0.138	0.051	0.044
HHHover55overExpTotal	-31.158	66.987	615.334*	321.841	-15.619	61.399	-138.152	107.417	-198.628**	99.870	-84.622	281.197	-147.157	113.254
HHHover55	-0.013	0.044	-0.369	0.226	-0.005	0.044	0.002	0.089	0.082	0.068	0.172	0.165	0.131	0.086
Under5yrsoverExpTotal	-28.240*	14.524	207.363***	72.224	-18.048	28.394	-6.619	29.557	35.231	52.454	-220.303***	47.624	30.617	29.563
Under5yrs	0.008	0.007	-0.032	0.056	0.005	0.018	-0.007	0.018	-0.037	0.028	0.105***	0.038	-0.041*	0.021
from5to14ysover ExpTotal	-3.236	8.631	-72.551	108.241	-7.260	22.305	-32.921***	11.185	51.677	37.967	105.701	92.676	-41.410*	22.831
from5to14ys	0.004	0.008	-0.026	0.085	0.025**	0.011	0.032*	0.018	-0.017	0.019	-0.033	0.075	0.016	0.022
Over15PrimaryoverExpTotal	13.181	29.275	-272.403	250.902	138.086**	66.222	3.196	142.085	-83.579	130.140	203.365**	97.549	-1.844	32.922
Over15Primary	-0.008	0.015	0.107	0.128	-0.071*	0.038	0.044	0.046	0.058	0.085	-0.089	0.057	-0.041	0.027
Over15PreSecoverExpTotal	-39.451	34.042	-180.435	380.592	64.455	92.389	122.313	94.950	235.853	146.430	-160.722	363.648	-42.012	91.263
Over15PreSec	0.014	0.015	0.098	0.148	-0.036	0.034	-0.031	0.028	-0.106*	0.055	0.068	0.150	-0.008	0.039
Over15SecoverExpTotal	5.514	22.760	-18.877	147.590	-1.628	52.140	34.417	44.369	5.189	78.838	-16.792	64.755	-7.824	38.030
Over15Sec	-0.007	0.016	-0.036	0.077	0.023	0.023	-0.020	0.019	-0.006	0.045	0.018	0.047	0.028	0.018
Over15higherEdoverExpTotal	158.426**	77.763	87.587	383.241	-63.009	49.724	108.965	104.744	-430.044*	230.573	120.298	211.089	17.778	115.583
Over15higherEd	-0.049**	0.023	-0.168	0.152	0.012	0.027	-0.015	0.033	0.249**	0.102	-0.003	0.075	-0.026	0.033
DummyArea	0.003	0.015	-0.069	0.071	0.022	0.017	-0.006	0.020	0.035	0.025	-0.023	0.072	0.037	0.024
Region2	-0.013	0.012	0.040	0.055	0.029**	0.014	-0.033*	0.018	-0.013	0.025	0.002	0.045	-0.013	0.012
Region3	-0.008	0.011	-0.029	0.057	0.016	0.016	-0.039	0.026	0.007	0.033	0.004	0.051	0.048**	0.021
lambdaNPPension_logIVs	0.038	0.054	-0.024	0.192	-0.079	0.055	0.132	0.082	0.072	0.112	-0.100	0.172	-0.039	0.071
lambdaNPOther_logIVs	-0.047	0.058	0.052	0.203	0.100*	0.053	-0.103	0.069	-0.063	0.094	0.065	0.195	-0.005	0.066
_cons	-0.027	0.106	2.223***	0.511	-0.125	0.291	-0.004	0.225	-0.147	0.341	-0.697	0.474	-0.224	0.197

***p<0.01, **p<0.05, *p<0.1

Table A10.5: Household expenditure estimates for households receiving other internal transfers

Variable	Durables		Food		Utilities		Health		Education		Non-Food		Housing	
	coef	**se**	**coef**	**Se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**	**coef**	**se**
reciExpTotal	-61.204	112.296	1,261.747	974.596	-27.182	287.810	-183.211	154.849	-196.298	162.424	304.324	495.963	-1,098.175	1,251.684
logExpTotal	0.018	0.017	-0.173**	0.074	0.013	0.021	-0.001	0.011	-0.031	0.029	0.113	0.071	0.060	0.038
HHH25to54overExpTotal	34.620	127.123	-1,467.410	909.168	88.753	296.201	214.802	158.990	130.422	144.732	-204.997	417.706	1,203.809	1,259.379
HHH25to54	0.007	0.043	0.478	0.308	-0.033	0.087	-0.024	0.044	-0.038	0.053	0.173	0.119	-0.564	0.393
HHHover55overExpTotal	15.284	126.268	-1,598.907*	957.884	118.997	294.034	215.527	152.378	159.436	140.310	-143.869	391.544	1,233.531	1,265.651
HHHover55	0.015	0.050	0.501	0.344	-0.030	0.097	-0.051	0.045	-0.054	0.073	0.249	0.176	-0.628	0.426
Under5yrsoverExpTotal	-7.519	13.775	72.311	112.929	27.059	27.099	-18.215	16.103	-44.804	36.008	-40.663	65.941	11.832	50.261
Under5yrs	0.011	0.009	-0.008	0.083	-0.018	0.014	-0.006	0.011	-0.001	0.024	0.056	0.060	-0.034	0.041
from5to14ysover ExpTotal	54.517	52.100	301.383	293.763	-92.392	76.934	-43.660	39.169	-10.673	65.578	-116.624	150.837	-92.550	86.715
from5to14ys	-0.018	0.021	-0.124	0.120	0.020	0.029	0.011	0.014	0.017	0.038	0.057	0.069	0.037	0.043
Over15PrimaryoverExpTotal	109.497	78.701	-106.489	466.072	22.435	90.340	-17.046	44.937	107.276	145.329	-43.629	197.555	-72.044	215.111
Over15Primary	-0.041	0.032	0.046	0.146	-0.038	0.026	0.017	0.017	-0.023	0.053	-0.020	0.082	0.058	0.073
Over15PreSecoverExpTotal	27.584	142.097	-477.366	400.885	-43.896	118.642	223.743	146.507	-73.322	163.185	373.447	264.345	-30.189	254.441
Over15PreSec	-0.000	0.051	0.067	0.154	0.026	0.042	-0.061	0.040	0.035	0.062	-0.104	0.097	0.037	0.100
Over15SecoverExpTotal	19.297	42.517	35.032	185.051	-67.256	79.165	-66.224	44.362	-36.224	64.619	129.845	122.088	-14.469	122.679
Over15Sec	0.009	0.014	0.054	0.086	0.011	0.031	-0.006	0.016	0.001	0.020	-0.031	0.057	-0.037	0.080
Over15higherEdoverExpTotal	133.037	111.137	-414.861	911.631	152.038	196.800	101.270	176.376	-4.531	193.796	136.995	898.413	-103.947	228.720
Over15higherEd	-0.043	0.034	0.032	0.272	-0.031	0.052	-0.000	0.045	0.032	0.060	-0.049	0.252	0.059	0.086
DummyArea	-0.019	0.024	0.057	0.133	0.003	0.029	-0.025	0.019	0.038	0.037	0.011	0.074	-0.065	0.060
Region2	-0.011	0.011	0.099	0.089	0.014	0.011	-0.037***	0.013	-0.031	0.034	-0.005	0.047	-0.029	0.021
Region3	-0.019	0.015	0.015	0.112	0.018	0.020	-0.033***	0.012	-0.057	0.039	0.051	0.069	0.024	0.050
lambdaNPPension_logIVs	-0.009	0.042	0.091	0.227	-0.038	0.058	0.063*	0.035	0.015	0.085	-0.200	0.181	0.079	0.163
lambdaNPOther_logIVs	0.007	0.042	-0.195	0.250	0.063	0.062	-0.035	0.033	-0.017	0.088	0.197	0.192	-0.019	0.155
_cons	-0.115	0.152	1.379*	0.838	-0.013	0.213	0.174	0.144	0.345	0.303	-1.081	0.720	0.311	0.528

Table A10.6: Marginal budget shares on expenditure and average treatment effects (ATT) by transfer category

	No Transfer	Pension Received				Other Internal Transfer Received			
Expenditure Category	Estimated Marginal Budget Share	Estimated Marginal Budget Share	Counterfactual Marginal Budget Share	Average Treatment Effect (ATT)	Per cent difference[b] (received public transfer vs did not receive)	Estimated Marginal Budget Share	Counterfactual Marginal Budget Share	Average Treatment Effect (ATT)	Per cent difference[b] (received other transfer vs did not receive)
Durables	0.017	0.013	-0.064	0.077***(0.003)	-120%	0.019	-0.058	0.077***(0.008)	-133%
Food	0.553	0.614	0.824	0.211***(0.017)	256%	0.514	0.785	-0.0271***(0.026)	-136%
Utilities	0.078	0.048	0.056	-0.007 (0.005)	-125%	0.053	0.069	-0.016***(0.005)	-23%
Health	0.019	0.014	0.001	0.014***(0.004)	140%	0.013	0.003	0.017***(0.005)	567%
Education	0.034	0.042	-0.077	0.119***(0.016)	-154%	0.048	-0.068	0.116***(0.011)	171%
Non Food	0.256	0.231	0.102	0.128***(0.009)	125%	0.250	0.124	0.126***(0.020)	102%
Housing	0.052	0.038	0.169	-0.131***(0.010)	-345%	0.090	0.162	-0.072***(0.020)	-44%
TOTAL	1.01	1.00	1.01			0.99	1.01		

a. Figures in parenthesis are standard errors clustered by sub-district.
b. Per cent difference calculated by dividing ATT by the value of counterfactual Marginal Budget Share.
c. Significant at the 0.05 level. ** Significant at the 0.01 level. ***Significant at the 0.001 level.

However, when the average treatment effects are recalculated on the new coefficients four out of seven of the ATTs under pensions received maintain the same sign and significance, and five out of seven of the ATTs under 'other internal transfers' maintain the same sign and level of significance. All point estimates are different in magnitude from those reported in Chapter 6 (Table 6.8), with higher values reported in the majority of coefficients in table A10.6. This suggests that the use of migration instrumental variables could generate an underestimate. Alternatively it could indicate that the instrumental variables are not strong enough to produce robust estimates.

Estimations should therefore be viewed with caution, without alternative instruments it is likely estimates are affected by endogeniety bias. In order to accurately assess the direction and magnitude of the bias, panel data is required for the analysis. Unfortunately for Timor-Leste panel data is not available and therefore we must accept and acknowledge the limitations of the analysis.

The strength of this thesis is the addition of qualitative data that aids in the assessment of the feasibility of quantitative results. Qualitative data supports the findings of increased expenditure on education related expenditures, food and healthcare.

Appendix Eleven: Published Paper

Judy Routamaa <jroutamaa@gmail.com>
To: Tambri Housen <tambrihousen@me.com>

Re: Re copyright request for paper ID PSP-11-0057.R2
Dear Tambri,

Sorry for the delay in replying to your request. The main editor has said that it is fine for you to include a copy of your published paper in your Doctoral Thesis. Thank you for asking.

Kind regards,

Mrs Judy Routamaa
Population, Space and Place
jroutamaa@gmail.com

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A Systematic Review on the Impact of Internal Remittances on Poverty and Consumption in Developing Countries: Implications for Policy

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ABSTRACT

This paper reviews the current literature on the usage and impact of internal remittances on recipient households in low-income countries. A systematic review was conducted using six electronic and four informal databases. Using narrative synthesis, we reviewed 18 studies. The results of the review provide strong evidence revealing that internal migration is an important poverty reduction strategy with remittances having the greatest impact on the poorest households. Internal migrant remittances serve not only to improve livelihood by decreasing the household depth and severity of poverty but also increase household investment in education and housing. This review proposes recommendations for policy and future internal remittances research. Copyright © 2012 John Wiley & Sons, Ltd.

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Keywords: remittances, migration, poverty, consumption, development, poverty reduction, policy

INTRODUCTION

International remittances are recognised as an important component of gross domestic product in nations with high out-migration (Ekanayake and Mihalis, 2008). The potential to harness these transfers for development is increasingly debated and discussed in international migration and economic literature (World Bank, 2005b, 2008; Giuliano and Ruiz-Arranz, 2008). Although there is a growing body of research on international migration and remittances, which are estimated to globally amount to nearly $325 billion dollars for developing countries (World Bank, 2011), there remains limited research on internal remittances. There is also a paucity of research on the impact of remittances on household livelihood, human capital, and poverty.

Many low-income countries lack human capital, especially a highly skilled labour force or qualified professionals, and therefore, the capacity to migrate internationally is limited. Despite the strong demand for low-skilled labour in many developed countries, migration policies tend to favour the educated and professionally qualified. High costs associated with migrating internationally, acquisition of necessary documents, meeting administrative requirements, and transport and resettlement costs in the destination country result in further barriers for poor households (UNESCAP, 2003; de Haas, 2007). Households in low-income countries, therefore, are more likely to produce internal migrants (World Bank, 2006).

Internal remittances are often of substantially smaller monetary value than international remittances but in many rural communities in low-income nations, even small amounts of cash could have high utility and prove important in rural development and poverty reduction (Deshingkar and Farrington, 2006; Deshingkar *et al*., 2006). The extent that this occurs remains poorly understood, largely because of incomplete and unreliable data on internal migration in developing countries.

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On a national level in low-income countries, the impact of internal migration is recognised as more important in terms of people movement, impact on labour markets, and remittance flows (Deshingkar, 2008; UNDP, 2009). An estimated 740 million people, representing over 12% of the world's total population today, are internal migrants (UNDP, 2009).

Systematic reviews are a well-established means of informing policies and practice decisions in health but are only recently being explored by social sciences as a form of synthesising findings from research to bring together current knowledge to inform policy (Petticrew and Roberts, 2006; CRD, 2009). A narrative synthesis, a form of systematic review, identifies and explores available literature drawing evidence from research using a range of methods to provide an overall picture of current knowledge. This involves systematically extracting, checking, and narratively summarising information on methods and findings (Petticrew and Roberts, 2006).

The primary aim of this systematic review is to identify econometric and empirical studies on the impact of *internal* migrant remittances on recipient households in order to collate current knowledge on the impact of remittances on household consumption and poverty in low-income countries. This aim is further separated into two specific objectives. The first objective is to compare and contrast the estimation methods used and the results of econometric and empirical research. By using the summary of reviewed research, the second objective is to outline the extent to which internal remittances effects poverty and consumption of receiving households and to propose policy recommendations that could be used by developing countries in their migration policies.

A lack of a standard approach to migration and remittance analysis has meant that econometric and statistical methods vary considerably across studies. A direct result of different methodological approaches and diverse research contexts is that the literature on the impact of migration and remittances on poverty and consumption report contradictory findings. It is therefore necessary to provide a brief outline of methodological approaches and challenges associated with measuring the impact of remittances.

Methodological Challenges

Four methodological challenges are present in empirical studies on migration and remittances. These include selection bias, omitted variables, reverse causality, and simultaneity (Deaton, 1997; McKenzie and Sasin, 2007). Selection bias occurs when household characteristics determine propensity to migrate (e.g. those with more education and income may be more likely to send a migrant). Migrant and remittance selectivity is complicated by differences in observable and unobservable characteristics of migrants and households. A simple comparison of migrant and non-migrant households could introduce selection bias. Omitted variable bias arises when households send migrants and receive remittances on the basis of unobservable characteristics (Deaton, 1997; McKenzie and Sasin, 2007).

Reverse causality is of particular importance when drawing conclusions on the impact of remittances on poverty. The relationship between remittances and poverty may not be unidirectional. Empirical studies have shown that international remittances reduce poverty in low-income countries (Adams and Page, 2005; Acosta *et al*., 2007), but this cannot be concluded without also considering that the level of poverty may also influence the amount of remittance sent. Simultaneity occurs when decisions on migration are made at the same time as other decisions; therefore, perceived 'causes' of migration may also 'cause' other household patterns of consumption and education (Adams, 2005; McKenzie and Sasin, 2007).

Although it is not the intention of this review to provide an in-depth analysis of the various econometric models used, it is important to understand the econometric technique adopted by the majority of studies in this review to estimate household income and/or consumption without remittances. Remittances are a substitute for migrant earnings had they not left the household; therefore, some researchers postulate that they cannot be treated as exogenous additions to household income. An increasingly common method of addressing the endogeneity of remittances is the construction of an estimated counterfactual[1] income/consumption in the hypothetical no migration/no remittance scenario. A counterfactual estimate is constructed by treating households with no remittances as a random draw of the population and predicting per capita household income/consumption in the

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excluding remittance situation. This estimated counterfactual income removes external effects of migration on household income whilst also including an imputation for the income of migrants had they stayed in the household. The predicted incomes of migrant households are then used to estimate the poverty and inequality measures in the counterfactual of no-migration/no-remittances. (Adams, 1989)

In the studies conducted in Ghana (Adams, 2006; Adams *et al.*, 2008a), Adams, recognising the heterogeneity of households, addressed the possibility of bias introduced by the systematic differences between household unobserved characteristics by utilising the multinomial logit selection model (Lee, 1983) to determine the extent of selection bias. This model is based on two equations, the first being a choice equation that examines migration and the receipt of remittances and the second being an income/consumption equation measuring the household income/consumption as a function of the explanatory variable, in this case the receipt of remittances. Potential complications arise in this second equation where the dependent variable (income/consumption) is observable and continuous, as both equations must be considered simultaneously to limit selectivity bias. (Adams, 2006; Adams *et al.*, 2008a, b)

This two-stage procedure adopted by Adams, incorporating the selectivity term derived from the multinomial logit estimation, allows for estimation of the second equation by ordinary least squares (OLS) resulting in reliable coefficient estimates. At least one independent variable must be present in the first-stage choice function that is not in the second income/consumption function. Variables in the first-stage equation must be exogenous to migration and the receipt of remittances, whereas the variable in the second equation must be exogenous to household income/expenditure (Adams, 2006). In this equation, a finding of 'no selection bias' allowed Adams to construct counterfactual income/expenditure estimates (Adams *et al.*, 2008a). The difficulty arises in selecting a truly exogenous variable to the receipt of remittances; these variables are known as instrumental variables (IVs) (Deaton, 1997; Adams *et al.*, 2008a). Various instruments have been used across studies but remain specific to the particular research context. Examples of IVs used in empirical and econometric research are provided in the results section of this paper.

This paper is presented in five further sections. The next section describes the methods used in the review and includes a systematic framework of the review process with exclusion and inclusion criteria. The third section presents the results, providing an outline of the final 18 studies included in this review. The outline presented in Table 1 includes a brief overview of the studies, authors, location, sample, aims, method, and findings. A discussion of the findings including strengths and weaknesses, highlighting the differences in methods, is presented in the fourth section. The final section discusses the findings in terms of importance and relevance to policy and summarises the main conclusions.

METHODS

A systematic literature search was conducted between February and June 2010, with a second modified search undertaken in February 2011 to identify recent papers. The search terms aimed to review the impact of *internal* remittances on receiving households. Although there are numerous studies on determinants of migration and motives for remitting, the results were limited to the inclusion of studies examining the use and impact of internal remittances on origin households. The search terms included the following: migration, movement, rural, urban, internal, seasonal, circular, temporal, remittances, informal transfers, private transfers, education, schooling, human capital, study, studies, empirical, econometric, household, survey, health, well-being, livelihood, living, income, employment, work, job, labour, poverty, welfare, consumption, expenditure, spend, use, savings, investment, social, and impact.

The search strategies were implemented on a range of databases to identify references from the fields of economics, social science, education, and health. Informal databases were also used to identify informal reports and unpublished articles. Searches were restricted to English language papers published between 1990 – current and references were managed using the bibliographic software, Endnote X3.

The following electronic databases were searched: Econlit via the Ovid interface, Science Direct, Proquest Social Science Journals, Proquest ABI/INFORM Global, and Business Source Premier via the EBSCO interface. The Econlit

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search strategy used is included in APPENDIX A. This strategy was translated as necessary for the other databases searched.[2] Informal databases were also used to identify reports and unpublished articles: The World Bank Working Paper Series, International Monetary Fund Working Paper Series, International Organization for Migration Publications, and Overseas Development Institute Publications. Citation snowballing from initial journal articles enabled identification of other relevant reports and articles.

The inclusion criteria required that the dependent variables were *internal* migrant remittances, developing or resource poor context and remittance impact and remittance use primary studies. Figure 1 shows the systematic framework used, alongside pre-determined exclusion criteria, to guide acceptance/rejection of papers at various stages of the review process. Remittances included both monetary transfers and in-kind transfers. Both large and small-scale empirical studies were included. Where studies did not provide enough detail to identify research methods, authors were contacted for further information. Where greater detail was not obtained, the study was excluded.

Data on study design, analysis, results, and conclusions were extracted for each included study following a set tabular format with a separate assessment form for the evaluation of quality.[3] The quality assessment form was constructed using criteria specific to econometric study designs and identified whether the research addressed issues of endogeneity, had taken measures to avoid various biases, and discussed choice of analytical techniques. Studies were also assessed on whether the findings fit in with what is known or not known about internal remittances, whether findings were adequately described and generalizable, whether conclusions were clearly related to the data, and if appropriate policy recommendations were provided.

RESULTS

A total of 3738 references were identified during the electronic database searches. Following the review of titles, 1130 references were excluded on the basis of irrelevance. A total of 1304 references were included for the initial review. The removal of duplicates resulted in a further 153 references being excluded. Abstracts were then reviewed and evaluated according to the exclusion criteria outlined in Figure 1. A further four studies from grey literature and 7 un-sourced studies were included. A total of 163 studies were further considered for more detailed examination. Eighteen studies met the inclusion criteria for the review and were subject to the data extraction table and quality assessment tool. A summary of included studies is provided in Table 1 and includes the study region, the country where study was conducted, the method used, and an overview of findings.

OVERVIEW OF FINDINGS

Internal Migration and Remittances

The studies included in this review were undertaken in 11 countries across four continents. The context in which the research studies took place has pronounced socio-cultural differences, but a facet all studies shared was the movement of individuals from their household of origin to other regions in a specific low-income country. The flow of remittances generated by this movement was shown to have a positive impact on recipient households.

Sample

Five studies (Osaki, 2003; Taylor *et al*., 2003; Du *et al*., 2005; de Brauw and Harigaya, 2007; Zhu and Luo, 2010) classified the sample to general migrant versus non-migrant populations, with households participating in migration representing between 10.6% (de Brauw and Harigaya, 2007) and 61.3% (Zhu and Luo, 2010) of sample households. Other studies in the review, either recognising that a large number of households without migrants also receive remittances or due to lack of migration data, chose to classify the study population according to whether or not they had received remittances.

Remittance receiving households represented between 21.9% (Castaldo and Reilly, 2007) and 99% (Odozi *et al*., 2010) of study populations. Eight studies, using nationally representative samples, showed internal remittance receiving households (InRRHH) represented a significantly larger portion of the sample than international remittance receiving households (IntlRRHH). In Guatemala, InRRHH constituted 14.6% of the sample, whereas IntlRRHH represented only 8.1% (Adams, 2004; Adams and Cuecuecha, 2010); in

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Ghana, internal and international RRHH represented 35.6% and 8.1% in 2006 and 29.8% and 5.4% in 2008, respectively (Adams, 2006; Adams *et al*., 2008a, 2008b). In Vietnam, 78.2% and 5.9% of the study population in 2002 was made up of InRRHH and IntlRRHH, respectively, whereas in 2004, this increased to 86.3% InRRHH and 7.1% IntlRRHH (Cuong, 2009). The Nigerian study sample was made up almost entirely of remittance receiving households, 94% InRRHH and 5% IntlRRHH (Odozi *et al*., 2010). The two exceptions were Albania, where internal and international RRHH represented 3.3% and 17% of the study sample, respectively (Castaldo and Reilly, 2007), and Nepal where the proportion of IntlRRHH in 2004 surpassed those of InRRHH at 17.7% and 13.9%, respectively, a surprising turnaround from the 1996 figures of 10.6% IntlRRHH and 12.3% InRRHH (Lokshin *et al*., 2010). Internal remittances were shown to have a much greater coverage in 16 out of the 18 studies included in this review.

Remittances and income distribution

Remittances can be a significant source of household income and consumption, especially among the poorer households. A large share of households receiving remittances was consistently found in the lower end of the income distribution groups. Ranking all study households in Ghana and Guatemala into decile groups on the basis of predicted per capita household expenditure, Adams (2004, 2006) noticed that although the largest share of remittance receivers were found in the eighth and ninth deciles of the expenditure distribution, a substantial share of remittance receiving households were also found in the lowest income decile.

When households in the lowest decile received an internal remittance, their expenditure increased by nearly 15% in Ghana and by over 40% in Guatemala. The effect of remittances on lowest income households in Thailand was also shown to be substantial with 85% of the poorest households reporting receiving remittances, compared with 34.2% of the wealthiest (Osaki, 2003). In China (Snyder and Chern, 2009), it was households from the middle income quartiles that were more likely to receive a remittance (40%), compared with 32% in the lowest quartile. Although Snyder and Chern (2009) indicated that the cost of migration is a barrier for poorer households, such a conclusion is difficult to sustain as households were categorised according to whether they received a remittance not whether the household participated in migration. We would like to add an important caveat; when income was further disaggregated by Snyder and Chern (2009) into the lowest and highest decile, 25% of households in the lowest 10% reported receiving a remittance. These four studies were conducted in diverse contexts, on the basis of different sample sizes; however, a common finding is that remittances do reach a significant proportion of the poorest households.

Five of the studies reported that remittances increased the mean per capita household income for internal migrant/remittance receiving households (Osaki, 2003; Taylor *et al*., 2003; Du *et al*., 2005; Cuong, 2009; Davies *et al*., 2009). Taylor *et al*. (2003) took this analysis further, examining the total effect of migration on each income source. The loss of farm labour to migration was shown to have a significant negative effect crop income, although it was felt that migrant remittances compensated for this loss. It is expected that the resultant increase in household income would have an impact on household consumption and poverty.

Remittances and consumption

The World Bank argues that in low-income contexts, income is an unreliable estimate of household welfare because of the many problems associated with defining and measuring income for those self-employed in agriculture (World Bank, 2005a). In addition, households are more often able to recall what they have spent than what they have earned, with consumption more stable than income (Deaton, 1997; World Bank, 2005a). For these reasons, some studies used expenditure data in preference to income data, although this is inconsistent across studies. Furthermore, the way consumption is measured can vary with some studies using *aggregate* consumption expenditure, others choosing *per capita* or per *adult equivalent* consumption expenditure. Re-estimation of expenditure equations by de Brauw and Harigaya (2007), found the estimated coefficient to be higher when per adult equivalent expenditure was used than the same specification using per capita expenditure. Similarly, Maitra and Ray (2003) reported a higher incidence of poverty when adult equivalent scales were used compared with the poverty incidence using per capita expenditure. Conversely, in re-estimating the average treatment

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Table 1. Summary of empirical and econometric research included in the systematic review.

Study	Location	Sample	Aim	Method	Description of findings
Africa					
Adams (2006)	Ghana	5998 nationally representative households.	To examine the impact of internal and international remittances on poverty and inequality in Ghana.	Assumes endogeneity, counterfactual expenditure estimates.	Internal and international RRHH represented 35.6% and 8.1% of the study population, respectively. Predicted mean annual per capita expenditure (excluding remittances) decreased by 0.5% for internal RRHH was increased by 14.8% for international RRHH, compared with non-RRHH. Predicted mean annual per capita expenditure (including remittances) increased by 15.0% for internal RRHH and 48.9% for international RRHH, compared with non-RRHH. Poverty headcount decreased by 2.0% when internal remittances are included in HH income and increased by 16.4% when international remittances are included in HH income compared with no remittances. The squared poverty gap decreased by 4.1% when internal remittances are included in HH income and by 34.8% when international remittances are included in HH income, compared with no remittances. The Gini coefficient increased by 3.5% with receipt of internal remittances and 2.7% with receipt of international remittances, compared with no remittances.
Adams *et al.* (2008a)	Ghana	3491 nationally representative households.	To examine the impact of internal and international remittances on poverty in Ghana.	Assumes endogeneity, counterfactual expenditure estimates with IV analysis.	Internal and international RRHH represented 29.8% and 5.4% of the study population, respectively. Poverty headcount decreased by 69.4% when internal remittances are included in HH income and increased

					by 88.2% when international remittances are included in HH income compared with no remittances. The squared poverty gap decreased by 54.4% when internal remittances are included in HH income and by 50.0% when international remittances are included in HH income, compared with no remittances. The Gini coefficient increased by 4.0% with receipt of internal remittances and 17.4% with receipt of international remittances, compared with no remittances.
Adams *et al*. (2008b)	Ghana	3491 nationally representative households.	To analyse how the receipt of internal remittances and international remittances affects the marginal spending behaviour of households.	Assumes endogeneity, regression, and IV analysis.	Internal and international RRHH represented 29.8% and 5.4% of the study population, respectively. No statistically significant difference in marginal budget shares between internal RRHH, international RRHH and non-RRHH.
Odozi *et al*. (2010)	Nigeria	1704 sub-sample from nationally representative households.	To evaluate the nature and net effect of migrant remittances on HH income inequality and poverty in Nigeria.	Assumes endogeneity, counterfactual income estimates.	Internal and international RRHH represented 94% and 5.0% of the study population, respectively. Poverty headcount decreased by 19.7% when remittances are included in HH income. The squared poverty gap decreased by 41.5% when remittances are included in HH income. The Gini coefficient decreased by 7.9% with receipt of remittances.
Maitra and Ray (2003)	South Africa	8398 nationally representative households.	To examine the behavioural and welfare impacts of public and private transfers.	Assumes endogeneity, 3SLS estimates with IV analysis.	34% and 28% of HH below poverty line receive public and private transfers, respectively.

(Continues)

Table 1. (Continued)

Study	Location	Sample	Aim	Method	Description of findings
					7.2% and 11% of HH above poverty line receive public and private transfers, respectively. Poverty headcount decreased by 8.8% when remittances are included in HH income, compared with no remittances. Households receiving private transfers spend 11.7% more on food, 13.6% more on education, 6.3% more on fuel than households not receiving a remittance.
Davies *et al.* (2009)	Malawi	5644 nationally representative households.	To assess the impact of remittances on household consumption behaviour.	Assumes exogeneity, regression analysis.	RRHH represented 22% of the sample population. MPC out of income source for MHH are the following: MPC salary = 0.331, MPC farm income = 0.484, MPC remittances = 0.066. MPC out of income source for FHH are the following: MPC salary = 0.579, MPC farm income = 0.796, MPC remittances = 0.202. For MHHH, only positive and significant MPC out of internal remittances is for education = 0.103 ($p < 0.05$). For FHHH, the MPC out of internal remittances is positive and significant for MPC education = 0.024 ($p < 0.01$) and MPC fuel = 0.025 ($p < 0.05$).
Central America					
Adams (2004)	Guatemala	7276 nationally representative households.	To analyse the impact of internal remittances and international remittances on poverty in Guatemala.	Assumes endogeneity, counterfactual expenditure estimates.	Internal and international RRHH represented 14.6% and 8.1% of the study population, respectively. Predicted mean annual per capita expenditure (excluding remittances) increased by 24.4% for internal RRHH and increased by 16.3% for

					international RRHH, compared with non-RRHH. Predicted mean annual per capita expenditure (including remittances) increased by 43.7% for internal RRHH and 46.9% for international RRHH, compared with non-RRHH. Poverty headcount decreased by 0.6% when internal remittances are included in HH expenditure and decreased by 1.1% when international remittances are included in HH expenditure compared with no remittances. The squared poverty gap decreased by 21.1% when internal remittances are included in HH expenditure and by 19.8% when international remittances are included in HH expenditure, compared with no remittances. The Gini coefficient decreased by 2.2% with receipt of internal remittances and 2.0% with receipt of international remittances, compared with no remittances.
Adams and Cuecuecha (2010)	Guatemala	7276 nationally representative households.	To compare the marginal spending behaviour of remittance receiving and non-receiving households.	Assumes endogeneity, counterfactual with ATT analysis.	Internal and international RRHH represented 14.6% and 8.1% of the study population, respectively. At the mean HH receiving internal remittances spend 377% more at the margin on education and 136% more at the margin on housing ($p < 0.01$). At the mean HH receiving internal remittances spend 194% more at the margin on education and 81% more at the margin on housing ($p < 0.01$).

(Continues)

Table 1. (Continued)

Study	Location	Sample	Aim	Method	Description of findings
Europe					
Castaldo and Reilly (2007)	Albania	2931 sub-sample of nationally representative households.	To estimate the impact of remittances (internal and international) on household expenditure behaviour.	Assumes exogeneity, regression, and Engel curves estimates.	Internal and international RRHH represented 3.3% and 17% of the study population, respectively, with 1.6% receiving both. Receipt of internal remittances is not statistically significant in any of the reported budget share equations. Receipt of international remittances decreases the average budget share of food by 4.5% whereas increasing the budget share of durables by 25% and utilities by 16%.
Asia					
Cuong (2009)	Vietnam	4008 nationally representative households.	To measure the impact of international and internal remittance on the household welfare of remittance receiving households.	Assumes endogeneity, panel data with ATT analysis.	In 2002, internal and international RRHH represented 78.2% and 5.9% of the study population; in 2004, internal and international RRHH represented 86.3% and 7.1% of the study population. Predicted mean annual per capita income increased by 6.0% (2002 and 2004) for internal RRHH and increased by 9.0% (2002) and 7.0% 2004) for international RRHH, compared with non-RRHH. Internal remittances increased per capita expenditure on food by 2.0% (2002), increased expenditure on non-food by 10.0% (2002 and 2004), and increased expenditure on health by 16.0% (2004) when compared with non-RRHH ($p < 0.01$).
de Brauw and Harigaya (2007)	Vietnam	3492 nationally representative households.	To explore whether seasonal migration increased living standards in Vietnam during the 1990s.	Assumes endogeneity, panel data with regression, and IV analysis.	HH with at least one migrant represented 10.6% of the study population. Predicted mean annual per capita expenditure increased by 5.2% for migrant HH when compared with non-migrant HH.

					Poverty headcount decreased by 3.3% for migrant HH when compared with non-migrant HH. Inequality was not affected by migration.
Du *et al*. (2005)	China	290 households, a representative sample from four counties.	To examine the poor migrate and whether migration helps the poor.	Assumes endogeneity, panel data with regression, and IV analysis.	In 1997, HH with at least one migrant represented 23.0% of the study population. In 2001, HH with at least one migrant represented 26.4% of the study population. Predicted mean annual per capita income increased by 13.1% for migrant HH when compared with non-migrant HH. Poverty headcount decreased by 1.1% for migrant HH when compared with non-migrant HH.
Zhu and Luo (2010)	China	1208 rural households, quasi-random provincial sample.	To examine the impact of rural–urban migration on rural poverty and inequality in a mountainous area of Hubei province, China.	Assumes endogeneity, counterfactual with IV analysis.	HH with at least one migrant represented 61.3% of the study population. Predicted mean annual per capita expenditure increased by 19.3% for migrant HH when compared with no migration. Poverty headcount decreased by 14.7% for migrant HH when compared with no migration. Squared poverty gap decreased by 4.4% for migrant HH when compared with no migration. The Gini coefficient decreased by 18.5% with migration, when compared with no migration.
Snyder and Chern (2009)	China	9840 households, quasi-random provincial sample.	To evaluate impact of remittance income on rural household in China.	Assumes exogeneity, regression analysis.	Transfer RRHH represented 7% and wage RRHH represented 38% of the sample population.

(Continues)

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Table 1. (Continued)

Study	Location	Sample	Aim	Method	Description of findings
					The MPC out of transfer remittances is significant ($p < 0.05$) for MPC total living = 0.18, MPC non-food = 0.17, and MPC health = 0.07 ($p < 0.01$). The MPC out of wage remittances is significant ($p < 0.01$) for MPC total living = 0.31, MPC non-food = 0.23, MPC food = 0.08, MPC residence = 0.11, and MPC health = 0.01 ($p < 0.10$). The MPC out of local wage is significant ($p < 0.01$) for MPC total living = 0.47, MPC non-food = 0.35, MPC food = 0.12, MPC residence = 0.15, and MPC health = 0.02.
Taylor *et al*. (2003)	China	787 households from provincial sample.	To measure effects of migration on household income sources.	Assumes endogeneity 3SLS and IV analysis.	HH with at least one migrant represent 17% of the study population. Per capita income increased by between 16% and 43% for migrant HH when compared with no migration, although crop income falls significantly.
Quisumbing and McNiven (2010)	Philippines	295 households from a panel sample.	To investigate the impact of migration and remittances on asset holdings, consumption, expenditures, and credit constraint status of the household in origin communities.	Assumes endogeneity, panel data and IV analysis.	RRHH represent 62% of the study population. Remittance income increases expenditure on housing and consumer durables by 5.1%, total non-land assets by 12.7%, total expenditure (per adult equivalent) by 8.9%, food by 1.1%, education by 2.3%, and family events by 1.3%. Remittances shown to have no impact on current credit constraints.
Osaki (2003)	Thailand	7537 nationally representative households. Sub-sample 2258 migrant households.	To examine the significance of selected socio-economic and demographic factors associated with remittance behaviour in Thailand as characterised by the	Assumes exogeneity, regression analysis.	HH with at least one migrant represent 19.6% of the study population. Of the sub-sample of migrant HH, 25.2% reported receiving remittances.

			propensity to remit and amount remitted.		Predicted mean annual per capita income increased by 26.2% for RRHH when compared with non-RRHH. Top three recorded remittance use priorities were 84% of respondents reported using remittances for daily living costs, 4% reported spending on investment, and 4% reported spending remittances income on education. The Gini coefficient decreased by 8.9% with remittances, when compared with no remittances.
Lokshin *et al*. (2010)	Nepal	1996–3373 2004–3912 Nationally representative households. 1160 panel sample.	To measure the impact on poverty in Nepal of local and international migration for work.	Assumes endogeneity, panel data with IV analysis.	In 1996, internal and international RRHH represented 12.3% and 10.6% of the study population, respectively. In 2004, internal and international RRHH represented 13.9% and 17.7% of the study population, respectively. Predicted mean annual per capita expenditure increased by 0.45% for internal RRHH and 7.0% for international RRHH, compared with non-RRHH. Poverty headcount decreased by 23.4% when internal remittances are included in HH expenditure and decreased by 2.1% when international remittances are included in HH expenditure compared with no remittances.

RRHH, remittance receiving household; IV, instrumental variable; 3SLS, three-stage least squares; MPC, marginal propensity to consume; MHHH, male-headed household; FHHH, female-headed household; ATT, the average treatment effects on the treated.

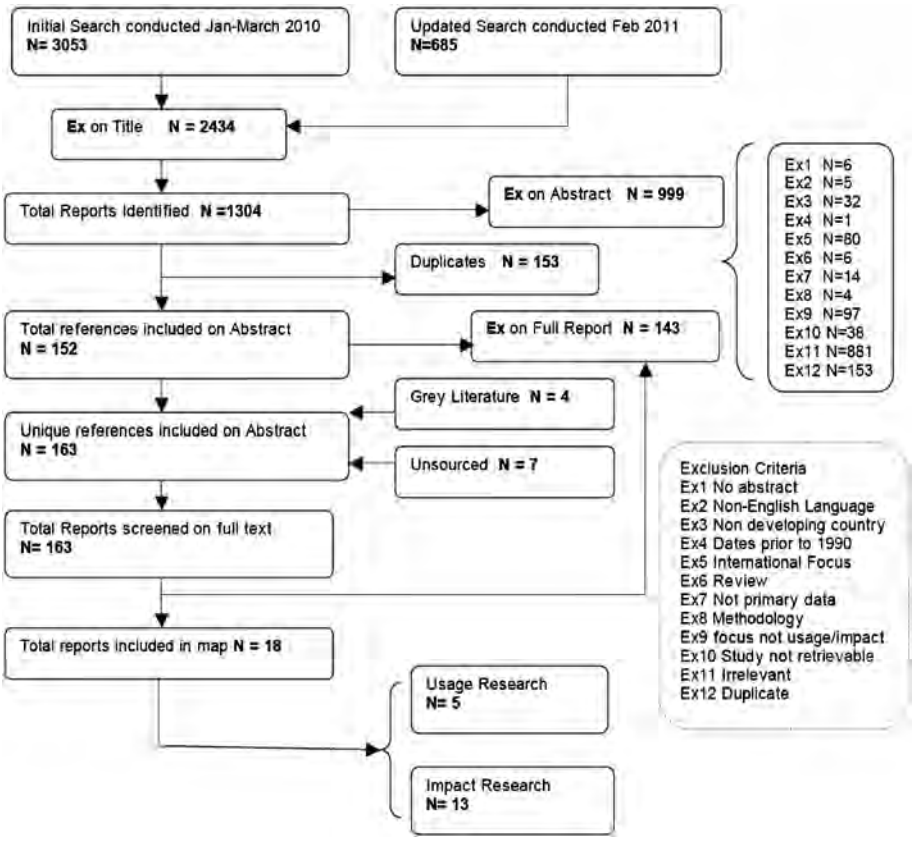

Figure 1. Systematic framework of the review process.

effect on the treated (ATT) on marginal budget shares using adult equivalent scales, Adams and Cuecuecha (2010) found per capita household expenditure generated an overestimation.

Internal remittances were found to increase income and expenditure in recipient households in Guatemala by 43.75% (Adams, 2004), Ghana by 29.8% and 14.96% (Adams, 2006; Adams *et al*., 2008a), Philippines by 8.86% (Quisumbing and McNiven, 2010), Thailand by 13.7% (Osaki, 2003), and to a lesser extent in Vietnam, 6% (Cuong, 2009). The one exception was Albania, where no effect of internal remittances on consumption was found (Castaldo and Reilly, 2007); the authors suggest that this may be due to the small sample of households reporting receipt of an internal remittance or that internal migrants may be engaged in poorly remunerated employment, thereby remitting nominal amounts. Migrants, themselves, can face many challenges even once employment is secured. The high cost of living in urban centres, increased exposure to theft and exploitation, lack of protection, and exposure to an abuse of rights leave migrants vulnerable and can impact on their ability to remit home.

The impact of remittance income on consumption is analysed in three different ways in the literature, estimation of the marginal propensity to consume (MPC), estimation of the marginal budget share, and estimation of impact on poverty and/or inequality.

The MPC is measured as the ratio of the change in consumption to the change in income (Mankiw, 2008). Snyder and Chern (2009) analysed the MPC out of internal remittances in households from three provinces of China, finding significant ($p < 0.01$) increases in consumption on total living costs of 31%, non-food of 23%, and food of 8%. A study examining household consumption behaviour in Malawi found that InRRHH have a higher MPC education out of remittances than non-receiving households (Davies *et al*., 2009).

The marginal budget share is defined as how much additional income consumers allocate to the respective goods (Mankiw, 2008). Households receiving internal remittances in Guatemala spent

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377% more at the margin on education and 136% more at the margin on housing (Adams and Cuecuecha, 2010). Private remittance transfers in South Africa had a positive impact on budget shares of food and education with households spending 11.7% and 13.6% more on each item, respectively (Maitra and Ray, 2003). Remittance income was shown to increase household expenditure on housing, consumer durables, food, and education in the Philippines (Quisumbing and McNiven, 2010) and increased household expenditure on food, non-food, and health in Vietnam (Cuong, 2009). Conversely, Adams *et al*. (2008b) found no differences in the marginal spending behaviour of remittance receiving and non-receiving households, concluding remittances are spent like any other income. Inconsistencies in research findings leave to question whether income levels and household characteristics determine spending patterns rather than the source of the income.

Remittances were received by a greater number of poor households, often leading to increases in per capita income. Several studies chose to examine the effect this had on income inequality. Remittances were found to contribute to a reduction in income inequality in Nigeria, Thailand, Guatemala, and China, with migrant remittances leading to a lowering of the Gini coefficient[4] by 7.9%, 8.9%, 2.0%, and 18.5%, respectively (Osaki, 2003; Adams, 2004; Odozi *et al*., 2010). However, studies conducted in Ghana in 2006 and 2008 both showed remittances increased inequality with the Gini coefficient rising by 3.5% and 4.0% when internal remittances are received and by 2.7% and 17.4% with receipt of international remittances.

Remittances and poverty

Studies conducted in seven countries, Ghana (Adams, 2006; Adams *et al*., 2008a), Nigeria (Odozi *et al*., 2010), South Africa (Maitra and Ray, 2003), Guatemala (Adams, 2004), Vietnam (de Brauw and Harigaya, 2007; Cuong, 2009), Nepal (Lokshin *et al*., 2010), and China (Zhu and Luo, 2010), reported significant predicted changes in poverty measures among migrant and/or remittance recipient households. Studies show a decrease in poverty headcount ranging from 0.6% (Guatemala) to 69.4% (Ghana) with the size of reduction dependent in some cases on the type of remittance received. Where internal and international remittances were separated in the analysis, the greatest impact on poverty was consistently found in InRRHH, a reduction of the squared poverty gap[5] by 4.1% in Ghana (Adams, 2006), 21.1% in Guatemala (Adams, 2004), and 54.4% Ghana (Adams *et al*., 2008a). Results indicate that even in cases where minimal impact is seen on poverty incidence, the severity of poverty can be significantly decreased in households receiving internal remittances. Similarly, Zhu and Luo (2010) in their estimate of the impact of migration on rural poverty and inequality in China found that internal remittances decreased the squared poverty gap by 4.4%.

Five studies failed to differentiate between internal and international migration and/or remittance recipient households in their analysis, limiting the comparability of their conclusions with other studies in this review. All five of these studies, however, found that migration and remittances decreased poverty. In Nigeria, poverty headcount reduced by a significant 19.7% and the squared poverty gap by 41.5% as a result of remittances received (Odozi *et al*., 2010); in Vietnam and South Africa, participation in migration decreased poverty headcount by 3.3% and 8.75%, respectively (Maitra and Ray, 2003; de Brauw and Harigaya, 2007), and in China, Du *et al*. (2005) reported that migration reduced the poverty headcount by 1.1%, whereas Zhu and Luo (2010) found that migration led to a decline in poverty headcount by 14.7% and squared poverty gap by 4.4%.

In Adams' (2006) study on the impact of remittances on poverty in Ghana, he found that the size of the poverty reduction is dependent on the poverty indices measured. When international remittances are included in a household's income and expenditure, the squared poverty gap reduced by 34.8%, including internal remittances led to a reduction of the squared poverty gap by 4.1%. A repeat study in Ghana in 2008 (Adams *et al*., 2008b) reported a reduction in squared poverty gap by 54.4% and 50.0% when internal and international remittances (respectively) are included in household income/expenditure. Reasons for this large discrepancy between results in just 2 years is discussed in the following section examining differences in research methods.

Research Methods

A key constraint affecting analysis of data is the ability to obtain precise measures of impact required for an accurate comparison of migrant

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and non-migrant or remittance receiving and non-receiving households. As discussed previously in the Introduction, households can differ in important observable and unobservable characteristics (such as skills, health, education, and motivation) that influence migration and remittance behaviour. This issue of endogeneity is recognised and dealt with to varying degrees in the literature.

Panel survey data

Panel surveys track a household or individual over time, allowing the use of that household, as its own control in analysis. This creates an opportunity to compare the same household under different circumstances in a scenario closer to that found in an ideal experiment (Deaton, 1997). Panel data is not without its problems but is recognised as possessing greater reliability than data from a simple cross-sectional survey (Wooldridge, 2002). Quisumbing and McNiven (2010) examined the impact of migration and remittances on assets, consumption, and credit constraints using unique longitudinal data from the rural Philippines. Consumption expenditures per adult equivalent are disaggregated into expenditures on various items. Cumulative shocks are included in the estimation equations with IV regression treating migration and remittances as endogenous. IV estimators can be robust tools for managing non-experimental data provided the instruments used have predictive power (Deaton, 1997; Wooldridge, 2002; Adams, 2004). Regional gross domestic product shocks in destination regions are adopted as one of the identifying instruments for remittances by Quisumbing and McNiven, following the example of earlier studies from China that used exchange rate shocks (Yang *et al*., 2008).

Panel survey data were also used by Du *et al*. (2005) and Lokshin *et al*. (2010). Du *et al*. use panel data from rural China to estimate per capita income with/without migration, whereas Lokshin *et al*. utilise panel survey data from two household surveys in Nepal (1996 and 2004) to identify the effect of remittances on household consumption. To address the problem of endogeneity, past village migration was selected as the instrument for migration decision. Past village migration has been shown to be a robust instrument by Taylor *et al*. (2003) and Zhao (2003), as it is not influenced by unobservable household characteristics that affect migration and income. Migrant networks were also used by de Brauw and Harigaya (2007), as instruments for migration, when they examined the impact of migration on poverty and household expenditure using panel data from Vietnam.

Cuong (2009) in his study on the impact of remittances on household welfare in Vietnam used data from household surveys conducted in 2002 and 2004. Cuong adopted a different approach, favouring the ATT to measure impact (Heckman *et al*., 1999; Lechner, 2002). The counterfactual income and expenditures are estimated with fixed-effect regressions. One of the main econometric problems associated with the estimated treatment effects occurs when treated households differ from the non-treated for reasons other than treatment status per se. Cuong (2009) uses panel data, which enables fixed regressions to remove unobservable time-invariant variables to avoid endogeneity bias. Adams and Cuecuecha (2010) also favoured the use of ATT in estimating the effect of remittances on the marginal spending behaviour of households in Guatemala, although the lack of panel data proved problematic in removing bias. Robustness checks demonstrated that although findings were robust in terms of signs and significance, point estimates were not consistent. Adams and Cuecuecha (2010) clearly illustrated that choice of variables, the adopted consumption measure, sample selection, and choice of specification model, can all lead to under or over estimation of point estimates.

Counterfactual estimates with instrumental variables

Where panel data is not available, counterfactual estimates are constructed to measure the impact of internal remittances, treating remittances as endogenous additions to household income. Odozi *et al*. (2010) analysed the impact of remittances on poverty and inequality on data from 1704 Nigerian migrant and non-migrant households. The authors compared results of analysis treating remittances first as exogenous (income estimate with and without remittances) and secondly as endogenous (by way of constructing counterfactual estimates). Results show that treating remittances as exogenous led to underestimation of the impact on poverty and inequality; however, Odozi *et al*. failed to address bias associated with the unobserved differences between groups.

Studies conducted by Adams *et al*. in Ghana and Guatemala measuring the impact of migration and remittances on poverty and inequality use similar methods estimating a counterfactual income/consumption (Adams, 2004, 2006; Adams *et al*.,

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2008a). Adams *et al*. also fail to adequately address the problem of bias in their 2004 and 2006 studies on the impact of remittances on poverty in Guatemala and Ghana. Robustness checks comparing predicted and observed expenditure outcomes found that observed data underestimated the impact of remittances on poverty indices and the Gini coefficient, measuring inequality. Although the 2006 study offers a weak attempt at testing for selection bias, neither study considers other potential econometric problems such as measurement bias or specification bias. In 2008, however, Adams *et al*. use IVs based on migration networks to deal with household heterogeneity, testing for validity and strength. Interestingly, the 2006 and 2008 studies on the impact of remittances on poverty and inequality in Ghana show marked differences in the depth of impact (refer to Table 1). These differences are likely associated with the variations in estimation models (Adams, 2006; Adams *et al*., 2008a).

Zhu and Luo (2010) used counterfactual estimates of per capita income in the presence and absence of migration to estimate the impact of migration on rural poverty and inequality in China. Distance from the household's residence to the nearest bus station and distance from the household's residence to the county capital were used as instruments, after tests for validity confirmed their strength. Distance has also been used by Woodruff and Zenteno (2007) in the case of Mexico and Adams and Cuecuecha (2010) in Guatemala.

Regression analysis

Other studies use a combination of linear regression models (OLS regression, logit, and tobit models) to estimate the impact of remittances on household consumption. Although four of the studies treated remittances as exogenous additions to household income/expenditure (Osaki, 2003; Castaldo and Reilly, 2007; Davies *et al*., 2009; Snyder and Chern, 2009), others were controlled for endogeneity and selection bias using IVs. Quisumbing and McNiven (2010) compared the results of both OLS analysis and IV analysis in their study on the impact of migration and remittances on asset holdings, consumption expenditures, and credit constraints on households in origin communities from Bukindon, Philippines. They found that OLS analysis underestimated the impact of migration on housing and consumer durables while also underestimating the impact of remittances on asset holdings. Similarly, Maitra and Ray (2003) posit that OLS estimation of budget share equations that treat remittances as exogenous are likely to yield misleading results.

After controlling for endogeneity and selection bias using IVs, Adams *et al*. (2008b) found that remittances did not have a significant impact on consumption behaviour in Ghana. They concluded that evidence from OLS regression indicating differences in consumption patterns between remittance receiving and non-receiving households can be accounted for by unobservable characteristics between groups. In contrast to these studies, Osaki (2003) treated remittances as exogenous in his study of migrant remittances in Thailand, presenting household income in two forms, including remittances and excluding remittances. The limited analysis of expenditure patterns implied that the Thailand study was open to various forms of bias with the generalizability of results questionable. Similarly, Davies *et al*. (2009) treated remittances as exogenous in their study of remittances and consumption in rural Malawian households, stating that by focusing on rural household's unobserved heterogeneity was minimised. Such a generalised statement does not allow for heterogeneity among rural households that can influence the receipt of remittances and the consumption patterns of households.

This review on the impact of internal remittances, identified 18 studies conducted in 11 low-income countries and reviewed their findings; however, comparison of results must be viewed with caution because of the difference in research methods used to undertake the studies. Interestingly, where comparison of methods was undertaken, point estimates may have varied but the direction of the relationship did not change. A limitation in many studies was the general lack of consideration to bias associated with the unobserved characteristics of migrant and non-migrant or remittance receiving and non-receiving households.

DISCUSSION

This systematic review brings together available literature and knowledge on the impact of internal migration and remittances on origin households in developing countries. The research context in which all studies were carried out bore similar

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economic characteristics, although undertaken in 11 different countries on four continents. Study households were largely situated in locations with inadequate markets, unequal employment opportunities, paucity of human capital, and limited or no access to wealth or physical assets. Households participating in migration and/or receiving remittances represented a significant proportion of study populations. Poorer households were more likely to send out internal migrants; with findings also demonstrating remittance flows were acutely directed toward households of lower economic status. Findings support recent developments in migration theory that postulate that in the face of inadequate markets, households reallocate resources (specifically labour) to diversify economic risk and improve livelihoods (Stark, 1991).

Eleven out of 12 studies estimating migration/remittance impacts on household consumption reported a marked increase in household income and expenditure compared with non-migrant/non-remittance receiving households.[6] Several studies found that if households had not participated in migration or received remittances, their income would have been lower than non-migrant households. The exception, a three district study in China, found that households earning local wages had higher total incomes than those receiving remittances, concluding that local opportunities were not sufficient to absorb labour and that local wage employment would likely be preferred to migration (Snyder and Chern, 2009). However, the authors failed to recognise complexities around migration including individual characteristics of households such as education, skills, and ethnicity that may prevent members from finding local employment. An important and critical omission by almost all studies in this review is the impact of migration on the welfare of the migrants themselves especially low-skilled labourers, domestic workers, and rural urban migrants. It is well known that these migrants often work in poor conditions, with poor remuneration and working conditions, and many live in urban fringes, slums, or shantytowns (Saunders, 2010).

The fungibility of remittance income is often assumed, that is, a dollar of remittance income is seen to be equivalent to a dollar of wage income, and the marginal propensity to consume out of all income regardless of the source is assumed equal (Friedman, 1957). Findings from the literature are incongruous, with some studies (Adams *et al*., 2008b) finding no difference in the marginal spending behaviour of internal remittance receiving and non-receiving households, concluding that remittances are fungible and spent like any other source of income. Others (Davies *et al*., 2009) showed clearly that the marginal propensity to consume some expenditure items out of remittance income is substantially higher than for farm or salary income. Maitra and Ray (2003) found that private transfers, public pensions, and other sources of household income have different impacts on household expenditure patterns, concluding that source of income has a significant impact on consumption.

Internal remittances have been shown to represent a significant portion of total household income/consumption in poor households with literature reporting increases in recipient household income and consumption of between 6% in Vietnam (Cuong, 2009) and more than 43% in Guatemala (Adams, 2004). The most commonly reported increases in expenditure, related to remittance receipts, were increased expenditure on food, education, and housing. Previous research has viewed consumption on food, education, and housing with pessimism, speculating that true development impact will only occur when households use income for savings and 'productive' investment purposes where 'productive' investment is defined in terms of small business and agricultural inputs (Massey and Parrado, 1994). This narrow interpretation of productive investment ignores the impact that increased expenditure on other expenditure items may have follow-on effects that impact on the welfare of individual household members. Improved nutritional status of children from either more regular intake of food or increased variation in diet can help improve retention at school (Cox and Ureta, 2003). Non-food consumption may include clothing, blankets, hygiene needs, all of which can positively impact the health of members of the household, thereby improving household welfare.

Internal migrant remittances can represent a significant portion of recipient household income among the poor and were found to have a poverty reducing impact in Vietnam (de Brauw and Harigaya, 2007), Ghana (Adams, 2006; Adams *et al*., 2008a), Nigeria (Odozi *et al*., 2010), South Africa (Maitra and Ray, 2003), Guatemala (Adams, 2004), Nepal (Lokshin *et al*., 2010), and China (Du *et al*., 2005; Zhu and Luo, 2010). Interestingly,

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the most significant poverty impact was seen on the squared poverty gap, measuring severity of poverty (Adams, 2004; Adams *et al*., 2008a; Odozi *et al*., 2010), suggesting that migration of family members is a survival strategy of poor households in low-income countries.

With internal migration affecting more families in the lower income bracket, it is reasonable to assume that the absolute gain in income among the poor will have an equalising effect on income distribution. This supposition is supported by remittance literature, which argues that the effect on inequality is dependent on contextual factors including the economic position of those households participating in migration, type and amount of remittance received, and migration history of participant communities (Stark *et al*., 1988; Taylor and Wyatt, 1996). Findings of this review reflect this contextual variation with studies in Nigeria (Odozi *et al*., 2010), Thailand (Osaki, 2003), Guatemala (Adams, 2004), and China (Zhu and Luo, 2010) showing internal migration and remittances decrease income inequality, whereas studies in Ghana (Adams, 2006; Adams *et al*., 2008a) had the reverse effect. This variation may be due to the high proportion of Ghanaian households in the upper expenditure deciles reporting receiving both internal and international remittance transfers. If remittances flow disproportionately to wealthier households, a positive effect on the Gini index would be expected.

All 18 studies were based on data collected from cross-sectional household surveys. Difficulties in identifying causality plague cross-sectional survey data with econometric and statistical methodologies varying considerably across studies as they attempt to overcome the non-experimental nature of their data (Deaton, 1997; UNDP, 2009). Variations found in sample definition, approaches to analysis, and testing robustness of findings result in a cautious approach to comparisons of findings. This paper highlights the need for standardised methods of analysis of migration and remittance data if results are to be truly compared.

POLICY IMPLICATIONS AND CONCLUSIONS

Notwithstanding the limitations of reviewed studies, we acknowledge the important role internal migration and remittances can play in improving the welfare of households in low-income countries. This review highlights that remittances are directed toward households of lower economic status; therefore, the ability to remit cash at one location and receive the money at another can improve the livelihoods of recipient households.

Economic, migration, and development policies are required that enable low-cost and direct flow of remittances from popular migrant destinations to rural households. With remittances shown to affect consumption patterns, internal migration can potentially contribute to economic growth and development of recipient households. Increased expenditure on education, housing, health, and basic needs all serve to improve human capital. To maximise this impact, it is imperative that policies conducive to remittance flows are implemented.

The United Nations suggest that remittance-receiving households should be able to use future remittances as collateral for procuring loans for investment in education, agricultural equipment, and housing (UNCTAD, 2011). Access to credit in rural areas could also enable non-remittance receiving households to set up service providing businesses (such as building supplies), allowing them to benefit from remittances of others. Encouraging financial service providers to set up in rural areas will help to increase access to investment and savings of remittances. Increased spending by remittance receiving households can also have follow-on or multiplier effects on the local community through stimulating and increasing the demand for goods and services. The multiplier effects of migration and remittances on local communities are recognised in the international remittance literature (Nicholas, 1993; Taylor *et al*., 1996; Taylor and Dyer, 2009) but require further research with respect to internal remittances. Households active in migration were shown to experience increased expenditure on housing and consumption, which can have second and third round effects on wages, employment, and business opportunities for both migrant and non-migrant households.

The findings from this paper have obvious implications for low-income nations experiencing a boom in rural–urban migration. In a time of rapid rural–urban migration, labour policies should not be restrictive; alleviating barriers on migration could provide important improvements

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in household welfare in sending areas. Recognition of the important role that internal migration and remittances can play in reducing poverty in recipient households is imperative to the development of pro-migration policies.

Future research on the impact of internal remittances in low-income nations should acknowledge the predicament of migrant workers.[7] For example, including a subset of the migrant population linked with origin households could provide important insight into challenges migrants face during migration and in sending remittances. Where pro-migration policies are considered, it is imperative that protection policies for migrant workers also be implemented and enforced to limit the exploitation of this highly vulnerable workforce.

In conclusion, in this review, internal remittances were shown to impact household expenditure and consumption patterns in different ways than other income sources. The rise in mean household income in the lower income decile groups has been shown to have dramatic effects on the severity of poverty often also leading to decreases in income inequality. Consistent increases in spending on education were found when marginal propensities to consume out of remittance income and marginal budget shares (including remittances) were calculated for specific consumption items. Increased per capita expenditure on food, healthcare, and housing were also commonly found, showing that internal remittance income does have a positive impact on the human capital of recipient households. By removing barriers to migration and improving access to remittance income, low-income developing countries could experience considerable decreases in the severity of poverty and significant increases in human capital.

The challenge for government ministries and policy makers is in recognising the important role internal migration and remittances play in improving livelihoods for poor households and using this knowledge to implement poverty reduction strategies and rural development policy. Additional research on the impact of internal migration and remittances on poverty and consumption is required to understand this relationship further. Internal migration can serve to complement poverty reduction and rural development. The development of a standard method of analysis would facilitate comparison of findings across studies. Presently, the varied approaches to data analysis restrict the comparability or generalizability of findings.

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NOTES

(1) The counterfactual approach to analysing the impact of remittances on poverty and inequality was first employed by Adams (1989) in his study of three villages in Egypt.
(2) The authors on request can provide full search strategies.
(3) Copies of the data extraction table and quality assessment forms are also available from the authors on request.
(4) The Gini coefficient is a measure of the inequality of a distribution commonly used in measures of inequality of income or wealth. The value of 0 expresses total equality and a value of 1 total inequality.
(5) The squared poverty gap indicates the severity of poverty. 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. (World Bank, 2005a).
(6) (Osaki, 2003; Taylor *et al.*, 2003; Adams, 2004, 2006; Du *et al.*, 2005; de Brauw and Harigaya, 2007; Adams *et al.*, 2008a, 2008b; Cuong, 2009; Quisumbing and McNiven, 2010; Zhu and Luo, 2010)
(7) We would like to thank reviewer 3 for highlighting this important omission from the studies included in this review.

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APPENDIX A

ECONLIT SEARCH 25/02/10

EconLit was searched via the Ovid interface on the web on 25/02/10. The dates searched were 1990 current with a filter for English only applied. There were 584 records identified, and 382 records were downloaded after management of duplicates:

1. (migrant $ or movement) and (rural or urban or internal or circular or season$ or temp $).ab. (2046)
2. (remittance $ or 'informal transfer $' or 'private transfer$') and (study or studies or econometric or empirical or household or survey).ab. (455)
3. (remittance $ or 'informal transfer$' or 'private transfer$') and (educat$ or school$ or 'human capital').ab. and (study or studies or empirical or econometric or household or survey).af. (97)
4. (remittance $ or 'informal transfer $' or 'private transfer $') and (health or 'well-being' or wellbeing). ab. and (study or studies or empirical or econometric or household or survey).af. (35)
5. (remittance $ or 'informal transfer$' or 'private transfer $') and (poverty or welfare).ab. and (study or studies or empirical or econometric or household or survey).af. (120)
6. (remittance $ or 'informal transfer $' or 'private transfer$') and impact).ab. and (study or studies or empirical or econometric or household or survey).af. (166)
7. (remittance $ or 'informal transfer$' or 'private transfer$') and (livelihood or living or income or employ$ or work or job or labor or labour).ab. and (study or studies or empirical or econometric or household or survey).af. (348)
8. (remittance $ or 'informal transfer$' or 'private transfer$') and (consum$ or expenditure or spend$ or 'use').ab. and (study or studies or empirical or econometric or household or survey).af. (169)
9. (remittance $ or 'informal transfer$' or 'private transfer$') and (savings or investment or social).ab. and (study or studies or empirical or econometric or household or survey).af. (162)
10. 1 or 2 (2429)
11. or/3-7 (418)
12. or/8-9 (278)
13. 10 and 11 (382)
14. 10 and 12 (253)
15. limit 13 to (yr = '1990-current' and english) (350)
16. limit 14 to (yr = '1990-current' and english) (234)

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