POVERTY AND MIGRATION IN A TRANSFORMED SOUTH AFRICA

Antonie Nico Pool

POVERTY AND MIGRATION IN A TRANSFORMED SOUTH AFRICA

by

Antonie Nico Pool

Submitted in fulfilment of the requirements in respect of the Doctoral degree qualification Doctor Philosophiae (PhD) Economics in the Department of Economics in the Faculty of Economic and Management Sciences at the University of the Free State.

Submitted: 21 January 2016

Promoter: Prof. Frederik le Roux Booysen

Department of Economics

University of the Free State

Declaration

I, Antonie Nico Pool, declare the following:

I. The Doctoral Degree research thesis that I herewith submit for the Doctoral Degree qualification *Philosophiae Doctor (PhD) Economics* at the University of the Free State is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education,

II. I am aware that the copyright is vested in the University of the Free State,

III. All royalties as regards intellectual property that was developed during the course of and/or in connection with the study at the University of the Free State, will accrue to the University.

Abstract

Despite poverty being the focus of many regional, national and international policy frameworks, 54% of the South African population continue to live in poverty. While escaping poverty is admittedly difficult, breaking the intergenerational transmission of poverty constitutes an even bigger challenge. To escape poverty, individuals and households turn to methods such as migration as means of breaking the cycle of poverty.

The aim of the study was to investigate the links between poverty dynamics and migration in a transformed South Africa. The study followed a two-pronged approach to investigate these links. The first approach investigated inter-household dynamics by focusing on poverty and on the intergenerational transfer of poverty from core to dynasty households. The first approach moreover investigated migration and remittances in core and dynasty households and their influence on poverty in dynasty households. The second approach explored intra-dynasty household dynamics by comparing core and non-core members in dynasty households. The influence of core-member- and non-core member characteristics on dynasty household welfare was also investigated in this approach. To achieve the specified aim, this study utilised data generated by the KwaZulu-Natal Income Dynamics Study (KIDS).

According to the findings of the first analytical approach, dynasty households in the post-apartheid era are better off than their core counterparts by not only having higher average and median levels of household expenditure, but also lower levels of headcount poverty, depth of poverty and severity of poverty. The analysis further supports the existence of the intergenerational transfer (IGT) of poverty in respect of households living in KwaZulu-Natal by increasing the probability that a dynasty will be the poor by 40.3% – if, that is, the household in question comes from a chronically poor background. The findings also indicate that the mobility of core households is relatively higher in the post-apartheid era than earlier on in the late-apartheid era. This study further confirms that migration is a household risk-diversification strategy because dynasty households from chronically poor backgrounds will be more likely to migrate. Migratory dynasty households, on the other hand, demonstrate significantly lower levels of poverty than non-migratory dynasty households. The co-

insurance motive for remitting was also confirmed: dynasties from chronically poor backgrounds were found to be more likely to receive remittances and the levels of poverty were moreover significantly lower for dynasty households receiving remittances.

The findings of the second analytical approach reveal the importance of intra-household dynamics in respect of poverty in dynasty households. The results suggest that core individuals are crucial for the survival of dynasty households and stand to contribute more to poverty alleviation in dynasty households than do non-core household members in that core individuals enjoy higher levels of education and of social capital, they are in the labour force, are employed and are involved in remittance flows and they also receive social transfers from government. The findings of the second approach further suggest that the social capital provided by family members is important in respect of poverty alleviation.

This study contributes to the literature on poverty in that it, on the one hand investigates the linkages between poverty and poverty dynamics and, on the other, migration and remittances. This study also contributes to the literature on migration and remittance flows and adds to our understanding of how migration relates to poverty dynamics in South African households.

Opsomming

Ten spyte daarvan dat armoede die fokus van baie streeks-, nasionale en internasionale beleidsraamwerke is, leef 54% van die Suid-Afrikaanse bevolking steeds in armoede. Onderwyl dit moeilik is om aan armoede te ontkom, is dit ’n groter uitdaging om die oordrag van armoede tussen generasies te verbreek. Individue en huishoudings wend hulle tot metodes soos migrasie om uit die armoedekringloop te ontsnap.

Die doel van die studie was die bestudering van die verband tussen armoededinamika en migrasie in ’n getransformeerde Suid-Afrika. ’n Tweeledige benadering is in die studie gebruik om hierdie verbande te ondersoek. Die eerste benadering het ondersoek ingestel na interhuishoudingsdinamika deur op armoede en die oordrag van intergenerasie-armoede vanaf kern- na dinastiehuishoudings te fokus. Die eerste benadering het ook ondersoek ingestel na migrasie en geldsendings (oordragte) in kern- en dinastiehuishoudings en die invloed daarvan op armoede in dinastiehuishoudings. Die tweede benadering het intradinastiehuishoudingsdinamika verken deur kern- en nie-kernlede in dinastiehuishoudings te vergelyk. Die invloed van die kenmerke van kern- en nie-kernlede op die welsyn van dinastiehuishoudings is ook in hierdie benadering ondersoek. Om hierdie doelwitte te bereik, het die studie gebruik gemaak van die data van die KwaZulu-Natal Income Dynamics Study (KIDS).

Die bevindinge van die eerste analitiese benadering dui daarop dat post-apartheid dinastie-huishoudings beter daaraan toe is as hul kern-eweknieë vanweë die hoër gemiddelde en mediaanvlakke van huishoudelike besteding, asook die laer vlakke ten opsigte van die voorkoms, die diepte en die felheid van armoede. Die analise bied bewyse vir die voorkoms van intergenerasie-oordrag van armoede by huishoudings in KwaZulu-Natal. Die waarskynlikheid dat ’n dinastiehuishouding arm sal wees, neem met 40.3% toe indien die huishouding ’n kroniese armoede-agtergrond het. Die bevindinge dui ook op die relatief hoër mobiliteit van kernhuishoudings in die post-apartheid era as vroeër in die laat-apartheid era. Hierdie studie bevestig ook dat migrasie ’n huishoudelike risikoverspreidingstrategie is deurdat dinastiehuishoudings uit ’n kroniese armoede-agtergrond meer waarskynlik is om te

migreer, terwyl migrerende dinastiehuishoudings beduidende laer vlakke van armoede as nie-migrerende dinastiehuishoudings ondervind. Die mede-versekeringsmotief vir oordragte is ook bevestig, aangesien dinastiehuishoudings uit ’n kroniese armoede-agtergrond meer waarskynlik is om oordragte te ontvang, terwyl die armoedevlakke ook beduidend laer is in geval van dinastie-huishoudings wat oordragte ontvang.

Die bevindings van die tweede analitiese benadering onthul die belangrikheid van intrahuishoudelike dinamika rakende armoede in dinastiehuishoudings. Die bevindings laat blyk dat kern-individue deurslaggewend is vir die voortbestaan van dinastiehuishoudings en waarskynlik ook meer mag bydra tot armoedeverligting in sodanige huishoudings as nie-kernlede gegewe hul hoër vlakke van opleiding, sosiale kapitaal, arbeidsmarkdeelname en indiensname, asook groter betrokkenheid by oordragte en die ontvangs van maatskaplike toelaes. Die bevindinge van die tweede benadering suggereer ook dat die sosiale kapitaal van familielede belangrik is vir armoedeverligting.

Die studie dra by tot die literatuur oor armoede in soverre dit ondersoek instel, enersyds na die verband tussen armoede en armoededinamika en andersyds tussen migrasie en oordragte. Die studie dra ook by tot die literatuur rakende migrasie en oordragte en dra by tot ons begrip van die verband tussen migrasie en die armoededinamika in Suid-Afrikaanse huishoudings.

Acknowledgements

I should like to express my appreciation to all who supported me during the course of this journey. My sincere thanks go to the following individuals and organisations:

- My supervisor, Professor Frikkie Booysen for his support and guidance over the years. I was truly fortunate to have had the opportunity of studying under his guidance.

- My parents, without whose love and support none of this would have been possible. Words cannot adequately express how grateful I am that they were always there for me, helping wherever they could and also making many sacrifices in the process.

- My lovely wife and my son in appreciation of their continued love and encouragement. I am truly blessed in having such a family.

- My brother, my sisters and my extended family without whose love and support I would not have been able to complete this endeavour.

- The National Research Foundation (NRF), in grateful recognition of their financial support.

To God be all the Glory

Table of contents

List of figures

Chapter 1

Chapter 2

Chapter 3

Chapter 5

Chapter 6

List of tables

Introduction

Democracy paved the way for transformation in South Africa. Following the 1994 elections, various constitutional, political and economic changes resulted in a visibly changing environment. Not only did this serve to open the channels for trade and various other relations with foreign countries, but the Constitution changed and this opened a whole new world for the people of South Africa.

The goal of poverty alleviation stands central in international, continental, regional and national policy frameworks, including the Millennium Development Goals, the Sustainable Development Goals (SDG), the New Partnership for Africa's Development (NEPAD), the Accelerated and Shared Growth Initiative of South Africa (ASGISA) and the National Development Plan (NDP). The new National Development Plan of the National Planning Commission (2010) states that "the country must write a different story in the years ahead...in this new story, our nation's energies are focused on attacking poverty". Empirical evidence reflects that, although some gains were made as regards poverty alleviation (among others) in the early years of South Africa's transformation, 54 per cent of South Africans today still live in poverty (OECD, 2010). Poverty and inequality remain distinct characteristics of South African society. An understanding of how South Africans cope in the face of poverty is required to inform the policies and programmes that are employed with a view to attaining the goal of poverty alleviation. One such coping strategy for dealing with poverty – one of central importance in this study – is migration.

The internal migration of individuals and households is a common occurrence in developing countries (South Africa included), where many attempt to escape unemployment and the pressures of poverty. It certainly is a prominent feature of the South African economy. In South Africa, migration has a protracted history, one dating back to the 1800s. Migratory moves were primarily undertaken by labour migrants who went in search of employment opportunities (especially in the mining industry). The migration process was however ruled by racial discrimination in the governments of the pre-apartheid era and of the apartheid era (Stapleton, 2015). Laws such as the Native (Urban Areas) Act of 1923 prevented (labour)

migrants from settling permanently with their families around the white urban employment areas. The Act identified urban areas in South Africa as “white”. All blacks were to carry a permit (pass) at all times, only allowing them access to these “white” areas for purposes of employment. While this “internal passport” system limited the movement of blacks, it also managed urbanisation and furnished the authorities with a means of managing migrant labour. In 1945, the Natives Act of 1923 was replaced by the Natives (Urban Areas) Consolidation Act and amended in 1952 further to restrict all blacks from staying in white urban areas for more than 72 hours (certain “Section 10” privileges allowed them access to urban areas for more than 72 hours for employment purposes only). The pass laws were a feature of the apartheid system that continued until 1986, when they were officially abolished as part of the process to remove some of the apartheid laws (Governor-General, 1920; Frederick, 1976; Lodge, 1983; Lewis, 1987; Pampallis, 1991; O’Malley, 2015). The lifting of restrictions on mobility coupled with new-found democracy set the stage for the free movement of Africans within the country. These factors naturally attracted the attention of researchers to the South African internal migration phenomenon.

The patterns of migration within South Africa have been thoroughly documented. There seems to be an increasing trend in general migration and a decreasing trend in labour migration. According to the 2005 Labour Force Survey (LFS), 13 per cent of adults migrated in the five years prior to the survey (2000–2005). The 2008 National Income Dynamics Study (NIDS) indicated a significant increase in the number of adults who migrated for general purposes. The NIDS data indicated that 19 per cent of adults had migrated in the five years prior to the survey (2003–2008; all weighted data). As regards labour migration, there was a significant decrease in the number of households with labour migrants during the apartheid and the post-apartheid periods. According to the 1993 Project for Statistics on Living Standards and Development (PSLSD), 18.8 per cent of all households reported that they had a labour migrant. There seems subsequently to have been a significant decline in labour migration. In the 2008 NIDS, only 10.9 per cent of the households indicated that they had a temporary labour migrant. A similar, decreasing trend has been observed in respect of African and rural African households. In the 1993 survey (PSLSD), 23.7 per cent of African households indicated that they had a migrant worker as opposed to the much lower figure of 12.6% of African households recorded in the 2008 NIDS. In the 1993 PSLSD, as many as 33.8 per cent

of rural African households indicated that they had a migrant worker, while in the 2008 NIDS, only 21.8 per cent indicated they had a migrant worker (Posel, 2009). One may therefore conclude that while migration in general seems to have increased, migration for employment reasons seems to have decreased. Migration however still seems to be prominent among African and rural African households. Despite restrictions on urbanisation (permanent migration) by blacks having been lifted, circular (temporary) migration still seems to play a significant role in the household formation of blacks in South Africa (Posel & Casale, 2003).

The determinants of (labour) migration in South Africa are also well documented. The general conclusion is that in South Africa – apart from many individual and household characteristics – financial, human and social capital also have a significant role to play in determining migration. Individual and household characteristics that influence migration are generally gender, age, marital status and household composition such as the size of the household and the dependency ratio. There seems to be consensus that migrant workers are predominantly younger males between 15 and 45 years. There is however evidence that the share of female migrants has recently started growing. The roles of physical capital (such as employment income, receiving a government grant, landownership and homeownership) and of human capital (such as years of schooling completed or of having achieved a Grade 12 level of education) are emphasised as important considerations regarding the decision to migrate and considerably increase the probability of migration (Posel et al., 2006, Ardington et al., 2013; Clarke and Eyal, 2014; Mbatha & Roodt, 2014; Schiel et al., 2014). Social capital (access to migration networks) also seems significantly to increase the likelihood of migration (Stapleton, 2015).

Migration, among others, is linked to poverty. As already stated, 54 per cent of the South African population still live in poverty (OECD, 2010). Finn et al. (2012) emphasise the burden of the poor. Using the three waves of the NIDS data, these authors have indicated that as many as 76% of the poor were chronically poor in Wave 1 (2008), while 80% were chronically poor in Wave 2 (2010) and an enormous 85% of the poor were chronically in Wave 3 (2012). Since migration seems to have positive payoffs in South Africa, poverty therefore forces households to turn to poverty-alleviation strategies such as migration. Multivariate analysis of the 1996 Census data by Kok et al. (2003) provides evidence of the link between poverty

and migration. Their results indicate that though poverty limits migration, migration significantly increases an individual's monthly income. However, because Kok et al. (2003) used cross-sectional data, this limits the drawing of any conclusions regarding causality. According to Lucas (1997), wealthier households do not face credit constraints, they are able to afford the cost of migration and are therefore more likely to migrate. Conversely, landowners, because they have land commitments, are less likely to migrate. The old-age pension (OAP) as a means of relaxing credit constraints for migration has also been studied. According to Posel et al. (2006) and Ardington et al. (2013), the OAP has a positive association with the probability of being a labour migrant in that the relaxing of credit constraints may prevent households from migrating. Clarke and Eyal (2014), on the other hand, maintain that a government housing subsidy reduces the likelihood of migration because this subsidy effectively ties the recipients to their property.

As regards the link between migration and poverty, it would seem that, in rural South Africa, temporary migration has a major impact on household well-being, while remittances make a significant difference to the socio-economic status of the households left behind (Collinson, 2010). A large number of (rural) households rely on remittances to survive. There however appears to have been a significant decline in the sending of remittances in South Africa. In the 1993 (PSLSD), approximately 78% of African migrant households reported that they were receiving remittances. In 2008 (NIDS), this percentage had declined to only 31 per cent. A similar trend was observed in respect of rural African migrant households. In the 1993 (PSLSD), 79.1% of the rural African migrant households indicated that they were receiving remittances, while only 30.84% of rural African households reported receiving remittances in 2008 (NIDS) (Posel, 2009). Although Posel emphasises that possible differences in the survey process may serve to explain these significant decreases in remittances, the general conclusion is still that of a sharp decline in the proportion of migrant households who were then receiving remittances. Another important explanation may be the role played by government grants that have been shown to crowd out remittance income (Nielsen & Olinto, 2007; Oruc, 2011).

Despite the decline in the flow of remittances, evidence in South Africa indicates that remittances still have a significant role to play in reducing poverty among South African

households. Collinson et al. (2009), using the data of the Agincourt Health and Demographic Surveillance System (AHDSS), have indicated that having had at least one temporary migrant in a household at the beginning of the survey (2001), had served to raise household socio-economic status (SES) (an asset-based SES) by 0.03 at the end of the period (2005). Their regression results also concluded that households with at least one temporary migrant had odds of transitioning to the upper half of the SES distribution that were about 30 per cent higher than those of households who did not have temporary migrants. They also concluded that additional female temporary migrants had a more significantly positive effect on the SES of the poorest than did additional male temporary migrants.

Using data from the 2008 National Income and Dynamics Study (NIDS), Biyase (2012) has demonstrated that Africans bear the highest burden of poverty in South Africa, the average poverty rate being 56%. She has also established that remittances reduce the average income headcount poverty with 19.3 percentage points – from 67% (without remittances) to 47.7% (including remittances). Finn, Leibbrandt and Levinsohn (2012) have indicated that migrants have a significantly higher level of per capita income and also a better chance of being employed and of staying employed. Daniels et al. (2013) and Mbatha and Roodt (2014), using the NIDS data, also found that migration increases people's opportunities of finding formal and informal employment.

Within this context, the present study investigates the links between poverty dynamics and migration in a transformed South Africa. It follows a two-pronged approach to investigate these links. The first approach investigates poverty and the intergenerational transfer of poverty from core to dynasty households. This approach also investigates migration and remittances in core and dynasty households, and how these influence poverty in dynasty households. The second approach investigates intra-dynasty household dynamics by comparing core and non-core members in dynasty households. The influence of core and non-core members' particular characteristics on the welfare of dynasty household's is also investigated.

The chapter outline is as follows:

Chapter 1 contains an overview of the literature on migration, remittances and poverty. It focuses on the conceptual and theoretical frameworks of migration and remittances before providing an overview of empirical evidence on the links between migration, remittances and poverty.

Chapter 2 sets out the methodology that is employed in the study. First, the data are outlined and discussed, followed by the terms and description of variables and then the methods used in the two-pronged inter-household and intra-household analytical approach employed in this study.

Chapter 3 investigates not only the post-apartheid transfer of intergenerational poverty in core and dynasty households but also the incidence, the depth and the severity of poverty in core and dynasty households. This is followed by an exploration of the role that poverty transitions in core households play in explaining differences in the incidence, the depth and the severity of poverty in dynasty households.

Chapter 4 focuses on post-apartheid poverty dynamics and on migration by core and dynasty households. Migration patterns and migration transitions are documented, followed by an investigation of their importance in respect of the incidence, the depth and the severity of poverty experienced by dynasty households.

Chapter 5 investigates remittances in core and dynasty households, documents inward and outward remittances and then turns to an investigation of the impact of core and dynasty remittances on the incidence, the depth and the severity of poverty experienced by dynasty households.

Chapter 6 focuses on the intra-household analysis and looks into the role played by core and non-core members of dynasty households in terms of explaining differences in household welfare in dynasty households. This chapter is followed by a conclusion, recommendations and a discussion of the limitations of this study.

Chapter 1

Literature Review

This chapter summarises the prominent literature on migration and remittances. One particular focus of this literature review concerns the conceptual and theoretical frameworks of migration and remittances. Empirical evidence on the links of migration and remittances with poverty is also explored. This provides the context for the empirical analysis conducted in this study.

1. A THEORETICAL PERSPECTIVE ON (INTERNAL) MIGRATION

In general, (internal) migration involves the movement of a person (a migrant) between two places for a certain period of time or, as Kok et al. (2003) indicate, it requires a change of residence, accompanied by crossing the boundary of a migration-defining area. The nature of the boundary that is crossed is what distinguishes internal migration (where a subnational border is crossed) from international migration (where an international border is crossed).

Despite the simplistic definition given above, migration is a multifaceted phenomenon that cannot be explained by a single theory (Boyle et al., 1998; Arango, 2000; Kok et al., 2003). Even defining migration has been problematic and different definitions are often adopted in specific studies.

Theories of migration moreover evolved over time. Most theories of migration can be traced back to the laws of migration identified by Ravenstein (1885) in the 19th century. Ravenstein wanted to prove that specific processes were at work when people decided to migrate. According to Ravenstein (1885), employment and wage opportunities in the major commerce and industry centres resulted in migratory movement. He also assumed that migration was the result of individuals who wanted to better their lives. He based his research on the Census data of England and Wales, Scotland and Ireland. His conclusions led him to identify seven laws of migration. These are:

- Most migrants “only proceed a short distance” and mostly “in the direction of the great centres of commerce and industry which absorb the migrants”.
- “Inhabitants of a country surrounding a rapid growing town will flock into it”, which will leave “gaps” in the “rural population” that will be “filled up by migrants from more remote districts. This will create migration flows that reach “the most remote corner of the kingdom”.
- “The process of dispersion is the inverse of that of absorption, and exhibits similar features”.
- “Each main current of migration produces a compensating counter-current”.
- “Migrants proceeding long distances generally go by preference to one of the great centres of commerce or industry”.
- “The natives of towns are less migratory than those of the rural parts of the country”.
- “Females are more migratory than males” (Ravenstein, 1885:198–199).

Despite many alterations to the original view, the laws of migration postulated by Ravenstein (1885) are probably the most influential impact of the views on migration and serve as a point of departure for all models of migration. The classical view on migration, which is based on the laws of migration, focused exclusively on individual choices influenced by wage differentials. Attention shifted to the rapidly changing migration environment and the theory was altered to include the possibility that other economic factors influence migration. This led to the development of the ‘new theory’ of migration, which emphasises the role of the household in the migration decision-making process. Many still criticised these theories on the basis that these focused exclusively on the economic causes of migration. The realisation that not only economic factors but also non-economic factors influence migration is not only necessary but also important in terms of theory building. The evolution of different views on the migration decision-making process is reflected in the literature. The rest of this section will briefly discuss the main theoretical perspectives on migration.

1.1 The neoclassical theory

The neoclassical theory is known as a micro-level theory, meaning that it focuses solely on individual economic factors that influence migration. The neoclassical theory, also based on Ravenstein's (1885; 1889) laws of migration, emphasises migration as a condition of labour surpluses and deficits, with people moving from surplus areas to improve their living conditions. Internal migration (like international migration) is therefore seen as being caused by geographical differences in the supply of and demand for labour, which result in wage differentials (Kok et al., 2003). Neoclassical theorists view these wage differentials as the main reason for people wanting to migrate from a low-wage area to a high-wage area (Boyle et al., 1998; Arango, 2000). This corresponds to Hicks's earlier view (1932) that acknowledged the existence of wage differentials as being the main cause of migration.

The neoclassical theory also considers individuals as rational utility maximisers. Therefore, it is assumed that individuals will take into account all the costs and the benefits of migrating, weigh them up against those in their current location, and then rationally decide to migrate to the area in which they will obtain the highest expected utility. According to the neoclassical view, poverty is a short-term phenomenon, since the decrease in the local supply of labour due to migration will increase local wages, which, in return, will eliminate the short-term emergence of poverty.

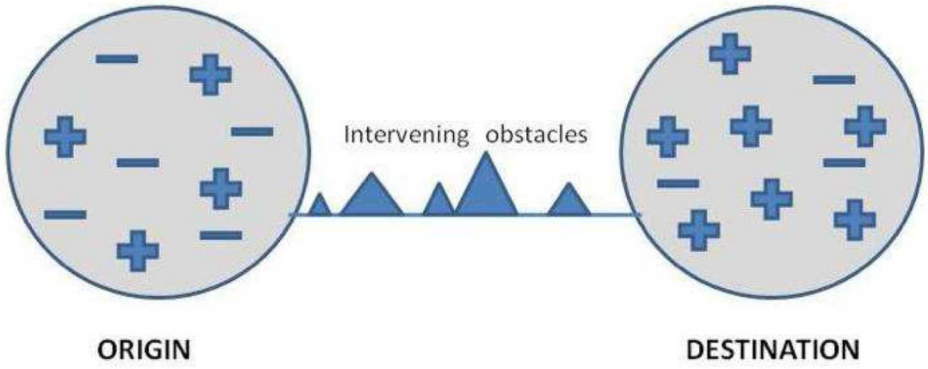
Unfortunately, the neoclassical view of migration has not escaped criticism. Boyle et al. (1998) and Arango (2000) criticise the neoclassical theory because the notion that "migration will equalize wages and employment levels between the sending and receiving areas" – as suggested by the neoclassical theory – seems not to happen. The neoclassical theory has further been criticised because of its view that poverty concentrations will only be temporary since migration will act as an equaliser (Cadwallader, 1992; Cushing, 1999). The theory has also been criticised on the basis that it assumes a homogeneous labour market, one in which local wages will increase as a result of migration. The availability of information for rational decision making, the disregarding of discrimination by the neoclassical model, the difficulty of measuring costs and benefits, and difficulty in respect of comparing the utilities derived from migration have also been seen as other

problems of the theory in explaining migration. Although it may still be regarded as a valid explanation for some forms of migration, it is not surprising that Greenwood (1975) concludes that wage-differentials are a poor determinant of migration and that there is a need to focus on other factors that may be responsible for migration (such as education, household characteristics, etc.). This realisation is also reflected in the work of authors such as Lewis (1954), Lee (1960), Todaro (1969) and Harris and Todaro (1970), all of whom contributed to the neoclassical view on migration.

Lewis (1954) attributes migration to the existence of a dual-sector economy, which has resulted from stagnation in the traditional rural (agricultural) economy and maintains that this stagnation is accompanied by a growing urban-sector economy. He further assumes that there is surplus, unproductive labour in the rural sectors, so that the marginal productivity in these sectors is close to zero and that this, in turn, results in migration to the growing urban areas. To increase productivity, the unproductive labour needs to migrate and this labour is again needed in the urban sector to ensure growth in that sector. The flow of labour is therefore mutually beneficial to both the rural and the urban sectors (Lewis, 1954).

Lee's (1966) extension to the theory of migration is based on push and pull factors. His push-pull perspective on migration divides the factors that cause migration into two groups: While the negative push factors are factors that push people into migration (such as unemployment, lack of opportunities, shocks, for example disasters or poverty), the positive pull factors (such as job opportunities, better living conditions, access to education, better social services) attract people to an area. The book Global Challenge by Witherick and McNaught (2001) summarises Lee's push-pull theory by indicating all push factors as negative and the pull factors as positives.

Figure 1.1: **Lee's push-pull theory**



Source: Witherick and McNaught (2001)

Todaro (1969) and Harris and Todaro (1970) also expanded on the neoclassical theory. The Harris and Todaro (1970) model of migration also assumes that there are two sectors – the rural agricultural sector and an urban manufacturing sector. They do not believe that the rural labour has a zero marginal product but that wages in the urban areas are higher than in the rural areas. The rural-urban migration decision is therefore based on expected income differentials between the rural and urban areas, rather than real wage differentials (the expected urban wage being based on the average wage in the urban sector). It is their contention that migration, even in the event of high unemployment in urban areas, may still be present, given the higher expected income that is based on the average income in the urban areas (Harris and Todaro, 1970).

The human capital migration theory developed by Sjaastad (1962) is a further extension of the neoclassical perspective on migration. This theory focuses on individual-level decision making. The basic human capital theory states that, to ensure an increase in the stream of future earnings over one's lifetime, an individual has to make present sacrifices. This can be ensured by investing in more education and training because the expected economic returns for higher-educated migrants are higher. Migration to a higher-paying job can therefore also be regarded as a human capital investment in that it entails present sacrifices to obtain higher future earnings. Since migration involves costs (such as transportation, the psychological costs of leaving family and friends, having to sacrifice current income, having to find new accommodation at destination, etc.), these costs must be weighed up against expected benefits (higher earnings, better lifestyle, etc.). The

decision to migrate will be made if the expected benefits of migration exceed the cost of migrating (Sjaastad, 1962; Clark, 1986).

The neoclassical and human capital theories both share the view that rural-urban differences in economic well-being persist because "migration is too slow, or too selective to match human capacity to economic opportunity" (Nord, 1998). Since migration favours higher-educated individuals, migration may deepen poverty: the poor are more likely to remain immobile in poor places, while the non-poor are more likely to move away (as noted by Foulkes & Schafft, 2010). Nord's (1995; 1998) work contradicts the latter perspective because it established that the poor move as much as the non-poor and that many poor migrants move out of the poorest counties. Other problems with the human capital model stems from the information needed in order to weigh up the costs and benefits. Precise information on expected income and costs (especially psychological costs) cannot be measured without error. Hence, when people choose to migrate, they are unable to make an accurate and rational choice. The conclusion that individual decisions – such as deciding to invest in human capital – may direct migration is also open to question. These points of criticism led to the development of a household view on migration embodied in the New Economics of Labour Migration (NELM) theory (also known as the new economics of migration).

1.2 The new economics of migration theory

Stark and Bloom (1985) officially developed the new economics of labour migration (NELM)). Since critics of the neoclassical perspective established that the decision to migrate is rarely made solely by an individual, the new economics theory on migration takes into account the role of families or households in the decision to migrate. The authors consider migration to be a "calculated strategy" (Stark & Bloom, 1985). The role of families and households in decisions regarding migration has since been widely recognised and is well documented (Bilsborrow et al., 1987; Greenwood, 1988; Lauby & Stark, 1988; De Haan, 1999; Taylor, 1999; Kok et al., 2003; King, 2012; Chand, 2013; Nguyen et al., 2013; Randell & VanWey, 2014).

Since migrants usually do not live alone but in households, families and family ties have an impact on the decision to migrate. It is for this very reason that the new economics of migration recognises this link and, although it assumes rational choices as does the neoclassical theory, it disagrees with the notion of individual utility maximisation. The theory rather sees migration as a means of risk diversification to ensure household survival (Junming, 1997; Arango, 2000; Kok et al., 2003; Zezza et al., 2005; Nguyen et al., 2013; Abdelali-Martini & Hamza, 2014). This theory explains migration as a method used by families to diversify their sources of income in order to minimise risks like unemployment and the loss of income due to unforeseen circumstances. Households will benefit from the migration of a family member to an area or a sector in which there is a negative correlation between the earnings and the area/sector of origin, or where the earnings are "statistically independent" (Stark & Bloom, 1985). In cases of risk, the family will be able to rely on remittances sent back by the migrants. The fact that migration and remittances will decrease any constraints regarding liquidity, investment or production may set in motion a developmental dynamic, which, in turn, will decrease poverty (Taylor, 1999).

As happens with any theory, proponents of the new economics of migration have been criticised for their view that families are an important influential factor in the migration decision-making process. Gelderblom and Kok (1994) criticised this view by indicating that not all individuals in a household have the same interests and that households do not always have an impact on individuals' decisions. Even though migration may diversify risk, the household members may however not agree as regards the decision to migrate. Another criticism of the value of the new economics of migration, as mentioned by Arango (2000), is not so much the theory's lack of theoretical autonomy, but rather its limited applicability. According to Arango (2000), most of the evidence in support of this theory stems from only a small number of rural villages in Mexico and not from other regions in the world. The NELM view is therefore not necessarily applicable to migration in other settings. King (2012) also indicates that the NELM theory is not applicable to situations in which the entire household migrates.

The points of criticism levelled at the theories discussed above clearly indicate that these models are unsatisfactory in terms of explaining migration decisions or the migration decision-making process. As a result, many other variations and additional explanations thus evolved over time in an effort to explain the migration decision-making process. Some of these general theories of migration are briefly described below:

1.3 Migration networks theory

Migration networks are a common and central explanation of migration (Zezza et al., 2005; King, 2013; Nguyen et al., 2013; Randell & VanWey, 2014). Massey et al. (1993) define migrant networks as "sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin". Ties with relatives and friends in destination areas are regarded as an important determinant of the decision to migrate. The network theory of migration does not specifically look at the determinants that serve to initiate migration, but rather at the reasons for continuous migration, even in the absence of wage differentials (Massey et al., 1993). The facilitating hypothesis argues that having relatives and friends at a distant location encourages and directs migration decisions by increasing the potential migrants' awareness of conditions and opportunities (De Jong & Fawcett, 1981).

Because migration networks lower the costs and the risk of moving (due to the availability of information, the availability of transport and accommodation, and the provision of support and financial assistance), they ensure that the expected net returns of migration increase and therefore encourage migration. Migration can thus be self-feeding, self-regulating and self-modifying as information via the network supplies potential migrants with information regarding opportunities or threats in destination areas (King, 2013). This led Massey (1999) to conclude that migration is a "self-perpetuating and self-sustaining phenomenon". Empirical testing of migration networks was initially difficult and not widely undertaken until, that is, the theory on migration networks had been expanded to include the role of social capital (migration networks) in the decision to migrate.

1.4 Gravity model

The gravity model of migration is based on Sir Isaac Newton's law of universal gravitation and was used by Ravenstein (1889) to explain migration patterns in the 19th century in the United Kingdom. The law of universal gravitation states that "the gravitational force between any two bodies is directly proportional to their masses, and inversely proportional to the square of the distance between them" (Newton, 1729). The application of Newton's law of universal gravitation to migration resulted in the introduction of the distance between the place of origin and the destination area as an explanation for migration.

According to the gravity model's formal explanation of migration, "the number of people moving (migration) between area A and area B, is equal to the population in area A, multiplied by the population in area B, divided by the square of the distance between them" (Luneknight, 2011).

$$Migration_{AB} = \frac{Population_A \; X \; Population_B}{Distance^2}$$

The distance between the two areas is expected to have a negative effect on migration: the greater the distance between the two areas, the less information is available to potential migrants. Kok et al. (2003) indicate that information costs rise with distance because it involves higher search costs so as to obtain information about possible destinations. A further result of the deterring effect of distance on migration is that it has an influence on costs: since longer distances are usually associated with higher transportation costs, higher opportunity costs and higher psychological costs, more time is required to move (Kok et al., 2003; McConnell et al., 2006).

1.5 Value-expectancy theory

The value-expectancy theory states that the most important micro-, meso- and macro-level causes of migration operate indirectly via the respective values and expectations people place on certain variables (Kok et al., 2003). The basic components of the value-expectancy model are goals (individuals' values or objectives) and expectancies (the

subjective probabilities that individuals place on certain outcomes) (De Jong and Fawcett, 1981). The values for determining the probability to migrate can be obtained via respondents' ratings of goals they want to achieve by the move. Expectancies are obtained via respondents' perceptions of the chances they have of achieving their various goals in their current place of residence and in the alternative destination. The strength of the migration intentions (MI) (see equation 1.1) is obtained by summing the products of the multiplicative relationships between the value of a specific outcome (V_i) and the expectation that migration will lead to the desired outcome (E_i) (Kok et al., 2003).

$$MI = \sum V_i * E_i \text{.....[1.1]}$$

Gardner (1981) indicates that though not that simple, it is important to integrate multi-level determinants (such as sociocultural, demographic, personal and economic factors) in the value-expectancy model in order to determine whether to migrate or not.

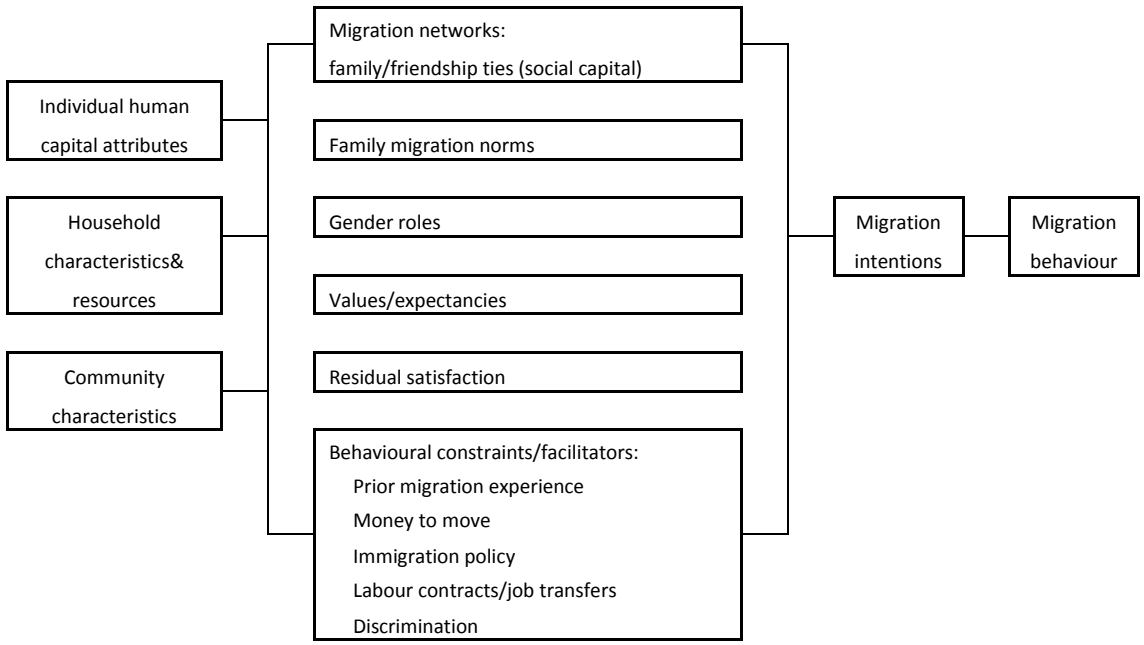
1.6 General model of migration decision-making

The general model of migration decision making by De Jong (2000) views the migration decision as a function of three main dimensions: human capital attributes, household characteristics and resources, and community characteristics. De Jong (2000) elaborates on the most general migration models, while incorporating both economic and non-economic factors. Non-economic explanations include family networks and migration networks (social capital), family migration norms and gender roles. Residual satisfaction, behavioural constraints and the values and expectancies from the value-expectancy model are also incorporated in his model. De Jong (2000) concludes that all these factors influence the migration intentions of individuals and that they culminate in migration behaviour. Figure 1.2 below summarises De Jong's (2000) general model of migration decision making.

It is therefore evident from the above that a great number of factors, both economic and non-economic, influence the decision to migrate. Despite there being a relatively lengthy research tradition on migration, there is no single theory that captures the full complexity of (internal) migration (Van Hear, 2010; King, 2013). Especially as regards poverty,

researchers have concluded that poor individuals and poor households follow different or modified rules and processes when they decide to migrate (Fitchen, 1995; Nord, 1998; Schafft, 2006; Foulkes & Newbold, 2008; Prins, 2009). Individual, household or community characteristics that influence the individual/household decision to migrate and remit may therefore differ when the individual/household is regarded to be poor.

Figure 1.2: **De Jong's general model of migration decision making**



Source: De Jong (2000: 310)

Despite their differences, all of the theories attempt to explain migratory moves by individuals or households and these indisputably have economic and non-economic effects on both the sending and the receiving area. Many of these effects are the result of remittances that are mediated through the migratory process (De La Fuente, 2010).

2. A THEORETICAL PERSPECTIVE ON REMITTANCES

Addison (2004: 5) defines remittances as "that portion of migrants' earnings sent from the migration destination to the place of origin". Remittance flows represent any monetary and/or in-kind transfers that migrants send home to family members or other beneficiaries, whether via formal or informal channels (World Bank, 2005). Given that

remittance flows are not only recorded via formal channels, this makes it difficult to analyse the true impact of these flows (Ratha, 2005). In fact, unrecorded remittance flows through informal channels are believed to be at least 50 percent larger than the recorded flows (Ratha, 2005). Irrespective of the channel of transfer, remittances are however regarded as a significant source of income, especially for the poor. Different types of remittances and motives for remittances however have different implications for the poverty-alleviation potential of remittances.

2.1 Types of remittances

The different types of remittance and the motives for remitting are inter-linked. Monetary and in-kind remittances are referred to as economic remittances. Goldring (2004), building on previous literature, distinguishes three categories of economic remittances. Family/individual remittances are seen as a source of income and therefore spent on individual, household or family expenses (such as rent, consumption goods, etc.). Because family/individual remittances are viewed as income, they will also have a poverty-reduction effect. Whether this however will lead to development depends on the particular definition of development. Only if this definition of remittances includes aspects such as spending on health and education, will it be considered to have an impact on development. Unlike family/individual remittances, collective remittances, on the other hand, are not viewed as income to be used to defray expenses. Collective remittances are regarded as a source to be used for development. Collective remittances are remittances (usually through the agency of migrant organisations) that are raised by a group to be used for investments in order eventually to benefit a group or community with which it is affiliated (such as spending on infrastructure or social development projects that benefit the community by, among others, creating, employment and increasing local economic growth). This means of raising funds for development is therefore believed to have a long-term impact on development that benefits an entire area or community. Investment remittances (as is the case with collective remittances) are not only viewed as income that is spent on daily consumption, but also as a source that may lead to development. Investment remittances are money sent back by migrants to their home areas for the use of specific investment opportunities (such as investing in a home or a business venture). These investment opportunities do not necessarily benefit

a larger group of people but only the migrant or the migrant's family and they also enhance the possibility of return migration.

Other types of remittances are mostly defined by the non-economic nature of remittances. Whereas the term technical/technological remittances is used for the knowledge, skills and technology brought back by returning migrants (Nichols, 2002), the term political remittances denotes the changes in political identities, demands and practices associated with migration (Goldring 1998, 2002, 2004; Fitzgerald, 2000). The term social remittances is sometimes used to describe the diffusion of various types of social practices, ideas and values, mainly to the migrant-sending areas (Levitt, 1998). Studies have indicated that there is a full set of social remittances offered by return migrants, which include knowledge, ideas and good practices such as human rights, equality, charity initiatives, etc. (Evans, 2000; De Haas, 2005; Faist, 2008). Although, it is generally agreed upon that return migrants contribute to knowledge and the existing support systems (social capital), not all return migrants contribute positively, since not all migrants either overcome the local distrust of others or are open to adjustments (Conway, Potter, St. Bernard, 2012). Nevertheless, Conway et al. (2012), suggest that the social remittances (knowledge, skills and experience) migrants bring back when they return may even be more important than the monetary remittances they send home. These return migrants, it is argued, are 'agents of social capital accumulation', hence, non-economic remittances also have development impacts.

As indicated above, the different kinds of remittance – as defined by the literature – predominantly refer to their use or to the effect that they have on the receiving household or community. There is an abundance of literature on the reasons for remitting, especially insofar as such motives are tied to the effects that remittances have on the receiving households.

2.2 Motives for remitting

The impact of remittances can only be determined by taking into account the different motives for remitting. The following are the most-documented motives for remitting:

2.2.1 Altruism

Altruism in this context is defined by Lucas and Stark (1985) as "the care of migrants for those left behind". These remittances emanate from the affection and responsibility towards the well-being of the family (Becker, 1974; Lucas & Stark, 1988; Stark, 1991; Solimano, 2003). The altruistic nature of remittances also assumes that there is always some kind of satisfaction to be derived from remitting, which is born out of the concern the migrant has for the welfare of his/her family or the receiving party (Johnson & Whitelaw, 1974; Banerjee, 1984; Lillard & Willis, 1997; Agarwal & Horowitz, 2002; Adaawen & Owusu, 2013). The altruistic motive assumes that migrants are part of the extended household that reduces the risk of impoverishment by diversifying the sources of income and smoothing consumption in times of transitory income shocks (Gubert, 2002; IMF, 2006; Singh et al., 2009; Frankel, 2011; Lim & Morshed, 2015). Migration is therefore seen as a family decision and the act of remitting is part of fulfilling family obligations (Chimhowu et al, 2003; Maphosa, 2007). Since migration is a strategy to spread risk and to improve the living conditions of the home household, any change that will affect the well-being of the household back home, will be accompanied by an increase in either the amount or the frequency of remittances sent by the migrant as a result of his/her altruistic behaviour (Lianos & Pseiridis, 2011), so that poorer households receive more frequent/generous remittances than do richer ones. The converse is unfortunately also true: under altruism, the presence of multiple remitters may serve to reduce the frequency and size of remittances (Agarwal & Horowitz, 2002), the reason being that, as multiple remitters now remit money back home, each remitter remits less to maintain the set level of well-being in the sending area.

Though altruistic remittances may have a positive effect on household welfare, Barro (1974), Becker (1974) and Brown and Jimenez (2011) warn against the crowding out of private altruistic transfers by public transfers. This leads to a situation where the effect of altruistic behaviour on household welfare is negligible or even negative.

2.2.2 Self-interest

Household arrangements, particularly within extended families, are more complex than the notion of altruism suggests. Remitting cannot be explained by only a single and simple

motive such as altruism. Self-interest, as a motive for remitting to the remitter's home household, stems from purely selfish reasons that originate from economic and financial self-interest (Cox, 1987; Hoddinott, 1994; Cox et al. 1998; De la Briere et al., 2002; Sana, 2005; Adaawen & Owusu, 2013). Lucas and Stark (1985) identify three main selfish motives. The first stems from the probability that the member will inherit, which means that remitters send money back home in the hope of benefiting from the households' gratitude in the form of a household inheritance. The second involves investing in assets back home so as to ensure that they are carefully maintained. In such a case, the remitter sends money home for investment purposes and the receiving family normally acts as the trusted agents who take care of these investments (Adaawen & Owusu, 2013). The third selfish motive is found where the migrant intends to return home. The migrant therefore sends remittances to be invested in fixed capital assets – such as the purchase of property or land – or for engagement in other ventures. All of these investments are taken care of by the family until the remitter eventually returns home or until the migrant retires in the home community (or country). In each of these cases, the remitter expects something in return for his/her remittances (Jimenez & Brown, 2012).

Whereas remittances driven by self-interest are likely to be positively related to the recipients' income or to positive returns on investment made in the home community (or country), any economic or non-economic shocks or decreasing levels of wealth in the home family will not be matched by increases in either the volume or the frequency of the remittances that are driven by self-interest.

2.2.3 Co-insurance motive

Stark and Lucas (1988) posit a third theory in respect of remittances, namely a dualistic approach in which remittances are part of an intertemporal, mutually beneficial contractual arrangement between a migrant and the home household. The co-insurance motive views remittances as a mutual risk-diversification arrangement between the migrant and the household (Stark & Levhari, 1982; Stark and Lucas, 1988; Rosenzweig, 1988; Solimano, 2003), which involves an implicit contract between families and those who migrate. The assumption behind the co-insurance motive is that migrants will face different threats and risks that are unconnected with those that the household faces. The

migrant and household therefore diversify their risk by the one acting as co-insurer to the other. The migrant remits to the household during tough economic times experienced by the home household (or community), while the household again supports the migrant during tough economic times at the employment destination. Similar to remittances driven by altruism, remittances driven by the co-insurance motive are also positively related to any decrease in the well-being of the household.

2.2.4 Investment motive

The investment motive of remittances is an elaboration of the co-insurance motive. The investment motive involves an element of loan repayment (Addison, 2004), one in which the family either invests in the education of the remitter or finances the migratory move of the remitter (Lucas & Stark, 1985; Stark & Bloom, 1985; Stark, 1995; Poirine, 1997; Ahlburg & Brown, 1998; Cai, 2003; Rapoport & Docquier, 2006; Ruiz & Vargas-Silva, 2009; Garip, 2012). This "loan" is then an element of the motive to remit to the household as repayment. The repayment of the "loan" usually starts only after the migrant has settled at the new destination and is earning an income (Adaawen & Owusu, 2013).

This implies that any changes to the well-being of the home household will have no significant influence on the amount or the frequency of remittances sent by the remitter. Remittances are also expected to decrease or, after a while, stop – this indicating that a full repayment of the "loan" has occurred.

2.2.5 Multiple motives

Though there seem to be several motives for remitting, no specific motive seems consistently to have been ranked higher or selected in preference to the others. It is therefore generally recognised that remittances are driven by more than one motive (De la Briere et al., 2002; Tong & Piotrowski, 2005; Niimi et al., 2009; Ruiz & Vargas-Silva, 2009; Brown & Jimenez, 2011; Adams, 2011; Shimada, 2012).

The existence of multiple motives for remitting is well researched and copiously documented. Lucas and Stark (1985) started with the pioneering work on multiple motives when they focused on migration in Botswana. They proposed alterations to pure

altruism and self-interest, and concluded that some remittances are intended for the repayment of funding for education and for the migration of the migrant (such as the "loan repayment" motive). Hoddinott (1994), drawing on data from Kenya, rejected altruism as the sole motive to remit and indicated that the threat of losing the right to inheritance resulted in inheritance and loan repayment as motives for remittance. Brown (1997) concluded that, in addition to altruistic intentions, self-interest, together with motivation to invest and the accumulation of assets figured strongly as motives among migrants from Tonga and Western Samoa. Secondi (1997) found that in China, not only altruism but self-interest (exchange) were important motives as regards remitting. Here, the exchange motive referred directly to "payment for services" in instances where elderly parents took care of the children and the remitter compensated the parents for the service via remittances.

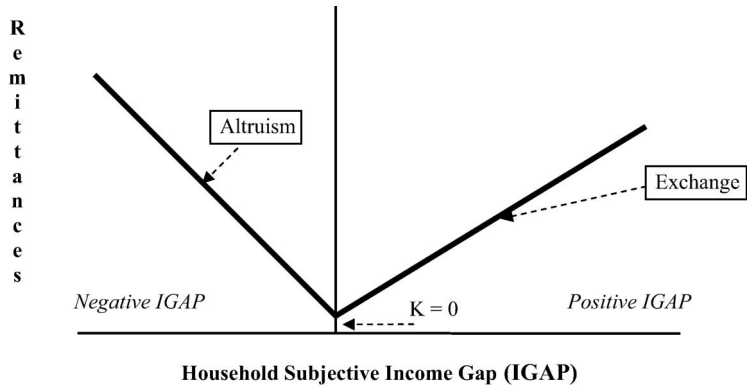
De la Briere et al. (2002), in a study of rural households in the Dominican Republic, established that the motives for remittance behaviour varied by destination (internal or international), gender and by household composition. The main conclusions indicated that international female migrants seemed generally to remit more under the insurance motive, remitting more frequently or more generously in cases where the origin household (parents) had experienced the financial shocks of illness. International remittances (irrespective of gender) seemed to be highly correlated with the investment motive. Such remittances tended to increase where a potential inheritance was at stake.

Amuendo-Dorantes and Pozo (2006) used data on Mexican migrants in the USA and established multiple motives for remitting, such as altruism and co-insurance. Vargas-Silva (2008) used data from Columbia and found that especially the self-interest motive but also altruism were both important motives in respect of remitting. According to Shimada (2012), a single motive cannot explain why migrants send remittances. He therefore maintains that altruism may not only influence the decision to remit but also the decision to migrate. He also indicates that, since migration is a precondition for any remittance-related motive, altruistic persons will not remit if they do not migrate.

Some researchers also believe that household income influences the remittance motive. At low-income levels below a threshold, the altruistic remittance motive is dominant and the relationship between the recipients' incomes and the levels of transfer is negative. Once the threshold level has been reached, the exchange (self-interest) motive becomes dominant and the relationship changes to a positive one (Cox, 1987; Cox et al., 1998, 2004; Tong & Piotrowski, 2005; Brown and Jimenez, 2011).

Cox et al. (1998, 2004), focusing on the Philippines, suggested that a non-linear relationship exists between transfers and recipients' household income. Tong and Piotrowski (2005) who had conducted their research in Thailand, came to the conclusion that the wealth status of the recipient household resulted in different motives for remitting (and also for deciding to return home or not). Brown and Jimenez (2011) confirmed the non-linear relationship established by Cox et al. (1998, 2004), but focused on data from Tonga. Similar to Cox et al. (2004) they elaborated on the mixed motives and concluded that altruism played a major role in households below a subjective threshold [using a different method than the one used by Cox et al. (2004)]. Brown and Jimenez (2011) further found that remittances provided an important form of social protection for the poor and that the motive changed when the threshold had been reached. These authors are responsible for introducing the mixed-motive relationship between remittances and the subjective income gap (IGAP) as indicated in Figure 1.2 below. The subjective income gap is the difference between the household's actual consumption level and the subjective living norm, which is defined as the subjectively assessed needs or the required level of basic needs of a household. The IGAP therefore represents the difference between the household's pre-remittance income and what the household and the remitter consider to be the actual amount required to maintain an adequate standard of living. The hypothesised motive for remitting, given the IGAP, is shown in Figure 1.3 below.

***Figure 1.3*: Relationship between remittances and the subjective income gap (IGAP)**



Source: Brown & Jimenez (2011: 833)

In the case of subjectively poor households with a negative IGAP (meaning the required level of income they need is more than their actual pre-remittance income), transfers (remittances) are driven by altruism. However, once the threshold K is reached, the motives for remitting become exchange (self-interest) driven. Thus, when a household experiences a positive IGAP (meaning that the pre-remittance income is higher than the required level of income), remittances are driven by the exchange motive (Brown & Jimenez, 2011).

3. MIGRATION, REMITTANCES AND POVERTY

The economic and the non-economic nature of remittances contribute to the controversy regarding whether remittances have positive or negative effects on the remittance-receiving areas.

Remittances are less volatile, countercyclical and therefore an important source of income (IMF, 2005; Ratha, 2005). In principle, remittances directly increase a household's level of income and may decrease poverty. Remittance flows also have indirect effects on economic growth and the gross domestic product via the co-insurance and investment motives, which in their turn also influence levels of well-being. Chimhowu, Piesse and Pinder (2005) also highlight the fact that poverty reduction involves more than just raising cash income and consumption: capacity also has to be built so as to escape poverty in the longer term.

It is not surprising that the effects of migration and remittances have been extensively researched. These include the impacts of migration and remittances on the following, among others:

- Consumption smoothing, wealth accumulation and investment (Quisumbing & McNiven, 2010; Yang, 2011; Chiodi et al., 2012; Ali & Khan, 2014; Garip, 2014)
- Education (Taylor, 1992; Cox-Edwards & Ureta, 2003; Yang & Martinez, 2006; Lu, 2011; Mueller & Shariff, 2011; Koska et al., 2013; Acharya & Leon-Gonzalez, 2014)
- Health (Kanaiaupuni & Dunato, 1999; Brummer, 2002; Frank & Hummer, 2002; Hosegood & Ford, 2003; Crush et al., 2005; Lu, 2012)
- Labour supply (Rodriguez & Tiongson, 2001)
- Entrepreneurship (Massey & Parrado, 1998; Woodruff & Zenteno, 2004)
- Growth and development (Nord, 1998; Sander, 2003; Sander & Maimbo, 2003; Adams & Page, 2005; Maimbo & Ratha, 2005; Ruiz-Arranz & Giuliano, 2005; Acosta et al., 2006; Ozden & Schiff, 2006; Adams, 2011)
- Exchange rates (Amuendo-Dorantes & Pozo, 2004; Rajan & Subramanian, 2005)
- Income inequality (Barham & Boucher, 1998; Brown & Jimenez, 2008; Odozi et al., 2010) and
- Well-being and poverty (Adams & Page, 2005; Lopez-Cordova, 2005; Page & Plaza, 2005; Taylor et al., 2005; Acosta et al., 2006; Adams, 2006; Yang & Martinez, 2006; Brown & Jimenez, 2008; Semyonov & Gorodzeisky, 2008; De La Fuente, 2010; Foulkes & Schafft, 2010; Brown & Jimenez, 2011; Nguyen et al., 2013)

It is frequently argued that remittances are a safety net for the poor and that migration plays a key role in the survival and livelihood strategies of poor households (Mazid & Aw-Hassan, 2002; Abdelali-Martini et al., 2003; Rapoport & Docquier, 2006; Thieme & Wyss, 2005; Zezza et al., 2005; La Rovere et al., 2006, 2009; Khatri, 2007; Sienaert, 2007; Pfau & Giang, 2010; Chand, 2013; Nguyen et al., 2013). According to the IMF (2007), “remittances are private intra-family or intra-community income transfers that directly address the single most relevant challenge for Sub-Sahara-Africa, which is poverty”. Migration and poverty are therefore linked through the flow of remittances between migrants and their sending households and have been extensively investigated. Although

research on migration and remittances originally assumed that remittances were primarily spent on current consumption, producing neither long-term investment nor productive effects, more recent empirical literature suggests a strong positive correlation between remittances and household welfare. However, no definite consensus has as yet been reached regarding the direct impact of remittances on household welfare as is reflected in the following summary of more recent empirical evidence.

The following approaches are predominantly used in empirical work on the links between migration, remittances and poverty. The first method is the simple exclusion of remittance income from household income. In this method, household poverty levels are determined by including all household income, which is then compared with the levels of poverty – assuming remittance income is excluded from household income (here referred to as the "variance method"). Despite its being widely criticised because of its simplicity, it is probably the most commonly used method. The second method uses the instrumental variables approach to deal with endogeneity and is a method that has been employed since the 1920s. The instrumental variable (IV) approach usually focuses on estimating the effects of cross-regional variations in migration and remittances (instrumented with rainfall and distance) on the regional poverty rates (Lopez-Cordoba, 2004) [see Wright (1928) or Arellano & Bover (1995) for a detailed discussion of the instrumental variables approach].

The third method is known as a counterfactual method. This method recognises the possibility of overestimating the impact of migration and remittances on poverty if remittance income is simply excluded from household income. This approach assumes that migrants will be employed in the absence of migration and therefore calculates an imputed income for the migrant in the absence of migration. This imputed income is then included in the household income before calculating the household level of poverty, which is then compared with the level of poverty in the presence of migration and remittances (see Adams (1989) for more detail on the counterfactual method). The fourth method uses propensity score matching (PSM). This method corrects for the non-random selection of migrants or migrant households and in it, each household is allocated a propensity score in terms of the probability that they will migrate. Each migrant

household (treated observation) is then compared with a similar non-migrant household (control variable) on the basis of their propensity score. This is known as propensity score matching (PSM). Once a migrant household (treatment) is matched with the non-migrant household (control) that most closely resembles it, the observed income of the control is imputed to the treatment. This is then used to determine the effects that migration and remittances have on household poverty (see Caliendo and Kopeinig (2008) for practical guidance regarding the implementation of PSM).

According to the empirical literature, remittances impact poverty and household welfare in origin households as follows:
Adams and Page (2005), in a cross-country study of seventy-one developing countries, found international migration and remittances to have a strong, statistically significant impact on the reduction of poverty. They concluded that a 10% increase in international remittances would serve to decrease poverty by 3.5%. Adams (2006) shortly afterwards investigated the impact of international remittances on 115 developing countries and determined that remittances not only tended to reduce the level and depth of poverty, but that they also resulted in an increase in the receiving households' spending on investment goods such as education and housing.

Acosta et al. (2006) reviewed previous empirical literature on the impact of remittances on poverty in Latin America and found that remittances had a marked poverty-reducing effect. On a macro level, they established that a 1% increase in the remittances to GDP ratio would, on average, lead to a reduction in headcount poverty of between 0.35% and 0.40%.

In another paper, Acosta et al. (2008) employed data on 10 Latin American and Caribbean countries (LAC) to investigate the effects of remittances on poverty. Using different instrumental variable and counterfactual approaches, they confirmed that remittances had a negative (though sometimes small) poverty-reducing effect. On a micro level, their counterfactual approach results indicated that moderate and extreme poverty would fall by respectively 0.57% and 0.50% for every percentage point increase in the remittances to non-remittances household income ratio. The moderate and extreme poverty depth

reduced by respectively 2% and 4% for a 1-percentage point increase in the remittances to non-remittances household income ratio.

Semyonov and Gorodzeisky (2008) investigated the effects of international migration and remittances on the economic well-being of households in the Philippines. Although they neglected to indicate specific estimates, they found that though remittances were mostly used for consumption purposes, they nonetheless resulted in significantly higher levels of income in remittance-receiving households than in households not receiving international remittances.

Brown and Jimenez (2008) employed the counterfactual household income method and found significant evidence that migration and remittances played an important role in the alleviation of headcount poverty and also in the depth and severity of poverty in both Fiji and Tonga. They also concluded that different methods (such as the counterfactual approach) resulted in different estimates of the poverty-reducing effects of remittances.

Giannetti et al. (2009), using cross-sectional data, also subjected to scrutiny the role of remittances as a tool for reducing poverty. They focused their poverty analysis on four eastern European countries and found that remittances decreased the level of poverty in the four countries by between 0.6% and 6.3 per cent.

Lokshin et al. (2010) focused on the impact of both internal and international labour remittances on poverty in Nepal. An instrumental variables (IV) approach was used to deal with the possibility of selection. They concluded that one-fifth of the poverty reduction that had occurred between 1995 and 2004 had been attributable to both migration and the accompanying remittances.

Wang (2010) aimed to determine the effect of remittances on the level of poverty in two provinces in rural China. His micro-level results indicated that, by excluding remittances from household income, the headcount poverty rate would, on average, be 10.06 percentage points higher than when remittances were included in household income. Zhu and Luo (2010), in a study of another province in China, came to a similar conclusion,

namely that migration and remittances served to increase rural household income significantly, which led to a decrease in poverty. They indicated that the incidence of poverty would be 14.7 percentage points higher if remittances were excluded from income. The depth and the severity of poverty would respectively be 7.3 and 4.4 percentage points higher in the absence of remittance income. Both Wang (2010) and Zhu and Luo (2010) concluded that migration noticeably reduced rural poverty in China.

Together, migration and remittances are an important livelihood strategy in the Philippines. According to Quisumbing and McNiven (2010), remittances positively influenced expenditure on housing, consumer durable goods and non-land assets, and had a positive effect on overall expenditures (including those on capital, assets and education) in the Philippines. Remittances therefore served to reduce local poverty.

Nguyen et al. (2011) estimated the impact of both work and non-work migration on household poverty and inequality in Vietnam. Both work and non-work migration were found significantly to increase per capita expenditure. They further established that remittances from non-work migration significantly decreased the incidence, the depth and the severity of poverty of Vietnamese households. Excluding remittances from migrant household income served to increase the incidence of poverty by 8.9 percentage points. The depth and the severity of poverty were respectively 0.041 and 0.023 lower when remittance income was included in migrant household income. Remittances from work-migration households had a smaller effect but also decreased the incidence of poverty (by 2.8 percentage points, although the difference was not statistically significant). The depth and the severity of poverty in migrant households were also significantly lower in respect of work migration as with non-work migration (0.016 and 0.008, respectively). Nguyen et al. (2011) thus concluded that migration and remittances significantly reduced poverty in Vietnam, in particular non-work migration.

Jimenez and Brown (2012) researched the effect of remittances on poverty in Tonga. Their propensity score matching (PSM) approach established that remittances significantly reduced not only the incidence of poverty by a substantial 31 per cent but also the depth of poverty by a significant 49 per cent.

Hobbs and Jameson (2012), focusing on Central America, investigated the impact of migrant remittances on poverty in Nicaragua. They adjusted their data for sample selection by using the Heckman sample-selection technique to compare the results with a situation in which migration did not occur. These authors found that the poorest and the middle classes benefited most from migration. Their results indicated that, although only a small number of the poor benefited from remittances, remittances reduced the headcount poverty rate from 37.1% to 36.5% (0.6 percentage points) and the depth of poverty from 0.129 to 0.128 (0.001 percentage point).

In Asia, Betti and Lundgren (2012) studied the impact of labour remittances on poverty in Tajikistan. Their results showed that, by excluding remittances from recipient household income, the number of individuals below the poverty line increased from 55% to 82%. They also concluded that, in the absence of migration and assuming that the migrant did not move and stayed part of the household, the burden of support in the household increased and the percentage of individuals living in poverty increased even further to 88%.

Chiodi et al. (2012) concluded that households in Mexico used migration and remittances to overcome financial constraints and that this strategy therefore accelerated productive asset accumulation (which had a poverty-reduction effect).

Pfaue and Giang (2010), like Nguyen et al. (2011), focused on Vietnam. They found that international remittances reduced poverty. Nguyen et al. (2013), also using data on Vietnam, employed propensity score-matching techniques to demonstrate that migrant households benefited directly from migration by moving out of poverty. In addition, they established that migration and remittances had a significantly positive indirect effect on non-migrant households by generally improving the poverty situation in the rural community.

Abdelali-Martini and Hamza (2014) found that migration has a positive impact on rural livelihoods (and poverty) because remittances represented more than 50% of the annual per capita income in rural Syrian households.

Garip (2014) concluded that migration and remittances had an equalising effect on wealth distribution in rural Thailand in that poor households gained productive assets from migration and remittances, while richer households lost productive assets with migration (this potentially being due to the reduction in local labour supply to maintain local economic activities).

Using time-series data, Gaaliche and Zayati (2014) investigated the causal relationship between remittances and poverty reduction in 14 emerging and developing countries and confirmed that remittances had a poverty-reducing effect.

In his paper based on data from El Salvador, Naatus (2014) concluded that remittance income had the potential to help alleviate poverty in developing countries and then especially extreme poverty. His results indicated that an average increase of $100 in monthly remittances per person would decrease the level of extreme poverty by 24%.

Some studies investigated the effects of migration and remittances on poverty in African countries. Focusing on Africa, Adams (1989), in his paper, did pioneering work on a sample of households in Egypt by being the first to use the counterfactual approach to determine the impact of migration and remittances on poverty. He indicated the poverty-reducing effect of remittances to be even stronger than had originally been estimated by general estimation methods. He thus concluded that one's particular choice of methodological approach to estimate the impact of migration and remittances on poverty could lead to different conclusions.

Gustafsson and Makonnen (1993) focused on Africa. Investigating the effect of remittances on the extent and structure of poverty in Lesotho, they found remittances to be an important source of income in this country. If remittances were no longer to

contribute to family income, an additional 11% to 14% of the Lesotho households would fall into poverty.

A couple of studies investigated the effect of migration and remittances on poverty in Nigeria. Chukwuone et al. (2008), using propensity score matching, established that both internal and international remittances reduced the incidence, the depth and the severity of poverty in this country. Odozi et al (2010), who likewise focused on remittance flows in Nigeria, found this country to be the single largest recipient of remittances in sub-Saharan Africa (SSA). Employing a counterfactual method, they determined that remittances alleviated headcount poverty by 20%. Waheed et al. (2013) found that a 10% increase in domestic remittances decreased the incidence of poverty in Nigeria by 1.8% and that both the depth and severity of poverty would decrease by about 1.6%. Fonta et al. (2015) also concluded that the bulk of remittances (74.3%) in Nigeria were still primarily being used to subsidise household consumption (including spending on education and health), but not on productive investments, thereby decreasing the long-term effect remittances may have on poverty.

Schiff (2008) focused on surveys in Ghana (and Albania) to emphasise the fact that migration increases household income and decreases poverty but that the overall effects are underestimated because migration influences the origin household size. He indicated that remittances had decreased the headcount poverty in households with remittances in Ghana by 4.1% compared with households without remittances, while both the depth and the severity of poverty decreased respectively by 5.8% and 7.4%. When household sizes in Ghana were adjusted by the number of resident migrants, per capita household income increased further, which means that remittances then decreased the incidence, the depth and the severity of poverty by respectively 17.3%, 23.3% and 28.1%. Hence, the specific methodology that is used to estimate the impact of remittances and migration on poverty will have an effect on the magnitude of the estimated effect on poverty.

Anyanwu and Erhijakpor (2010) used panel data to investigate the impact of international remittances on poverty reduction in 33 African countries. They employed both ordinary

least squares (OLS) and instrumental variables (IV) combined with generalised method of moments (GMM) methods and established that, on a macro-level, a 10 per cent increase in official international remittances as a share of GDP led to a 2.9 percent decline in the poverty headcount, while a similar increase in remittances would decrease the depth of poverty by 2.9 per cent and the severity of poverty by 2.8 per cent.

Further research in Ghana by Adams and Cuecuecha (2013) investigated the impact of internal and international remittances on poverty. Based on counterfactual probabilities of being poor, their results revealed that internal remittances reduced the probability of being poor by 16.9%, while international remittances reduced the probability of being poor by a significant 96.6%.

Bouoiyour and Miftah (2014) assessed the impact of remittances on household expenditure and relative poverty in Morocco by using propensity score matching. Their results revealed that remittances had a significantly positive influence on household expenditure. The magnitude of the impact on poverty differed by area. Remittances decreased the probability that rural households would be poor by 11.3 percentage points, while the probability of being poor decreased by only 3 percentage points in urban areas.

Beyene (2014) used counterfactual consumption and selection-corrected estimation to investigate the effects of international remittances on poverty and inequality in Ethiopia. Their results revealed a significant reduction in the incidence, the depth and the severity of poverty. Remittances resulted in a decrease in headcount poverty in Ethiopia from 0.41 to 0.38 (0.03 points), while the poverty gap decreased from 0.14 to 0.13 (0.01). International remittances decreased the severity of poverty from 0.064 to 0.057 (0.007).

Biyase (2012), in one of the only South African studies of this nature, applies the “variance method” to data from the 2008 baseline of the National Income Dynamics Study (NIDS) and finds that the poverty headcount, pre- and post-remittances, is respectively 67.0% and 47.7%. Biyase (2014) also used the 2008 and 2010 panel data set of the National Income Dynamics Study (NIDS) to investigate the impact of remittances on poverty in South Africa. He employs a fixed effects estimation on the panel data to avoid unobserved

heterogeneity. His results confirmed that remittances have a strong statistically significant negative impact on poverty, decreasing the headcount poverty, the poverty gap and the squared poverty gap respectively by 0.03%, 0.06% and 0.078%.

It is evident from the above that migration and remittances have a positive influence on decreasing the incidence, the depth and the severity of poverty, irrespective of the method of analysis. In addition, the indirect effects of remittance on the local economy should not be ignored. Indirect effects include higher local spending (due to remittances) that stimulates the local economy and which, in turn, results in increased employment opportunities and thus helps to address unemployment (and poverty).

Not all results however show that migration and remittances have a positive effect on poverty at the individual and household level. It has been found that remittances may decrease the incomes of poorer origin households (Adams, 1992; Taylor, 1992; Taylor et al., 2008). A possible reason is that remittances from migrants, who usually are the most productive household members, do not necessarily make up the loss incurred from the migration of the individual, as remitters will only remit part of their income. Other studies have focused on a comparison between migrating and non-migrating individuals and/or origin and destination households. Mimura and Mauldin (2005) determined that Americans who had migrated from rural to urban areas stayed in poverty longer than those who had not migrated. They also indicated that this was even more applicable to young adults who had grown up in poverty. They concluded that those who grew up in poverty would stay poor even if they migrated. Migration and remittances are therefore not a solution to poverty. According to Weber et al. (2007), migration seemingly leads to poverty reduction in the United States. However, once one controls for human capital, migration does not reduce the risk of poverty and is therefore not a good strategy for rural poverty reduction. This seems to be even more evident among blacks. Driskell and Embry (2007) investigated blacks living in non-metro areas (especially those in the "Black Belt" region of the United States) who had migrated to other non-metro areas. They concluded that migration was not always a means of escaping poverty and was dependent on the area to which one migrates. Blacks were therefore sometimes better

off when they stayed in the familiar, non-metro region in which they were then staying than when they migrated.

Some authors moreover maintain that it is not necessarily the poorest who benefit from migration and remittances (given the direct cost associated with migration and the indirect costs such as psychological issues or the disruption of families). Du et al. (2005) focused on China and established that although migration increased household per capita income by between 8.5% and 13.1%, the overall impact on poverty was only modest, mostly because the poorest were unable to migrate. Others (such as Zezza et al., 2005) indicate that the poor can only benefit from internal migration and remittances (since international migration is more costly and usually involves higher levels of education that are also not always readily available to the poor). Zezza et al. (2005) found that internal and international migration had different effects on poverty: poverty served as a push factor for internal migration, while it constrained more costly international migration even though migrant networks helped poorer households overcome these barriers to international migration. This finding runs counter to the original findings by Nord (1998) who focused on the United States and concluded that the poor were as mobile as the non-poor, and that there were no barriers to migration (such as costs) for the poor.

Koska et al. (2013) indicated that, although remittances did support local households and could lead to human capital formation, the family-disruption effect of migration in Egypt dominated the income effect of remittances. They also concluded that migration and remittances could have a detrimental effect (on human capital formation and indirectly on poverty), if it signalled that unskilled work could be rewarded by migration. The remittances decay hypothesis indicates that remittances decrease over time (cf. Makina & Masenge, 2015) and migration and remittances may alter family structures (such as leaving females to run the household of origin and of raising children by themselves). This, in turn, will have a negative effect on household welfare (Chiodi et al. 2012). According to Kageyama (2008), migration causes negative social effects by disrupting family relations. She therefore concluded that migration and remittances might not be a solution to poverty in Sri Lanka.

From the social perspective, Akay et al. (2012) indicated that the “obligation to remit” mitigated the positive effects of remittances on well-being because the responsibility to remit had resulted in migrants being less satisfied with life in China. Furthermore, De La Fuente (2010), having investigated the vulnerability of rural households in Mexico and the role of remittances, found that future poverty/vulnerability in sending households reduced remittance inflows. It would thus seem that remittances cannot be seen as an effective means of eradicating poverty.

Research has also suggested that remittances may produce a cycle of dependency (Reichert, 1981; Wiest, 1984; Papademetriou & Martin, 1991), especially when remittances are spent on consumption rather than on productive, income-generating activities (Rempel & Lobdell, 1978; Mines & De Janvry, 1982; Grasmuck & Pessar, 1991; Massey & Basem, 1992; Russel, 1992; Brown & Alhburg, 1999; Mills, 1999; Esquivel & Huerta Pineda, 2007; Fajnzylber & Lopez, 2008). While any additional income is helpful to many poor households, a dependency on remittances results in a complex cycle of migration, remittance and dependency, which may weaken the positive effects that remittances may have on poverty (Naatus, 2014).

Given these findings, one wonders whether the migration of the poor follows different or modified rules, meaning that migration is not necessarily a solution in respect of the poor (Fitchen, 1995; Nord, 1998; Schafft, 2006; Foulkes & Newbold, 2008; Schafft & Prins, 2009). Any increase in household income will benefit the household and may influence poverty (as the empirical evidence has indicated). Unfortunately, many papers also emphasise that migration and remittances may have negative impacts on the migratory households. More research is therefore necessary to determine whether the positive effects of migration and remittances outweigh the negative effects.

The literature linking migration, remittances and poverty in South Africa is rather limited, therefore this study fills an important gap of the understanding thereof in the South African context.

Chapter 2

Methodology

This chapter sets out the methodology employed in the study. The data utilised in this study originated from the KwaZulu-Natal Income Dynamics Study (KIDS). Once these data sets have been outlined and discussed, this is followed by a description of terms and variables. Finally, the methods used in the two-pronged approach employed in this study are discussed.

2.1 DATA

This study uses the KwaZulu-Natal Income Dynamics Study (KIDS)[1] data to investigate the dynamics of poverty and migration in dynasty households[2]. KIDS is a longitudinal study that followed a random sample of individuals who were living in KwaZulu-Natal (KZN) in 1993 (KIDS overview, 2005). Those individuals interviewed in the 1993 wave of the study – known as the Project for Statistics on Living Standards and Development (PSLSD) – were re-interviewed in 1998 and then again in 2004. Because the KZN population comprises largely Africans (85%) and Indians (12%), whites and coloureds were excluded from both the 1998 and the 2004 samples (despite their originally having been included in the 1993 PSLSD).

In 1998, all the core members (see Figure 2.1) of the African and Indian households originally interviewed in 1993 were again interviewed, including tracking those who had moved outside KwaZulu-Natal. Due to aging and the effect of HIV/AIDS on these core members, the 2004 wave of the study also interviewed the so-called next-generation households (new households formed by the sons and daughters of the 1993 core members) and also the foster-

[1] The KwaZulu-Natal Income Dynamics Study (KIDS) was a collaborative project between researchers at the University of KwaZulu-Natal, the University of Wisconsin, the London School of Hygiene & Tropical Medicine, the International Food Policy Research Institute (IFPRI), the Norwegian Institute of Urban and Regional Studies and the South African Department of Social Development. In addition to support given by the aforementioned institutions, financial support was also provided by the following organisations: the UK Department for International Development; the United States Agency for International Development (USAID); the Mellon Foundation; and the National Research Foundation/Norwegian Research Council grant to the University of KwaZulu-Natal.

[2] A household member is defined as an individual who (i) has lived under this "roof" or within the same compound/homestead/stand for 15 days or longer in the past year; (ii) has shared food from a common source while they were there; and (iii) shared in or contributed to a common resource pool. The KIDS definition of a household also makes provision for the inclusion of non-resident members (see above).

children households of the 1993 core household members. This was done to refresh the panel and for research purposes, i.e. to establish a generational transition (KIDS, 2006). The latter is of particular importance in this study.

2.2 METHOD

This study follows a two-pronged approach to investigate poverty and the intergenerational transfer of poverty in dynasty households. The first approach (Chapters 3–5) investigates inter-household dynamics in core households and dynasty households by using household-level data. For this purpose, *core* and *dynasty* households were identified. A panel data set was created by linking the 1993 core households, the 1998 core households and the 2004 core households that were linked to the cross-section data for the 2004 dynasty households. The original 1993 core household identifiers were used. For the inter-household analysis, the focus is on core dynamics and their link with outcomes in dynasty households. Therefore, only core households with split-off dynasty households were included in the analysis.

Chapter 3 employs this household-level data to research the determinants of household poverty dynamics and the intergenerational transfer (IGT) of poverty from core households to dynasty households. The dynamics of headcount, and the depth and severity of poverty are analysed, while poverty dominance in dynasty households by poverty dynamics in core households is also investigated. Chapter 4 continues with the household-level data using it to investigate household migration and the determinants thereof in both core and dynasty households. This chapter focusses explicitly on household migration, where the household migrated between communities. It also empirically investigates the effects of migration and of migratory transitions on poverty in dynasty households. The last chapter of the first approach (Chapter 5), which also employs the household-level data, examines the remittance behaviour of core households and dynasty households. In this chapter, both inward and outward remittances and their determinants are analysed. The effects of remittances and of remittance transitions on household poverty in dynasty households are empirically determined. The focus here is on the flow of remittances from core to dynasty households, because the causality runs from core poverty dynamics to poverty levels in dynasty households.

The second approach investigates intra-dynasty household dynamics by comparing core and non-core members in dynasty households. This approach first identifies core and non-core members in dynasty households for documentation and analysis. Individuals are identified as core members if they were interviewed for the first time in either 1993 or 1998 as part of a core household, but since then migrated to a dynasty household. Non-core individuals are individuals first interviewed in 2004. These individual-level data are combined with household level data for intra-household analysis. The characteristics of core and non-core members in both core and dynasty households are documented and household structures are compared. This is followed by an examination of the intra-household composition of dynasty households. Core and non-core individuals are also described in accordance with the predictors of poverty. The predictors, among others, include education, remittances, social capital, social transfers and employment status. Dynasty household members are further disaggregated into family and non-family to adjust for possible differences in family status. The intra-dynasty household characteristics of these core and non-core members is compared in terms of whether they are members of poor/non-poor households or of migratory/non-migratory households. The individual-level analysis is followed by an aggregation of the data for household-level analysis of migration and household welfare in dynasty households.

Attrition is an important factor in analyses of this nature. The rate of attrition between 1993 and 2004 is considered acceptable, with underrepresented groups including young adults and smaller, poor households (May et al., 2007). Here, analysis is not adjusted for attrition, implying that all results need to be interpreted with caution.

2.2.1 Inter-household dynamics

In 1993, a total of 1,558 African and Indian households were interviewed. KIDS was able to re-interview 1,212 of these in 1998. Because of aging and the effects of HIV/AIDS on these households (and therefore also on the sample size), not only the core households, but also the next-generation households and households headed by foster children who had originally lived in the 1993 households, were interviewed in 2004. This 2004 data sample comprised 1,426 households and included 865 *core* households, 319 *next-generation* households, 193 *foster-child* households and 49 *extinct core death* households. As all the members in an extinct core household had passed away in the period between 1993 and 2004, no data were

collected for these households in 2004. These extinct core households are therefore excluded from the analyses in this study. For the purposes of this study, both next-generation and foster-child households are combined within the dynasty household category to represent the younger generation split-offs of the original core households. Figure 2.1 indicates the distribution of households between the different years and generations.

Figure 2.1: **Distribution of core and dynasty households**

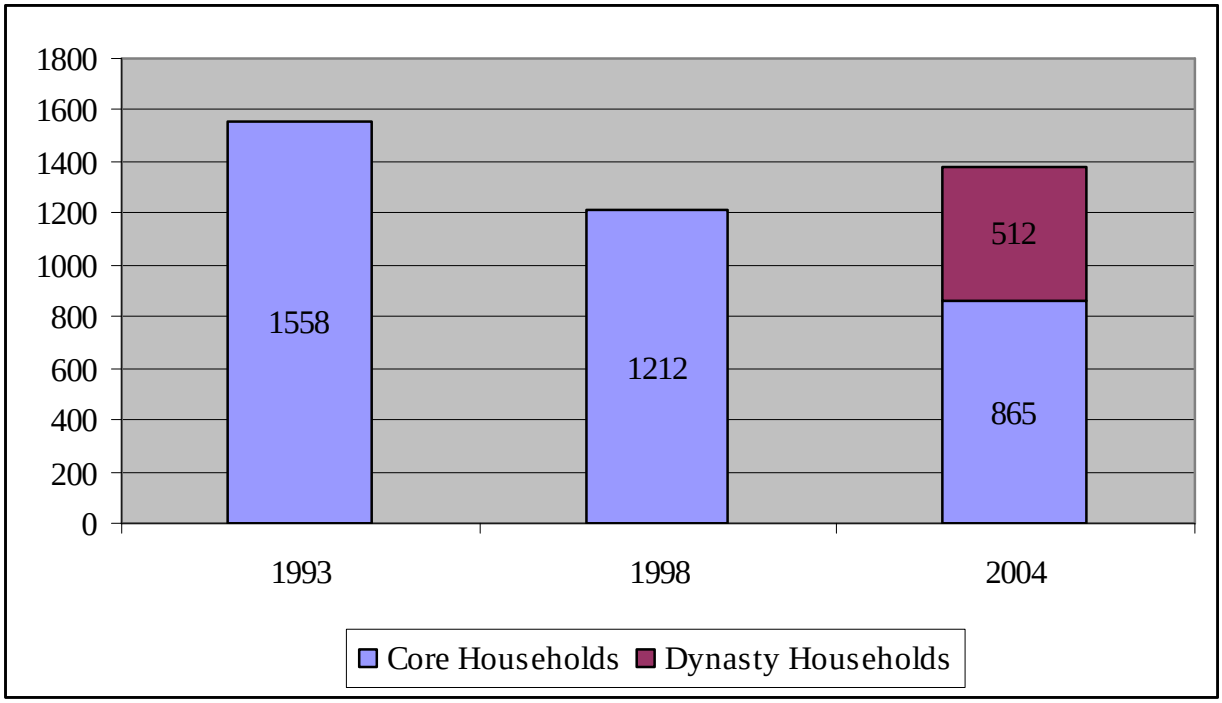


Table 1 lists and defines the data categories. To analyse the different levels, determinants and intergenerational transfer of household poverty of the 2004 dynasty households in KZN, the 2004 KIDS household data are divided between *core* and *dynasty* households (Table 2.1).

Table 2.1: **Description of individuals or households included in the study**

Type	Description of individuals or households
Core members	The individual household members interviewed in 1993
Next-generation households	New households formed by the sons and daughters of the 1993 core members
Foster households	New households formed by the foster sons and daughters of the 1993 core members
Dynasty households	Next-generation households and foster households

Figure 2.2 presents a conceptual overview of the analysis conducted in the first three chapters. It indicates the inter-household links between poverty in core households (and the intergenerational transfer thereof), migration, inward and outward remittances and, lastly, poverty in dynasty households. While Chapter 3 focuses on poverty, Chapter 4 looks at migration and Chapter 5 investigates remittances. Table 2.2 (on the next page) summarises the specific objectives of each chapter.

Figure 2.2: **Inter-household interaction between poverty, migration and remittances**

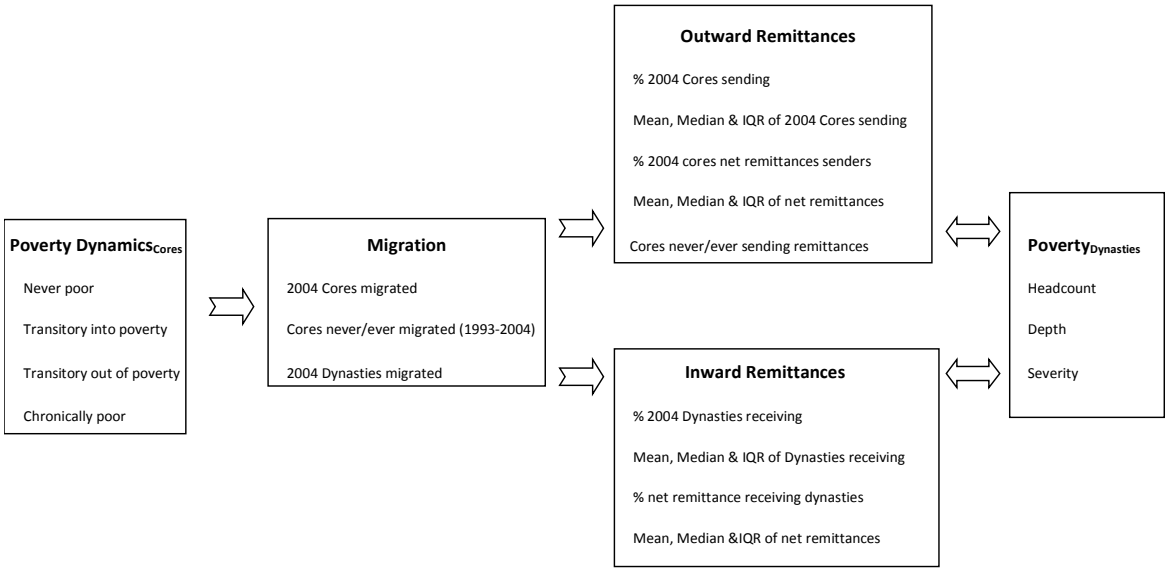


Table 2.2: **Summary of individual chapter objectives**

Chapter 3	Chapter 4	Chapter 5
▪ Compare levels of mean and median real monthly household expenditure in core and dynasty households. ▪ Compare the incidence, depth and severity of poverty in core households in 1993, in 1998 and in 2004. ▪ Document the incidence, depth and severity of poverty in dynasty households in 2004. ▪ Establish the nature of differences in the prevalence, depth and severity of poverty between core and dynasty households. ▪ Determine the nature of poverty transitions in core households over the period between 1993 and 2004. ▪ Investigate the role of poverty transitions in core households in explaining differences in the incidence, depth and severity of poverty in dynasty households	▪ Document migration patterns and transitions in core households over the 1993–2004 period ▪ Document migration patterns in dynasty households over the period between 1998 and 2004 ▪ Determine the association between migration behaviour in core and dynasty households ▪ Investigate the impact of migration patterns and transitions in core households on migration patterns of dynasty households ▪ Determine the association between poverty transitions and migration patterns in core households over the period between 1993 and 2004 ▪ Investigate the role of poverty- and migratory transitions in core households in explaining migration by dynasty households ▪ Investigate the importance of migration patterns and transitions in core and dynasty households in explaining the incidence, depth and severity of poverty experienced by dynasty households	▪ Describe the trends in outward remittance flows in core households ▪ Document inward remittance flows in dynasty households ▪ Examine the association between outward remittance flows in core households and inward remittance flows in dynasty households ▪ Document transitions in outward remittance behaviour in core households ▪ Compare inward remittance flows in dynasty households across dynamics in outward remittance behaviour in core households ▪ Investigate the importance of core and dynasty remittance transitions and patterns in assessing the impact of remittances on the incidence, depth and severity of poverty experienced by dynasty households

In what follows, each of the main study outcomes is described and that is followed by an outline of the regression analysis.

A. Poverty

Chapter 3 aims to investigate the intergenerational transfer of poverty from core to dynasty households in KwaZulu-Natal province during South Africa's post-apartheid political transition. The "next-generation" and "foster-headed" households, which were only interviewed in the 2004 wave of the KIDS survey, are linked to their original core households. By linking these dynasty households to their core counterparts, one is able to investigate core poverty dynamics as explanations for poverty in dynasty households. This further enables one to study the intergenerational transfer of poverty (IGT) and the specific determinants of household poverty in these split-off households.

To establish the levels of poverty, this study uses poverty lines (see below) based on adult equivalence household sizes[3]. Household expenditure is regarded as more stable over time than household income and therefore a better indicator to use for poverty comparisons (Ravallion, 1994: 15 & 81). This study therefore uses household expenditure as determinant of stable household income. The poverty line used is an amount of R250 per person per month (2000 prices). Van der Berg and Louw (2004) also used this poverty line in a study focusing on the 1995 and the 2000 South African Income and Expenditure Surveys (IES).

The monthly poverty line of R250 per person per month was inflated by using the annual Consumer Price Index (CPI) published by Statistics South Africa. In this way, a 2004 monthly poverty line of R310 per person was calculated. The same index was used to calculate the respective poverty lines for 1993 and 1998 of R153.00 and R225.50 per person per month. The study uses adult equivalent household sizes in conjunction with the individual poverty lines to calculate the household poverty lines. Based on these poverty lines, the *Foster Greer Thorbecke* (FGT) measures of poverty (i.e. headcount, depth and severity of poverty) were calculated for each household. The FGT measures of poverty are represented by the following equation:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z - y_i}{z}\right)^\alpha$$

, where: z represents the chosen poverty line, y_i represents the standard of living indicator for the i^{th} household, and n represents the population size. The headcount poverty (FGT=0) is measured when α = 0, the poverty gap (FGT=1) is measured when α = 1, and last, the squared poverty gap (FGT=2) when α=2. The poverty gap measures the depth of poverty, i.e. how far the household lies below the chosen poverty line, while the squared poverty gap is an indication of the severity of poverty experienced by the household, i.e. it reflects the distribution of poverty below the poverty line.

[3] Adult equivalent household sizes are determined by calculating the number of adults and adding 50% (0.5) times the number of children younger than 15 years of age (OECD, 1982)

To determine the robustness of the poverty measures, poverty dominance measures were employed. In this way, different percentages of the R250 per person per month were used as a poverty line so as to ensure that conclusions are not drawn based solely on an arbitrary poverty line.

A panel data set was constructed for the core households covering the periods 1993, 1998 and 2004. This data set was used to investigate poverty dynamics. Poverty dynamics were examined by first dividing core households into one of four categories: *never poor, moving into poverty (transitory into), moving out of poverty (transitory out of), and chronically poor*. *Never poor* households include core households that were non-poor in each of the three years under consideration (1993, 1998 and 2004). *Transitory poor households* are households that either moved into or out of poverty between the specific survey years. These transitory poor cores were also subdivided into those transitory poor cores that either moved out of poverty or into poverty during two subsequent survey years. Chronic poverty refers to household poverty of extended duration. Chronically poor households experienced poverty in each of the three survey years (1993, 1998 and 2004).

Core households were then linked to their dynasty households with a view to investigating poverty in dynasty households and also the intergenerational transmission of poverty between core and dynasty households. In cases in which a dynasty household had multiple cores (for instance where the cores linked to the dynasty household split into two different households), the dynasty household was duplicated to determine the effect that each of the backgrounds would have on the probability that the dynasty household would be poor. The result was that the sample size of 512 dynasty households generated 576 observations. In those cases in which one core household had multiple dynasties (for instance where the parents had two or three next-generation or foster children that had split off and created their own households), the core characteristics were duplicated to link them to both of the dynasty households. Consequently, the regression results had to be adjusted for clustering.

Probit regression models (cf. Equation 2.1) were used to investigate the intergenerational transfer of headcount poverty from cores to dynasty households, while tobit regression models (cf. Equation 2.2) were used to investigate poverty transitions in core households on

the depth and severity of poverty in dynasty households. Both probit and tobit regressions were reduced form models adjusted for clustering and estimated using robust standard errors, while tobit models were used due to the censored nature of expenditure data. The control variables included were adult equivalent household size, the number of dependants[4] and/or dependency ratio.

$$P(dynasty\ poverty_i \mid X) = B_1 dynasty\ characteristics + B_2 core\ poverty\ transitions + u_i \quad [2.1]$$

, where: *dynasty poverty* is a dummy variable with a value equal to 1 if dynasty household expenditure falls below the poverty line and a value of 0 otherwise; X is a vector of explanatory variables that include dynasty household characteristics such as size of the household and household dependency ratio; and *core poverty transitions* include poverty transitions into and out of poverty. These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

$$Exp(dynasty\ poverty_i \mid X) = B_1 dynasty\ characteristics + B_2 core\ poverty\ transitions + u_i \quad [2.2]$$

, where: *poverty* represents the expected depth and severity of poverty and X is a vector of explanatory variables (cf. see above).

In both the probit and tobit regression models, the independent explanatory variables chosen were compared between the core and dynasty households to identify differences as regards the headcount, the depth and the severity of poverty in dynasty households. Models that include characteristics of both the core and the dynasty households in respect of poverty in dynasty households were also estimated. Important here is that causality can be inferred from the regression analysis due to core poverty dynamics being observed prior to dynasty poverty.

[4] In line with common practice, dependants were determined as the number of persons younger than 15 years and all individuals older than 65 years of age, albeit that pensioners receiving old age pensions strictly speaking may not be considered dependants, in particular as entire households often rely on this source of income.

B. Migration

Internal migration involves the movement of a person or household across defined boundaries for a specified period of time, or as Kok et al. (2003:7) put it, as a change of residence, accompanied by crossing one of the boundaries of a migration-defining area. The aim of Chapter 4 is to investigate the impact of migration in core and dynasty households on poverty in dynasty households. For the purpose of this study, a household was identified as migratory if that household, during the preceding five-year period, had moved out of the community they lived in at the time of the previous survey. The specific question used to identify migratory households in the 2004 survey was: "Is this household in the same community as 1998?" The migratory move by a household may have occurred in any of the preceding five-year periods under consideration, that is, 1993 to 1998 (for the 1998 survey) or 1998 to 2004 (for the 2004 survey). Since this migration question was only asked in the 1998 and 2004 questionnaires and not in the original 1993 PSLSD questionnaire, migration was only observed twice for core households and once for dynasty households. Migration, importantly, does not refer to the movement of core household members to new dynasty households.

The data so obtained were used to explore how migration transitions in core households affected migration by dynasty households[5]. Migration transitions were measured as follows (cf. Figure 4.2): cores that *never migrated* and cores that *ever migrated* during the different time periods. These transitions were used as determinant of the probability that a dynasty household would migrate. For this purpose, probit regression models (cf. Equation 2.3) were estimated, with migration and mid-migration transitions in core households as independent variables.

$$P(dynasty\ migration_i \mid X) = B_1 dynasty\ characteristics + B_2 core\ migration + B_3 core\ poverty * core\ migration + u_i \quad \text{..... [2.3]}$$

, where: *dynasty migration* is a dummy variable with a value equal to 1 if the dynasty household migrated and a value of 0 otherwise: X is a vector of explanatory variables that

[5] The term "determinants" are used in analysis of migration and also of migration and poverty because the outcomes are observed consecutively. In all other cases, the terms "correlates" or "associations" were employed as it is not possible to infer causality from the data.

include *core migration* as a dummy variable with a value equal to 1 if the core household ever migrated and a value of 0 otherwise. Core migration transitions are also included. *Core poverty * core migration* include transitions between core households who migrated or did not migrate and their poverty statuses. These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

Since migration may be seen as a risk-diversification strategy that households use in an attempt to escape poverty, this chapter further explores the link between migration in core and dynasty households and the headcount, depth and severity of poverty in dynasty households. Poverty and migration dynamics were also combined to investigate the effects they have on the poverty experienced by dynasty households. While probit regression models (cf. Equation 2.4) were used in the estimation of headcount poverty in dynasty households, tobit regression models (cf. Equation 2.5) were used to investigate the effects of migration and poverty on the depth and severity of poverty in dynasty households. The robustness of results was again tested for by using poverty dominance analysis. Regression analysis use clustered robust standard errors.

$$P(dynasty\ poverty_i \mid X) = B_1 dynasty\ characteristics + B_2 core\ migration + B_3 dynasty\ migration + B_4(core\ poverty * migration\ dynamics) + u_i \quad \text{[2.4]}$$

, where: *dynasty poverty* is a dummy variable with a value equal to 1 if the dynasty household expenditure falls below the poverty line and a value of 0 otherwise and X is a vector of explanatory variables. This vector includes dummy variables for both core and dynasty household migration, which has a value equal to 1 if the household ever migrated and a value equal to 0 otherwise. *Core poverty * migration dynamics* include interactions of core migration and their poverty transitions. These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

$$Exp(dynasty\ poverty_i \mid X) = B_1 dynasty\ characteristics + B_2 core\ migration + B_3 dynasty\ migration + B_4(core\ poverty * migration\ dynamics) + u_i \quad \text{[2.5]}$$

, where: *dynasty poverty* represents the expected depth and severity of poverty and X is a vector of explanatory variables (cf. the above).

C. Remittances

Migration is generally associated with remittances. Remittances are any form of monetary and/or in-kind transfers that migrants send home to their family members, relatives or other beneficiaries. The aim of Chapter 5 is to investigate the influence that core household remittance behaviour may have had on the value and probability of remitting by post-apartheid dynasty households and the effect that this has on the probability that dynasty households are poor. The KIDS questionnaires of all three survey years posed the question as to "*any people who are not resident household members who **send** money, food, or any other kind of contribution **to** this household".* Enumerators recorded the value of both monetary and in-kind transfers. For the purposes of this analysis, these are regarded as inward remittances.

Households may also send remittances to family members, relatives or other beneficiaries not living in the household. The survey asked whether there are, "*any people who are not resident household members who **receive** money, food, or any other kind of contribution **from** this household".* The value of both the monetary and the in-kind transfers sent were recorded. These transfers are however regarded to be outward remittances.

The values of inward, outward and net remittances were calculated on a monthly basis for those households who either sent or received remittances (Net remittances are calculated by subtracting outward remittances from inward remittances). To facilitate comparison, the 1993 and 1998 values of inward, outward and net-remittances were inflated by using an annual Consumer Price Index (CPI). Given the small number of remittance flow observations (see chapter 5 for more detail), transitions in remittances in core households were combined in two categories, namely those who *ever sent* outward remittances and cores who *never sent* outward remittances. This made it possible to compare both remittance flows and transitions in the remittance flows by core households in the apartheid era and also in the new democratic dispensation.

Remittances by core households and those by dynasty households were also compared. These remittance variables were incorporated in the panel data set to investigate outward remittances and outward remittance transitions in core households and how these affected inward remittances in dynasty households. Probit regressions (cf. Equation 2.6) were estimated to determine how different independent factors influence the probability that a core household sends outward remittances. Probit regressions (cf. Equation 2.7) were also used to determine the probability that a dynasty household would receive inward remittances. Tobit regression models (cf. equations 2.8 and 2.9) were estimated to determine how independent factors influence the value of outward remittances sent by core households and how independent factors influence the value of inward remittances received by dynasty households.

$$P(core\ outward\ remittances_i \mid X) = B_1 core\ characteristics + B_2 dynasty\ characteristics + B_3 core\ poverty\ dynamics + u_i \quad \text{..... [2.6]}$$

, where: *core outward remittances* is a dummy variable with a value equal to 1 if the core household ever sent outward remittances and a value of 0 otherwise; X is a vector of explanatory variables: *core characteristics* include core household size and core dependency ratio, *dynasty characteristics* include dynasty household size and dynasty dependency ratio, while *core poverty dynamics* include transitions in poverty in core households (such as non-poor, transitory into poverty, transitory out of poverty and chronically poor household characteristics). These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

$$P(dynasty\ inward\ remittances_i \mid X) = B_1 core\ characteristics + B_2 dynasty\ characteristics + B_3 core\ remittances + B_4 core\ remittance\ transitions + u_i \quad \text{..... [2.7]}$$

, where: *dynasty inward remittances* is a dummy variable with a value equal to 1 if the dynasty household received inward remittances and a value of 0 otherwise, and X is a vector of explanatory variables (cf. the above). *Core remittances* include dummy variables for the sending of remittances or continuous variables of the value of remittances and net-

remittances. *Core remittance transitions* include a dummy variable indicating a value of 1 if the linked core household ever sent outward remittances and a value equal to 0 otherwise. These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

$$Exp(core\ outward\ remittances\ value_i \mid X) = B_1 core\ characteristics + B_2 dynasty\ characteristics + B_3 core\ poverty\ dynamics + B_4 core\ remittance\ transitions + u_i \quad \text{.............................. [2.8]}$$

, where: *core outward remittances value* represents the expected value of outward remittances sent by core households or core net-remittances values and X is a vector of explanatory variables (cf. the above). These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

$$Exp(dynasty\ inward\ remittances\ value_i \mid X) = B_1 core\ characteristics + B_2 dynasty\ characteristics + B_3 core\ poverty\ dynamics + B_4 core\ remittance\ transitions + u_i \quad \text{.............................. [2.9]}$$

, where: *dynasty inward remittances value* represents the expected value of inward remittances received by dynasty households or dynasty net-remittances values and X is a vector of explanatory variables (cf. the above). These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

Since remittances may be seen as part of a risk-diversification strategy that households use in an attempt to escape poverty, this chapter further investigates how outward remittances sent and the transitions in outward remittances sent by core households, and also of inward remittances received by dynasty households affect the headcount, depth and severity of poverty in dynasty households. Transitions in the remittances of core households and the related poverty dynamics have also been combined to investigate the effect that these have on poverty in dynasty households. The robustness in results was again tested for by using poverty dominance analysis. While probit regression models (cf. Equation 2.10) were used to estimate headcount poverty in dynasty households, tobit regression models (cf. Equation 2.11) were used to investigate the effect these had on the depth and the severity of poverty

in dynasty households. Clustered robust standard errors were used in all these regression models.

$$P(dynasty\ poverty_i \mid X) = B_1 core\ characteristics + B_2 dynasty\ characteristics + B_3 core\ outward\ remittances + B_4 dynasty\ inward\ remittances + u_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{[2.10]}$$

, where: *dynasty poverty* is a dummy variable with a value equal to 1 if dynasty household expenditure falls below the poverty line and a value of 0 otherwise, and X is a vector of explanatory variables (see above). These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

$$Exp(dynasty\ poverty_i \mid X) = B_1 core\ characteristics + B_2 dynasty\ characteristics + B_3 core\ outward\ remittances + B_5 dynasty\ inward\ remittances + u_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{[2.11]}$$

, where: *poverty* represents the expected depth and severity of poverty and X is a vector of explanatory variables (see above). These independent variables are entered into the regression models alternately to test various hypotheses relevant to the specific objectives of each chapter.

2.2.2 Intra-household dynamics

The second part of the two-pronged approach followed in this study investigates intra-household dynamics by using individual data in combination with household-level data. Individuals in core and dynasty households were assigned a unique identifier using the household identifiers and the individual person codes (see Appendix 2.1 for a detailed discussion on the assigning of the unique identifiers). Only people who lived in a specific household were included in the individual data. This was done to eliminate duplication in cases where individuals were recorded in multiple households (see Appendix 2.2 for a detailed description of the cases where individuals were recorded as living in multiple households). Members of two households were also excluded because only non-core (see below) members lived within these two households (see Appendix 2.3 for detail on these two households). This meant that the remaining 510 dynasty households (and not 512 dynasty

households used in the above inter-household analysis) were subjected to the intra-household-level analysis.

With a view to exploring the complexity of household formation and composition of core and dynasty households, individuals were linked to the original household head of the 1993 household (see Appendix 2.4 for cases where individuals had missing data regarding relationship).

For intra-household analysis, individuals were classified as either core or non-core members of dynasty households. Core members were household members who had first been interviewed in either 1993 or 1998, while non-core members were those who were only interviewed in 2004. Household members were further classified as either family or non-family members[6] for purposes of analysing intra-household compositions. For intra-household analysis and compositions, the individual and household data in respect of all of the three survey years (1993, 1998 and 2004) were linked. Characteristics of core and non-core members were documented before their individual influences on household welfare were investigated (see definitions below). The movement of core members to dynasty households represents an implicit migration dynamic.

Table 2.3 shows the number of individuals in core and dynasty households in their years of first interview. The distribution of core individuals and of non-core individuals in dynasty household is also shown. As expected, core households generally had more core members than did dynasty households. As many as 53.1% of the dynasty households only had one core individual and 20.6% had only two core members.

[6] Family members were classified as relatives of the 1993 core household head. They included the household head, the wife, husband or partner of the household head, the sons and daughters of the household head, grandchildren of the household head and also other relatives of the 1993 household head not specified, while non-family members were classified as all other individuals not related to the 1993 core household head.

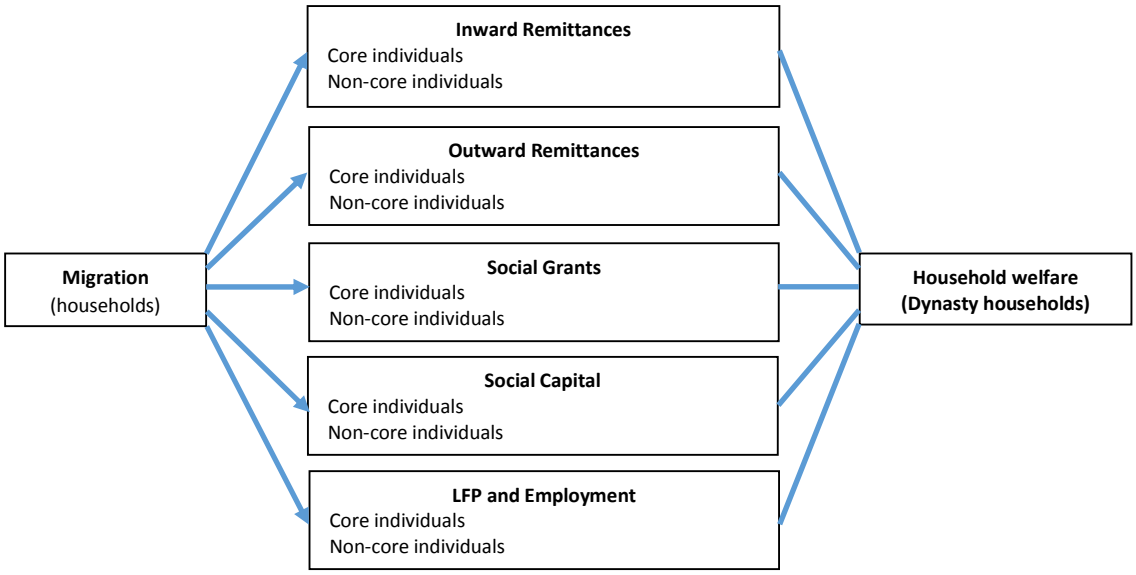
Table 2.3: **Individuals in core and dynasty households (by year of interview)**

Number of household members	Core households (n=865)				Dynasty (n=510)					Total (n=1375)			
					Core individuals			Non-core					
	1993	1998	2004	Total	1993	1998	Average	2004	Total	1993	1998	2004	Total
0	1.5%	58.4%	32.7%		19.2%	62.0%		9.2%		8.1%	59.7%	24.0%	
1	17.3%	22.9%	23.9%	5.8%	45.9%	27.7%	53.1%	14.3%	2.4%	27.9%	24.7%	20.4%	4.5%
2	16.2%	10.8%	17.8%	7.5%	17.8%	6.3%	20.6%	17.5%	7.8%	16.8%	9.1%	17.7%	7.6%
3	17.9%	3.5%	9.1%	10.8%	9.8%	2.6%	12.6%	18.8%	13.7%	14.9%	3.1%	12.7%	11.9%
4	17.0%	2.2%	6.2%	13.4%	3.1%	1.0%	6.5%	10.6%	19.2%	11.9%	1.8%	7.9%	15.6%
5	13.0%	1.0%	3.9%	12.8%	1.8%	0.4%	3.1%	8.8%	15.3%	8.8%	0.8%	5.8%	13.8%
6	7.6%	0.5%	2.0%	10.4%	0.6%		1.0%	6.1%	10.8%	5.0%	0.3%	3.5%	10.6%
7	4.6%	0.4%	1.6%	10.3%	1.6%		1.8%	3.5%	7.7%	3.5%	0.2%	2.3%	9.3%
8	1.5%	0.1%	1.0%	7.4%			0.6%	3.9%	6.7%	1.0%	0.1%	2.1%	7.1%
9	2.0%	0.0%	0.2%	5.3%		0.2%	0.6%	2.0%	5.3%	1.2%	0.1%	0.9%	5.3%
>=10	1.4%	0.4%	1.4%	16.3%	0.2%		0.2%	5.3%	11.2%	1.0%	0.2%	2.8%	14.4%
Total	100.0%	100.1%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.1%	100.0%	100.0%	100.0%

Note: These numbers exclude all individuals excluded from the data for any of the various reasons described in the Appendix.

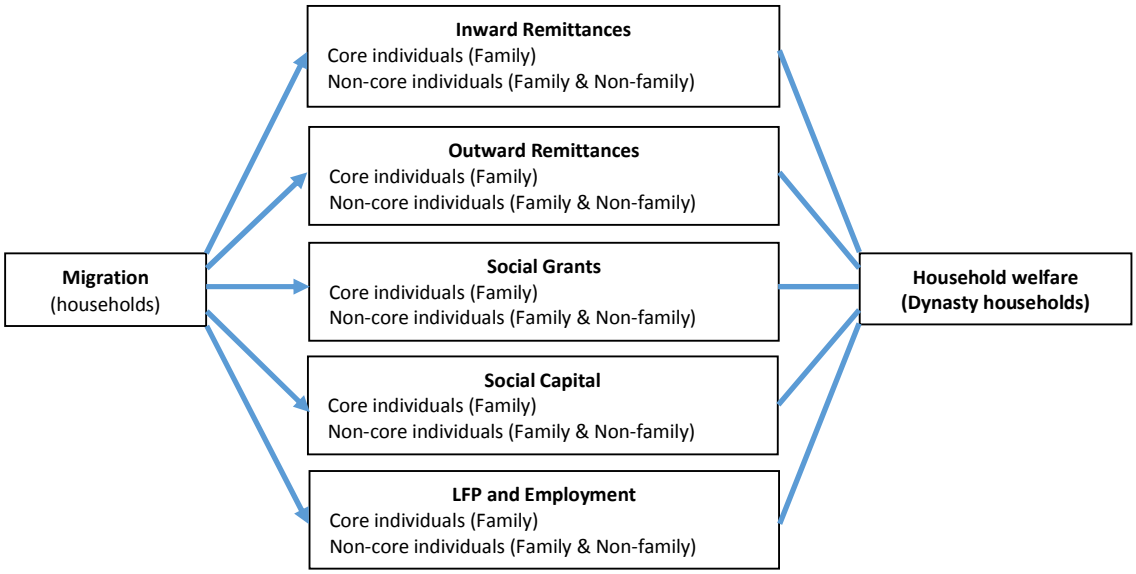
Figures 2.3 and 2.4 depict the intra-household interactions between migration, remittances, social transfers, social capital, education and dynasty household welfare. Whereas Figure 2.3 depicts the differences between core and non-core members in dynasty households, Figure 2.4 makes a further distinction between family and non-family members. Chapter 6 uses these individual-level data to investigate the links between migration, remittances, social transfers, social capital and employment and their effects on dynasty-household welfare.

Figure 2.3: **Intra-household interaction: core individuals and non-core individuals**



Note: All these links were estimated individually.

Figure 2.4: **Intra-household interaction: core family individuals, non-core family individuals and non-core non-family individuals**



Note: All these links were estimated individually

All the links above were individually analysed and estimated to obtain the results in accordance with the objective of the chapter. Among these, only the links with migration is causal in nature, because migration is observed prior to household welfare and other outcomes. All the other links represent associations only. Table 2.4 summarises the individual chapter objectives.

Table 2.4: **Summary of individual chapter objectives**

Chapter 6
• Document the characteristics of core and non-core members of core and dynasty households • Compare the household structures of core and dynasty households • Examine the intra-household composition of dynasty households • Explore the intra-household composition of poor and non-poor dynasty households • Explore the intra-household composition of migratory and non-migratory dynasty households • Investigate the influence of the characteristics of core and non-core members on household welfare in dynasty households

In what follows, each of the outcomes is described and the main methods used in the analysis are clarified:

A. Remittances

Both the monetary and in-kind transfers made (outward remittances) and received (inward remittances) were recorded by enumerators for individual household members (see Section

2 above for more detail on remittances). Many individuals indicated that they were either senders or receivers of remittance but given that some data were missing, the value of remittances could not always be determined accurately. It was therefore decided rather to combine the remittance senders or receivers in two separate continuous variables, indicating the number of individuals in the dynasty household who received remittances and also the number of individuals in the dynasty household who sent remittances. These data were documented before they were combined with the household-level poverty indicators (as measured above). Special cases in which an individual(s) was (were) excluded to ensure accuracy of data are documented in Appendix 2.5.

B. Social transfers

The South African social security system provides government support over the course of an individual's life. To this end, South Africa has a number of main social welfare grants that are also recorded in the KIDS data: an old-age pension (OAP), a care dependency grant (CDG), a disability grant (DG), a child support grant (CSG), a foster care grant, a war veteran's grant and a grant-in-aid. Individual data collected on these social welfare indicators were used in the following way: The KIDS questionnaire required a maximum of three persons per household to supply information regarding non-labour income (which included social grants) and unique person identifiers were once again created for the recipients of social welfare by using the household identifier together with the person identifier. In cases where an individual was recorded as a grant recipient in multiple households, simple rules were followed to avoid duplication (see Appendix 2.6 for more detail). For individual recipients who received more than one grant, the grant income was combined, though it was not always clear when an individual received more than one child support grant. Unfortunately, many grant recipients had missing data regarding the value of the grants received. This forced the analysis regarding social income to be captured in the form of a dummy variable only and to indicate a value of 1 if the individual received a social grant, and a value equal to 0 in other cases. These individual variables were also combined in a continuous variable to indicate the number of grant recipients per household. These household-level social welfare variables were employed in the analysis of household welfare.

C. Social capital

The term *social capital* refers to the features of social organisations such as the networks, the norms, and the social trust that facilitate coordination and cooperation for mutual benefit (Coleman, 1988; Putnam, 1995). Although the 1993 survey did not include questions and data on social capital as regards statistics on living standards, recall questions regarding individual social capital were included in the 1998 KwaZulu-Natal Income Dynamics Study (KIDS). All core individuals originally interviewed in the 1993 PSLD, were therefore questioned regarding their social capital in 1993. Complete sections on social capital were therefore only included in 1998 and 2004. (See Chapter 6 in connection with the limiting effect that the recalling of social capital in 1998 may have had on the results obtained.) Even though the KIDS questionnaire indicated that social capital questions had to be completed for all residents and non-residents, the questionnaire made provision for only four household members and included an option for households in which everyone belonged to the same social capital organisations. This necessitated the exclusion from the analysis of a couple of individuals or households with missing data (see Chapter 6 for further details).

Also, some of the questions on social capital in the KIDS questionnaire were changed in 2004. Only those organisations originally included in the data for 1993 and 1998 were included in the analysis. This was done to ensure that the effect of the dynamics in social capital on household welfare could be analysed.

The social capital measures were further disaggregated in accordance with Putnam's (2000) distinction between bonding and bridging social capital. The distinction between these two types of social capital depends on the heterogeneity of the members in groups/organisations. Whereas *bonding social capital* is associated with closed networks (e.g., organisations made up of people with similar backgrounds), *bridging social capital* involves the overlapping of networks (e.g., associations that bring citizens into contact with people from a cross section of society). In an empirical characterisation of bridging social capital and bonding social capital, Coffé and Geys (2007) concluded that bridging social capital is more likely to result in positive externalities, while Putnam and Goss (2002) indicated that most people get social support from bonding social capital rather than bridging social capital. Given the two types of social capital identified by Coffe and Geys (2007), the social capital organisations in KIDS were

divided into organisations offering bonding social capital and those offering bridging social capital. Individuals who benefitted from bonding social capital belonged to the following organisations: sewing groups, study groups, youth groups, men's associations and women's associations. Individuals who benefitted from bridging social capital belonged to organisations such as stokvels, burial societies, community garden groups, farmer's associations, sports groups, singing or music groups, informal trader's groups, school committees, water committees, development committees or tribal authorities.

For the individual analysis on bonding and bridging social capital, dummy variables were created and whereas a value equal to 1 was given if the individual belonged to a social capital organisation, a value equal to 0 was given if not. For aggregated analyses, the total number of individuals in the household with bonding social capital and/or bridging social capital was calculated and allocated to the households in terms of their core or non-core status and of their family or non-family status.

D. Employment

Employment has an undisputedly positive effect on household welfare. To adjust for the effects of employment, individuals were first identified as being part of the working-age population. All those of working age and able and willing to work were consequently regarded to be part of the working-age population before being identified as being either in the labour force or not. The employed individuals were taken to be employed, while the self-declared unemployed individuals were taken to be unemployed. Employment outcomes were measured at the individual level before being aggregated to the household level, this indicating the number of individuals in the household who were part of the labour force, the number of individuals in the household employed and also the number of individuals in the households who were unemployed. For aggregated analysis, the number of individuals employed was allocated to the households in terms of either their core or non-core status and also their family or non-family status.

E. Poverty

For the descriptive, individual-level, intra-household poverty analysis, only two poverty categories were used. Based on the headcount-poverty method, dynasty households were

classified either as poor or non-poor. Comparisons of the main study outcomes (see above) by poverty status were further disaggregated by the core and non-core status of household members.

Dynasty household welfare was analysed in terms of the characteristics of core and non-core members. To this end, the natural logarithm of household expenditure was used as the measure of household welfare. Structural equation modelling (SEM) was employed to investigate associations between migration, core and non-core member characteristics and household welfare, while ordinary least squares (OLS) analysis was used as a robustness test to confirm the conclusions drawn from SEM.

F. Structural equation modelling (SEM) and ordinary least squares (OLS)

Although a detailed discussion of structural equation modelling (SEM) falls beyond the scope of this chapter, some clarification seems necessary in that SEM was employed in Chapter 6 to investigate associations between migration, the characteristics of core and non-core members, and household welfare. Structural equation modelling (SEM), part of the family of statistical methods, is a combination of statistical techniques that allows one to examine relationships between independent variables (IVs) and dependent variables (DPs). SEM is therefore a method used to represent, estimate and test complex relationships between observed (measurable) and unobserved (latent) variables (Kline, 1998). A benefit of SEM is that both the IVs and the DVs can either be measured variables (observed), or latent variables (unobserved). SEM is also referred to, among others, as confirmatory factor analysis, causal analysis or path analysis (Ullman, 2006). SEM analysis therefore requires a specification of a model based on a theoretical background or hypothesis (as with normal regression models), but without the many strict assumptions made by normal regression analysis. (Kline, 1998).

SEM modelling has four main possible estimation methods:

(a) Maximum likelihood (MLl) estimation is the default method used in programmes such as STATA. With this method, the variance-covariance matrix of the estimators (and standard errors) is computed using an observed information matrix. It is the best method when assuming normality and even with some violation of normality. Listwise deletion is used in this method.

(b) Maximum likelihood combined with normality robustness performs SEM quasi-maximum likelihood estimation, and the standard errors are estimated by not assuming normality. This is a good option if some observed variables are not normally distributed. This method also uses listwise deletion.

(c) The asymptotically distribution-free (ADF) method makes no normality assumptions and is a form of weighted least squares. It is less efficient than maximum likelihood, but more efficient than the quasi-maximum likelihood estimation. This method also uses listwise deletion.

(d) Maximum likelihood missing values (MLMV) uses all the information available and is the best option when there are missing values in one or more of the variables. This method assumes joint normality and also that the missing values are missing at random, and therefore does not use listwise deletion (Acock, 2013).

Maximum likelihood with missing values therefore seemed the most appropriate method for Chapter 6 to ensure that all the data are used in estimating the SEM, even though there are random missing values. In Chapter 6, MLMV was also combined with standardised results, which standardise all the results so that all the variables had a variance of 1.0. This ensured the comparability of parameters throughout the model.

A problem associated with SEM is one of determining model fit. Instead of providing a straightforward test of model fit, different indicators are used to evaluate the fit of an SEM model. Structural equation modelling has a few indices of model fit to ensure the soundness of the estimated model. Four main fit indices are usually reported with SEM results (Acock, 2013):

- The model chi-square, which is the most basic fit statistic for SEM. The chi-square test tests how well the model reproduces the covariance matrix. If the $\chi^2 = 0$, this simply means the model fits the data perfectly. Therefore, as the χ^2 increases, the fit of an over-identified model becomes increasingly weaker. In over-identified models (i.e. $df_m \geq 0$) , the χ^2 has a null hypothesis that the model is correct (i.e. it has a perfect fit with the population data). This implies that the chi-square test in SEM does not follow the normal statistical norm. The failure to reject the null hypothesis therefore supports one's SEM model as specified. A root mean square error of approximation

(RMSEA) value equal to 0 only indicates that the $\chi^2 = df_M$ and not that the $\chi^2 = 0$ (i.e. fits the data perfectly).

- The root mean square error of approximation (RMSEA), which is a parsimony-adjusted index that favours simpler models (corrects for model complexity) and takes the sample size into account. An RMSEA value of zero indicates the best fit with the data, while higher values indicate a poorer fit. Browne and Cudeck (1993) provide a few rules of thumb regarding the RMSEA values: (a) An RMSEA≤ 0.05 indicates close approximate fit (i.e. a good fit); (b) RMSEA values between $0.05\ and\ 0.08$ suggest reasonable errors of approximation (i.e. reasonable fit).
- The Comparative Fit Index (CFI) is among the most widely used indices in SEM diagnostics. This index assesses the relative improvement in fit of the SEM model compared with a baseline model, where the baseline model assumes zero population covariances among the observed variables. Similar to the RMSEA, a CFI value $= 1$ simply means that $\chi^2_M = df_M$ and not that the model has a perfect fit. The rule of thumb for a reasonably good fit of the model is that the CFI value must be greater than 0.90, though a cut-off of 0.95 is more widely used today.
- The standardised root mean square residual (SRMR) measures the mean absolute value of the covariance residuals (which is the difference between the observed and predicted correlations). SRMR therefore measures how close, on average, the model comes to reproducing each correlation. An SRMR value $= 0$ indicates a perfect model fit, while increasingly higher values of the SRMR indicate a poorer fit. The rule of thumb is that an SRMR value of less than ≤ 0.10 is acceptable. Others, however, recommend a value of less than 0.08 (Acock, 2013).

Ordinary least squares (OLS) regression analysis (see Equation 2.12 below) followed on each SEM model to check for robustness of the results and of the conclusions drawn from the SEM estimations. Since expenditure is more stable over the longer term, the natural logarithm of household expenditure was used as the measure for household welfare. Parameter coefficients were based on robust standard errors to adjust for possible heterogeneity, while model fit was based on normal F-test results and the coefficient of determination (R^2) as a goodness of fit measure.

$$Y_i(dynasty\ welfare) = B_0 + B_1 dynasty\ migration + B_2 X_{1i} + B_3(dynasty\ migration * X_{1i}) + U_i \quad \text{..... [2.12]}$$

where Y_i represents dynasty household welfare (natural logarithm of household expenditure), *dynasty migration* represents a dummy variable equal to 1 if the dynasty household migrated and 0 otherwise, and X_{1i} represents a vector of explanatory variables, which include the following: *dynasty characteristics*, which includes dynasty household size and dynasty dependency ratio; *remittances*, which represents the number of core and non-core members who either remitted or received remittances; *social grants*, which represents the number of core and non-core members receiving a social grant; *social capital*, which represents the number of core and non-core individuals who have any type of social capital; and *employment*, which represents the number of core and non-core members employed. *Transitions* includes interaction terms between migration and the independent explanatory variables. A further distinction was also made between family and non-family members. These independent variables were entered into the regression models alternately to test various hypotheses relevant to the specific objectives of this chapter.

The focus now shifts to the chapters containing the results of the inter- and intra-household analyses outlined above.

APPENDIX 2

2.1 Assigning unique individual identifiers

Unique, individual identifiers were created for the 2004 individual data by using the original 1993 and 1998 household identifiers and the person codes of the individuals. In the case of households that had divided (split) in 1998, the identifier of the split household was used in respect of those individuals who had first been interviewed in 1998. However, in the case of those individuals in the 1998 split households who had already been interviewed in 1993, the original 1993 core-household identifier and the interviewee's individual person code were used to ensure a unique identifier. For individuals who were only interviewed in 2004, the unique identifier was created by using the 2004 household identifier and the interviewee's person code. This method was successful in all but 25 cases. These 25 cases were indicated as living in more than one household. The following rules applied in these 25 cases:

1. If an individual's information was incomplete (such as the date of birth, the level of educational attainment, etc.), the household able to complete this information was taken to be the one that was linked to the individual.
2. If an individual had already been interviewed in 1993, but had then been indicated as a member of more than one household, and where the data for both households were incomplete, it was assumed that that particular individual had been a member of the original 1993 household.
3. Where an individual had been linked to more than one household, but had been recorded as not living in any of the households in question (even though he/she had been said to be living there at the time), it was assumed that that individual had lived in the particular household claiming him/her as a resident.

2.2 Cases where individuals were recorded as residents in multiple households

In cases where a household member was recorded as living in more than one household, that individual was given both the original 1993 household identifier and his/her original person code as in the 1993 household. This ensured that an individual was included once only and that she/he was given a unique person identifier.

2.3 Cases where dynasty household had no core members

Two of the households interviewed in 2004 had no core individuals (i.e., individuals not interviewed in either 1993 or in 1998). They were household 80006040 (which included nine individual household members) and household 234062040 (which included seven individual household members). These two households were therefore excluded from any analysis, the objective of this section having been to differentiate between core household members (interviewed in 1993 and in 1998) and non-core individuals (interviewed in 2004). The intra-household-level analysis is therefore based on the remaining 510 dynasty households (and not on the 512 dynasty households used in the above inter-household analysis).

2.4 Missing data regarding relationship to the original 1993 household head

Three individuals had missing information regarding their relationship to the original 1993 household head. They were excluded from the generational analysis. The three individuals were 66002000, 79025000 and 238018004. Although they were excluded from the generational analysis (family as distinct from non-family), they were nevertheless included in the core and non-core intra-household analysis.

2.5 Remittances and social capital

2.5.1 1993 remittance data

In the 1993 data, two individuals who received remittances were excluded because, for some reason or other, they were not in the household roster. In household 600140000000012, there was no individual with person code 12 in the household roster and this person's remittance behaviour was therefore excluded from the analysis. Household 650320000000005 similarly had no individual with person code 5 in its household roster and this particular individual's remittance behaviour was likewise excluded. A similar problem occurred as regards the sending of remittances. There was also one person with person code 2 and with person identifier 1990120000000002 who was indicated as a sender of remittances, but who, too, was not recorded in the household roster (i.e., there was no person code 2). According to the household roster, the household with the household identifier 199012 had only one household member with the person code 1.

2.5.2 1998 remittance and social capital data

Similar methods were followed in respect of the 1998 individual data. Duplicated individuals were treated as follows: Where a person had been interviewed in 1993, but had indicated in 1998 that she/he lived in two households, it was decided to keep her/him in the original 1993 household (so as to be able to link the individual to each of the three data sets). In the case of household members who had first been interviewed in 1998, those individuals, provided that none of their information had been missing in any of the duplicated households, were assumed to be members of the split households of the original 1993 core households.

In the 1998 data on remittance receivers, three individuals were identified as remittance receivers, but were excluded from the analysis because they had not been recorded in the household roster. Two of these individuals had the person code "0", which indicated that all the members of the household received remittances, but since we were unable to link specific individual characteristics to these remittance flows, they were excluded from the analysis. They had the household identifiers 20401200 and 22700200. The other individual, not recorded in the 1998 household roster, had the person identifier 2230170000000007 (with person code 7).

For the 1998 remittance-sending individual data, two households again indicated that all the household members had sent outward remittances ("person code" equal to 0), thereby preventing us from linking any individual characteristics to the remittance flow. They were accordingly also excluded from the analysis. These two specific household identifiers were 71004000 and 71023000.

As regards bridging social capital in the 1998 data, 42 individuals' social capital data were excluded because not all their information had been recorded in the household roster. Again, some of these households indicated person code "0" as the individual with bridging social capital, which means that all the members in the household belonged to a bridging social capital organisation. To ensure conclusions regarding bridging social capital would be robust, these households were rather excluded from the analysis. A similar principle was applied in the case of another household who had indicated that the entire household had bonding social capital. (This household identifier was 21400200).

2.5.3 2004 remittance and social capital data

In the individual data from the 2004 KIDS data set, four individuals who had indicated they were remittance senders were excluded since they had missing data such as age, education, etc. (household 59011000 with person code 2 and household 234009000 with person code 2). The two other individuals were not household members of the household in which they were interviewed (household 78009024 with person code 105 and household 233025024 with person code 100), and were therefore also excluded from the analysis. One individual, who had indicated that he was a remittance receiver, was also excluded because he had indicated that he was not a household member of the household in which he was interviewed (household 205010020 with person code 106).

Regarding bonding social capital, three individuals with such capital were excluded as two of them had not been recorded in the roster (household 69006020 with person code 1 and household 214007020 with person code 1), while the third and the fourth had not been members of the households in which they had been interviewed (household 226062000 with person code 2 and household 234009000 with person code 2).

A total of 32 individuals were excluded in the case of bridging social capital and for the following reasons:

1. Person had not lived in the household in which he/she had been interviewed (193010000000002, 19680080000000104, 1980090000000003, 1980100000000005, 2010080000000002, 2050100200000106, 2120010000000002, 2120150000000006, 2130070200000101, 2130070200000102, 2140100000000005, 2250060000000100, 2360130000000001, 2400120000000002, 2420050000000001).
2. Person had not lived in the household for more than 15 days in the preceding year (2010040000000006, 2010150000000002, 2120090000000002, 2250030000000013, 2250190000000008, 2260830000000005, 2330060000000005, 2330060000000007, 2420050000000007).
3. Person had not been in the household roster, so that there were missing data on the individual (2010180200000105, 2140070000000001, 2320050000000009, 2360120000000001, 2380110000000040, 2440100000000003).

4. Person had been dead at time of interview, so that there were missing data (2030050000000006, 2090190000000005).

2.6 Data on social welfare where individuals were recorded as recipients in multiple households

Duplicates regarding grant recipients emerged where split-off households also recorded a non-labour income from the same individual. Data were included only in the household in which the self-declared individual lived and also where this individual him-/herself reported receiving a grant. In the case of the old-age pension (OAP), three such cases emerged. These were for households with a 2004 household identifier: households 198010024 and 239007202. As regards household 198010024, three split households actually recorded the OAP for the same recipient (unique identifier) for the person with person code 1.

In respect of information regarding the "other forms of social grants", the following grants were included: disability grant, child support grant, foster care grant, care dependency grant, war veterans' grant, and grant-in-aid. In cases where duplicates were encountered, the self-declared individual's information was used. In cases where the individual received more than one grant, the grant income was combined, although it was not always clear when an individual received more than one child support grant. Only one dummy was therefore created for any of these grants received.

Chapter 3

Transfer of intergenerational poverty in core and dynasty households in KwaZulu-Natal, South Africa

Despite democracy having opened the door for transformation in South Africa in 1994, many South Africans still live in poverty (OECD, 2010). Moore (2001 & 2004) emphasises the difficulty of attaining the goals of poverty alleviation and eradication, given the phenomenon of the 'inter-generational transmission' (IGT) of poverty. The author argues that IGT is useful towards understanding poverty and unemployment among the youth, since much of this poverty has its roots in childhood poverty. In South Africa, youth unemployment is a major problem, with 40.8% of youth between the ages of 20 and 24 currently being unemployed, while 33% of those between the ages of 25 and 29 are unemployed (NIDS, 2010). Children born to people in poverty may in other words be susceptible to persistent poverty (Moore, 2004). In the South African context, the question thus is whether the IGT of poverty in the aftermath of apartheid has disadvantaged those children born to parents from previously disadvantaged population groups during the apartheid era.

This chapter aims to investigate the intergenerational transfer of poverty from core to dynasty households in KwaZulu-Natal Province during South Africa's post-apartheid political transition. More specifically, this chapter attempts to:

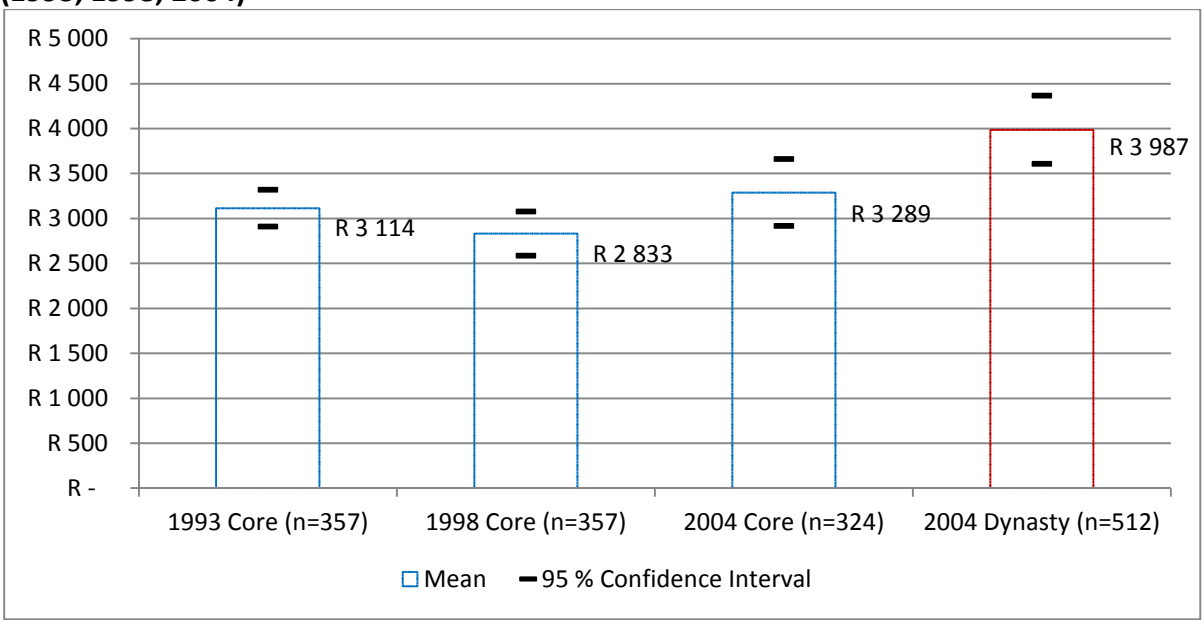
- Compare levels of mean and median real monthly household expenditure in core and dynasty households.
- Compare the incidence, depth and severity of poverty in core households in 1993, in 1998 and in 2004.
- Document the incidence, depth and severity of poverty in dynasty households in 2004.
- Establish the nature of differences in the prevalence, depth and severity of poverty between core and dynasty households.
- Determine the nature of poverty transitions in core households over the period between 1993 and 2004.
- Investigate the role of poverty transitions in core households in explaining differences in the incidence, depth and severity of poverty in dynasty households.

3.1 Real monthly household expenditure in core and dynasty households

Figure 3.1 depicts the mean real monthly household expenditure by both core and dynasty households. Although the real monthly household expenditure of R3 289 (n=324) by 2004 post-apartheid core households is significantly higher than that of 1998 core households' real monthly expenditure of R2 833 (n=357; p=0.020), statistically it is not significantly higher than that of the 1993 core households' real monthly expenditure of R3 114 (n=357; p=0.204). There thus appears to have been a slight increase in post-apartheid household expenditure in core households.

Post-apartheid dynasty households' real monthly expenditure of R3 987 (n=512) is significantly higher than the real monthly expenditure in core households in each of the years: 1993 (p<0.001), 1998 (p<0.001) and 2004 (p=0.007).

Figure 3.1: **Mean real monthly household expenditure in core and dynasty households (1993, 1998, 2004)**

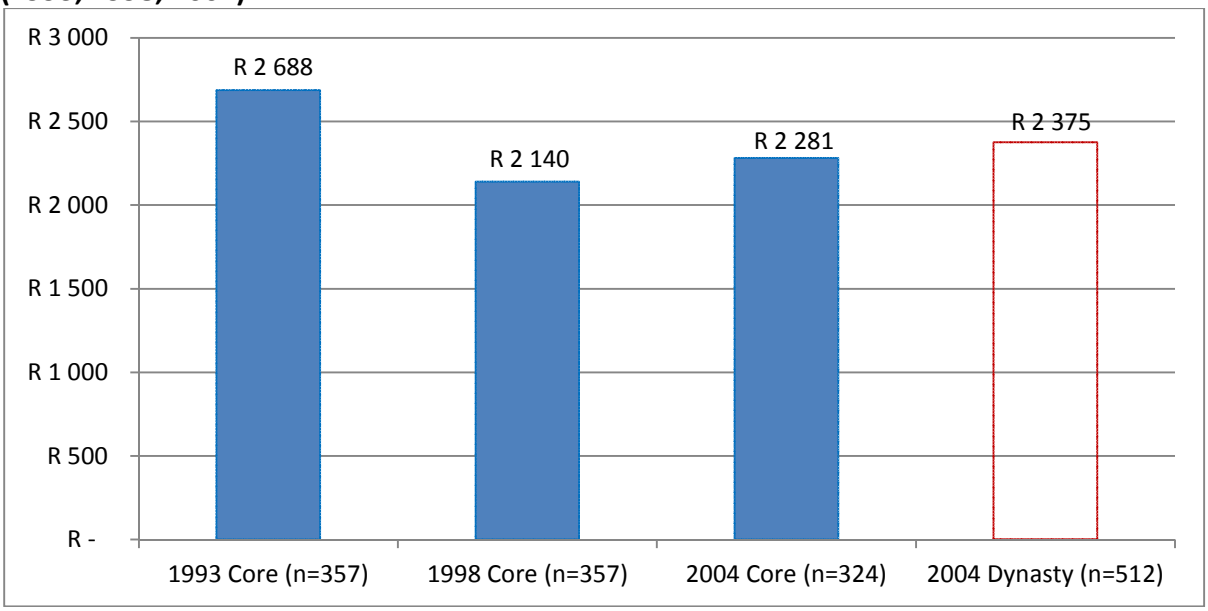


Note: All differences referring to dynasty expenditure are statistically significant at the 1% level of significance (p<0.001). Differences between the 2004 core and the 1998 core expenditures are statistically significant at the 5% level of significance (p=0.020). Differences between the 2004 and the 1993 core expenditures are not statistically significant at the 10% level of significance (p=0.204). Differences between the 1993 core and the 1998 core expenditures are statistically significant at the 5% level of significance (p=0.0417).

Figure 3.2 summarises the median real monthly household expenditure in both core and dynasty households. It seems to depict different results in comparison with the mean expenditure levels (see Figure 3.1). Figure 3.2 reflects a decline in the post-apartheid median

monthly household expenditure in core households compared with the post-apartheid increase in the average real monthly household expenditure among core households reported in Figure 3.1. The median real monthly household expenditure by the 1993 core households (R2 688) is higher than the post-apartheid levels in both the core and the dynasty households. The median monthly expenditure by the 2004 dynasty households (R2 375) is however higher than the median expenditure by both the 1998 (R2 140) and the 2004 (R2 281) core households, even if the differences are not all statistically significant. The differences between the mean and the median comparison are however not unexpected, given the high levels of inequality in South Africa.

Figure 3.2: **Median real monthly household expenditure in core and dynasty households (1993, 1998, 2004)**

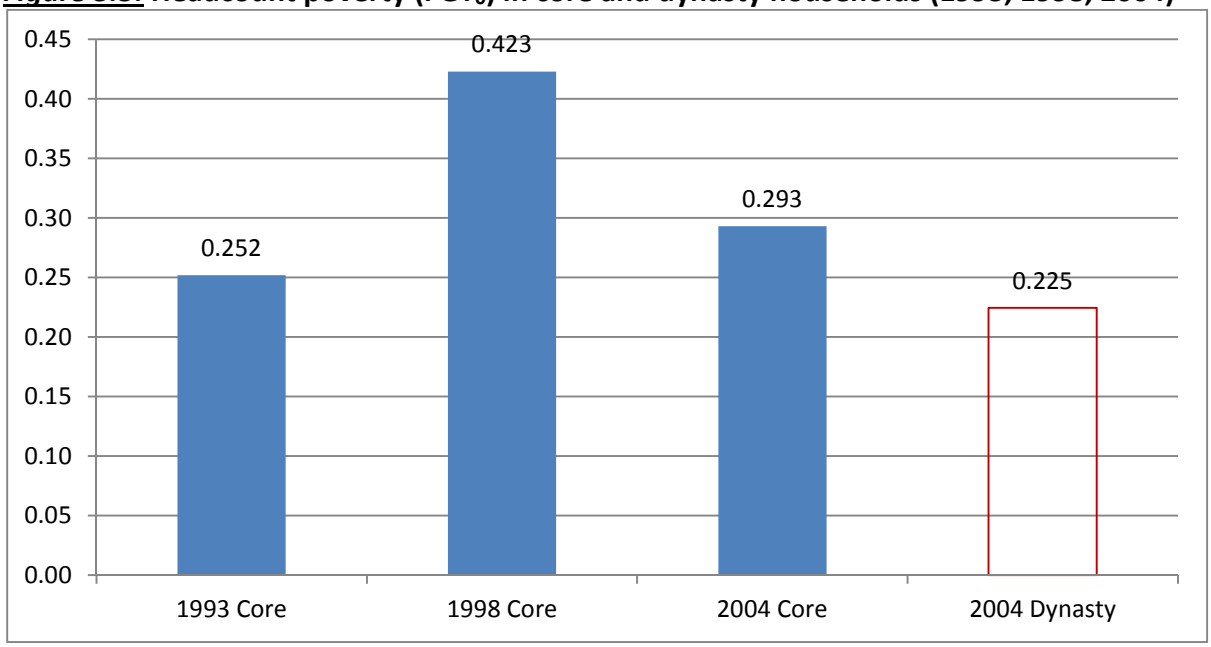


3.2 Headcount, depth and severity of poverty in core and dynasty households

Figures 3.3 to 3.8 display three poverty measures (headcount, depth, and severity of poverty indices) for core and dynasty households. Figure 3.3 summarises the Headcount Poverty Index. In 1993, 25.2% of the core households fell below the poverty line of R250 (at 2000 prices) per adult-equivalent individual per month. This apartheid poverty level in 1993 core households is lower than both the 42.3% of 1998 core households (n=357; $p<0.001$) and the 29.3% of 2004 core households (n=324; $p=0.114$) that fell below the monthly household poverty line in the post-apartheid era. However, differences in the prevalence of poverty in core households between 1993 and 2004 are not statistically significant at the 10% level of

significance. The lowest level of poverty was recorded for dynasty households. In 2004, 22.5% (n=512) of dynasty households fell below the poverty line. This is significantly lower than the poverty levels recorded for core households in both 1998 ($p<0.001$) and in 2004 ($p=0.012$). Differences between the 2004 dynasty and the 1993 core households are not statistically significant ($p=0.173$). Dynasty households in the post-apartheid era are thus better off than core households.

Figure 3.3: **Headcount poverty (FGT_0) in core and dynasty households (1993, 1998, 2004)**



Note: Differences between the dynasty households and the 1993 core households are not statistically significant at the 10% level of significance ($p=0.173$). Differences between dynasty households, on the one hand, and 1998 and 2004 core households, on the other, are statistically significant respectively at the 1% ($p<0.001$) and the 5% ($p=0.012$) levels of significance,. Differences between the 1993 and the 1998 core households and also between the 1998 and the 2004 core households are statistically significant at the 1% level of significance ($p<0.001$). Differences between the 1993 and the 2004 core households are not statistically significant at the 10% level of significance ($p=0.114$)

Figure 3.4 depicts *headcount poverty (FGT_0)* dominance in both core and dynasty households. These headcount poverty dominance curves reflect the cumulative percentage of households falling into headcount poverty at different fractions of the R250 (at 2000 prices) per adult-equivalent poverty line. According to Figure 3.4, the highest levels of headcount poverty were recorded for 1998 core households, irrespective of the chosen poverty line, followed by 2004 core households. Irrespective of the chosen poverty line, headcount poverty in the 1998 core households therefore dominates both the 1993 and 2004 cores, and also the headcount poverty amongst the 2004 dynasty households. Poverty in cores dominates poverty in dynasties, but only at higher poverty lines.

Figure 3.4: **Dominance in headcount poverty (FGT_0) in core and dynasty households (1993, 1998, 2004)**

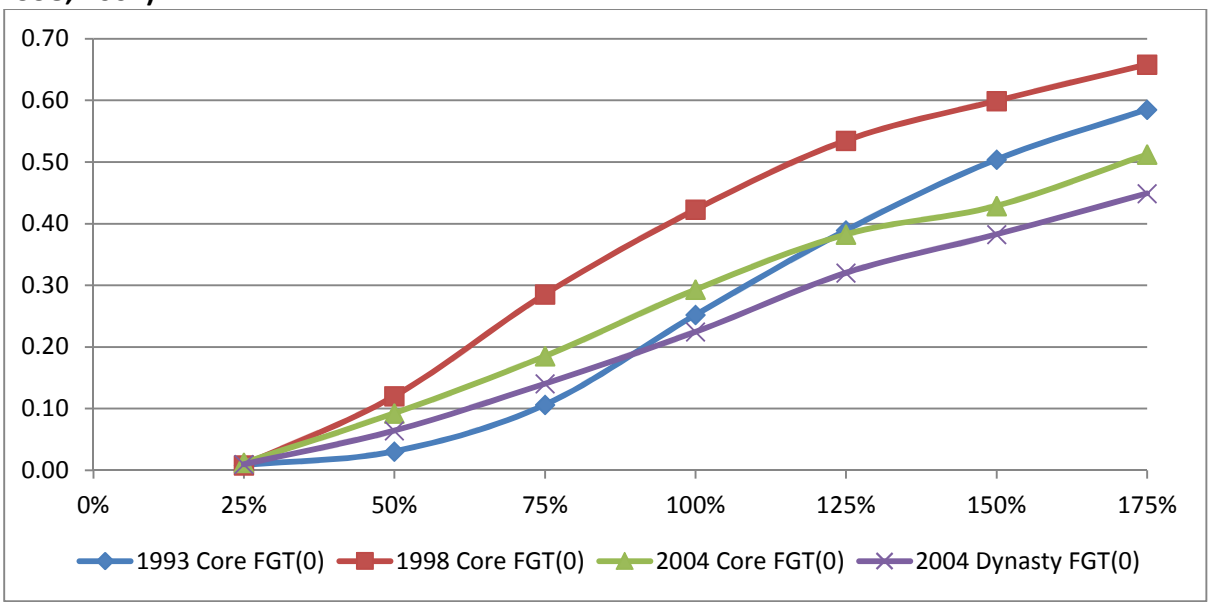
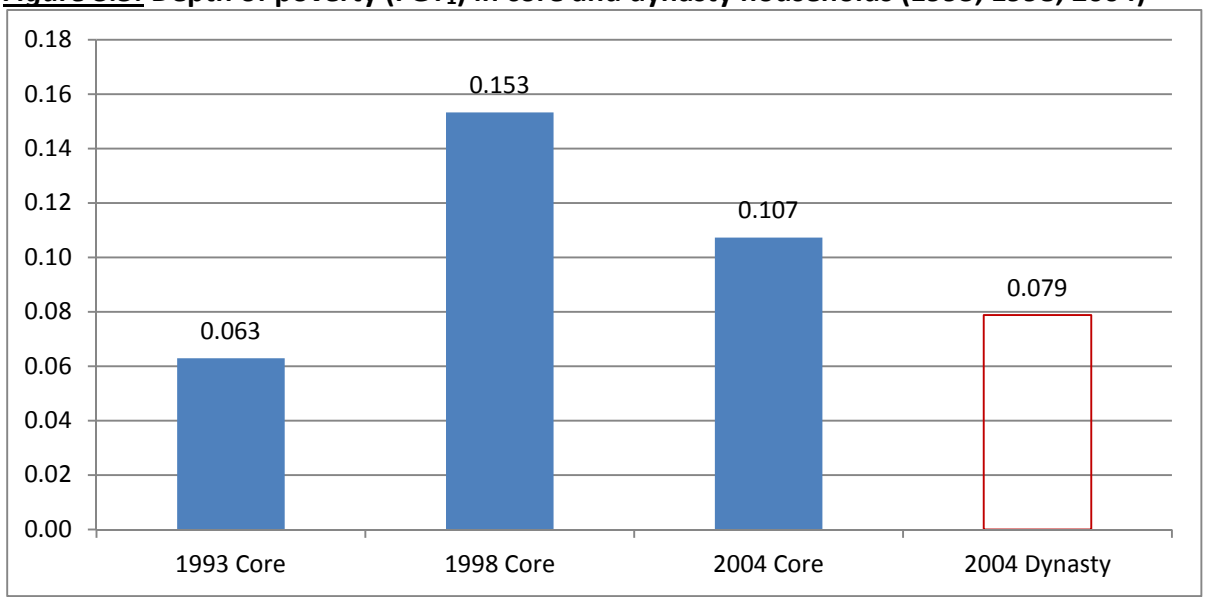


Figure 3.5 depicts the depth of household poverty (FGT_1) in core and dynasty households. Compared with apartheid levels, there was a significant deterioration in the depth of poverty experienced by post-apartheid core households. The depth of poverty experienced by 1998 (0.153; $p<0.001$) and 2004 (0.107; $p<0.001$) core households is significantly higher than the 1993 level of only 0.063. This means that core households, on average, lay respectively 15.3% and 10.7%, below the household poverty line, while, in comparison, the 1993 core households lay on average only 6.3% below the household poverty line. The depth of poverty experienced by post-apartheid dynasty households is lower than that in post-apartheid core households, this indicating an improvement in the position of the offspring of core households in respect of the depth of poverty. On average, dynasty households lay 7.9% below the household poverty line. The depth of poverty in dynasty households (0.079) was significantly lower than was the case in core households in both 1998 (0.153; $p<0.001$) and 2004 (0.107; $p=0.017$), albeit significantly higher than the apartheid level of the depth of poverty (0.062) for 1993 core households ($p=0.085$).

Figure 3.5: **Depth of poverty (FGT_1) in core and dynasty households (1993, 1998, 2004)**



Note: The differences between core and dynasty households are all statistically significant (p<0.001).

To test for the robustness of empirical results presented in Figure 3.5, Figure 3.6 summarises the cumulative depth of poverty given the different fractions of the chosen poverty line. Figure 3.6 indicates dominance in the depth of poverty of the 2004 dynasty households by the 1998 and 2004 core households. Only with a poverty line of 125% or more of the R250 (at 2000 prices) per adult-equivalent poverty lines, are 1993 core households not dominated by 2004 dynasty households.

Figure 3.7, which reports the severity of poverty in core and dynasty households, mirrors the results in Figure 3.5 and Figure 3.6 as regards the trend within core households and the differences between core and dynasty households. The severity of poverty experienced by post-apartheid core and dynasty households is significantly higher than apartheid levels. The apartheid severity of poverty experienced by 1993 core households (0.026) is significantly lower in cores in 1998 (p<0.001) and in 2004 (p<0.001), and in 2004 dynasty households (p=0.046), with levels of severity respectively of 0.073, 0.053 and 0.038. Again, dynasty households in 2004 fared better in respect of this particular poverty index than did core households in 1998 (p<0.001) and in 2004 (p=0.038).

Figure 3.6: **Dominance in depth of poverty (FGT_1) in core and dynasty households (1993, 1998, 2004)**

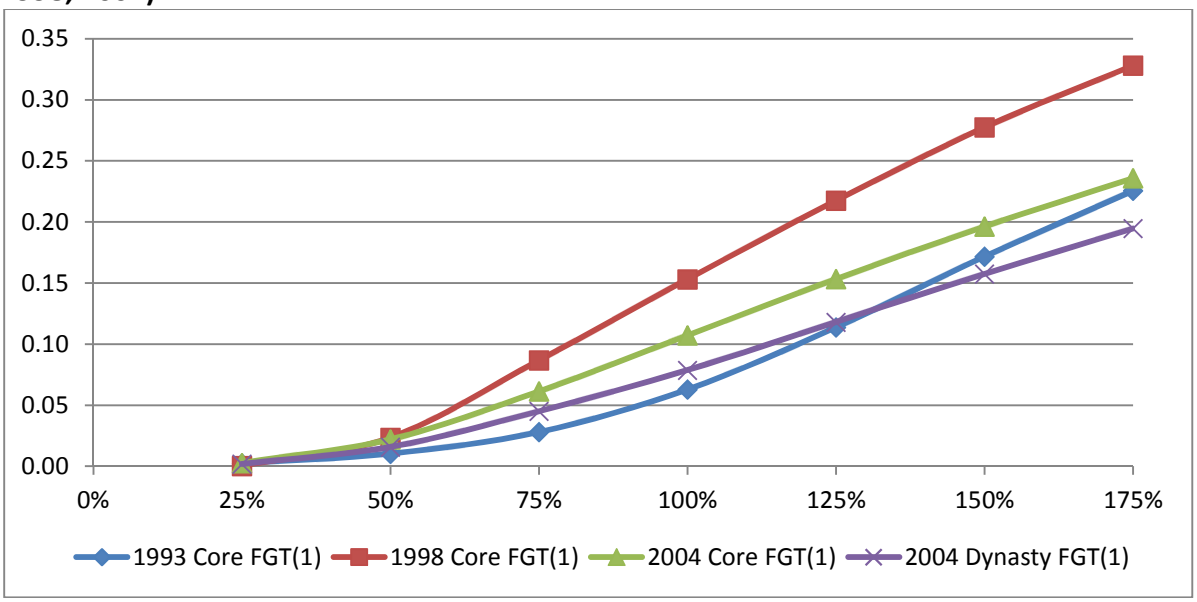


Figure 3.7: **Severity of poverty (FGT_2) in core and dynasty households (1993, 1998, 2004)**

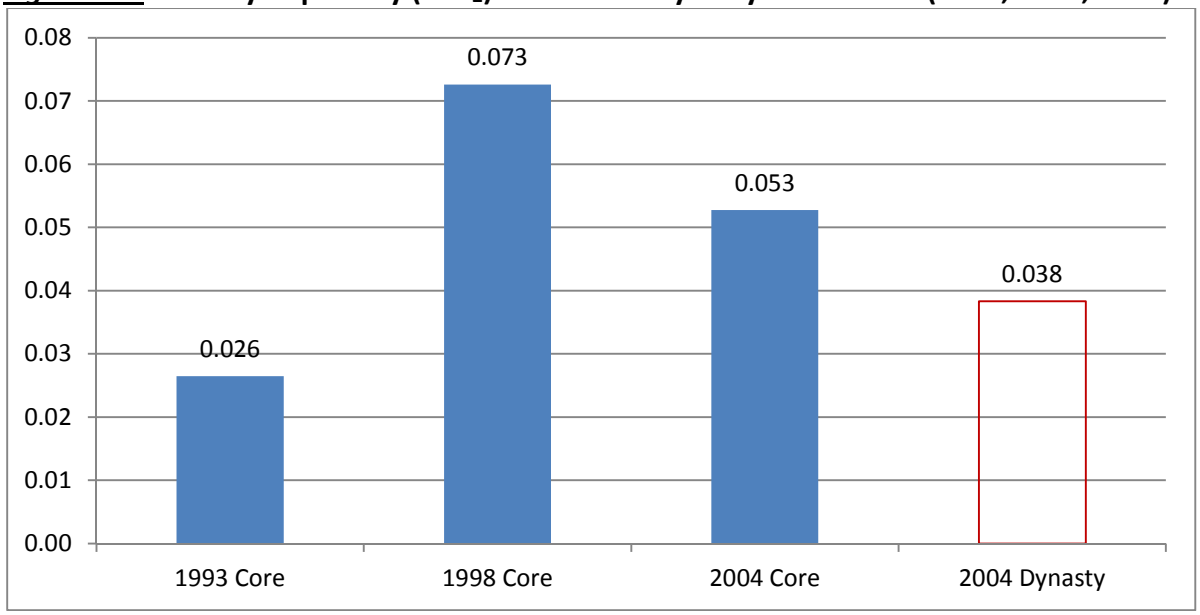
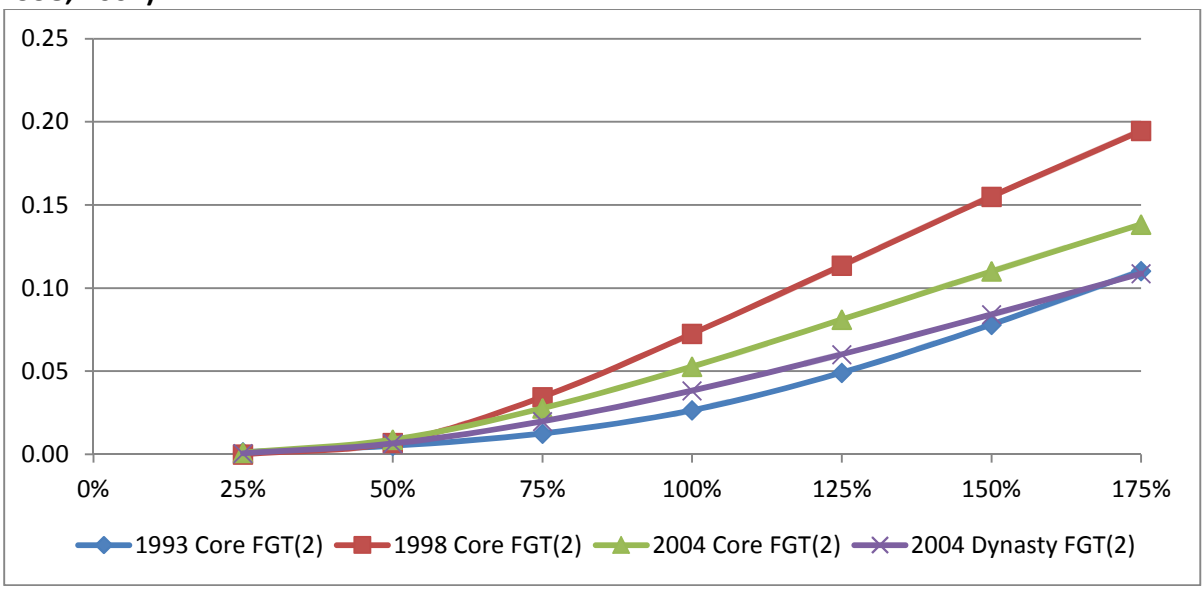


Figure 3.8 summarises poverty dominance with regard to the severity of poverty experienced in core and dynasty households. Figure 3.8 indicates dominance in the severity of poverty experienced by post-apartheid core and dynasty households in comparison with 1993 core households. Although the severity of poverty in 2004 dynasties is still lower than that of 1998 and 2004 post-apartheid core households, it is still higher than the apartheid 1993 levels.

Figure 3.8: **Dominance in severity of poverty (FGT_2) in core and dynasty households (1993, 1998, 2004)**



Given Figures 3.3 to 3.8, irrespective of the poverty index used, the 2004 dynasty households are better off than both 1998 and 2004 post-apartheid core households, while both post-apartheid cores and also dynasty households – except in respect of prevalence of poverty (FGT_0) – on average fare worse than do the apartheid 1993 core households. These trends mirror unemployment trends (Quantec, 2006), suggesting the important role of the economic climate in explaining trends in poverty.

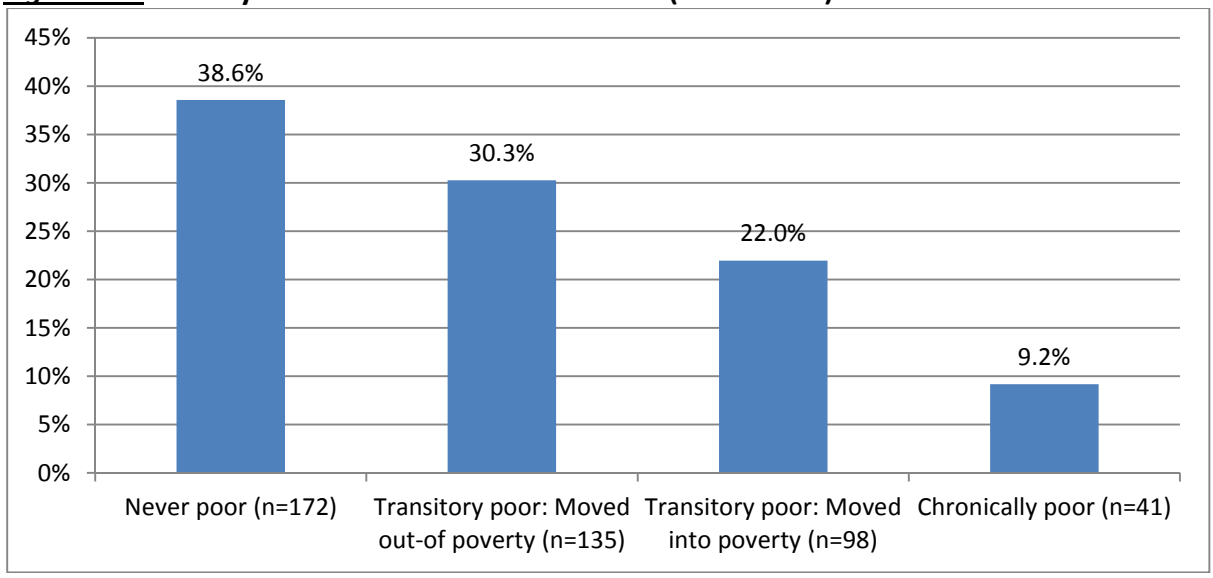
3.3 Poverty transitions in core households (1993-2004)

Figure 3.9 summarises poverty transitions in core households over the period between 1993 and 2004. Core households fall into three categories: *never poor*, *transitory poor*[1], and *chronically poor*. *Never poor households* include core households that were non-poor in each of the three years under consideration (1993, 1998 and 2004). Figure 3.9 indicates that while 38.6% of core households had never been poor, 52.3% (233) had been transitory poor. *Transitory poor households* are households that either moved into or out-of poverty between the specific survey years here under consideration. Figure 3.9 shows that 30.3% of transitory poor core households moved out-of poverty during the post-apartheid period (1998-2004),

[1] Due to common practice and for comparability, households moving into poverty and households moving out-of poverty are also combined into a single "transitory poor" category.

compared with the 22% of such households that moved into poverty over this period. Chronic poverty in turn refers to an extended duration in the incidence of household poverty. Chronically poor households experienced poverty in each of the three survey years (1993, 1998 and 2004). Figure 3.9 shows that a total of 9.2% (41) core households were experiencing extended poverty. These 41 (9.2%) chronically poor households furthermore indicate that 15.0% of households experiencing poverty in the survey period are chronically poor. This level of chronic poverty is relatively low in comparison with estimates of 35%-45% for sub-Saharan Africa, but higher than the estimates of 10%-15% for the Middle Eastern and North African regions (Chronic Poverty Research Centre, 2010: 140).

Figure 3.9: **Poverty transitions in core households (1993–2004)**

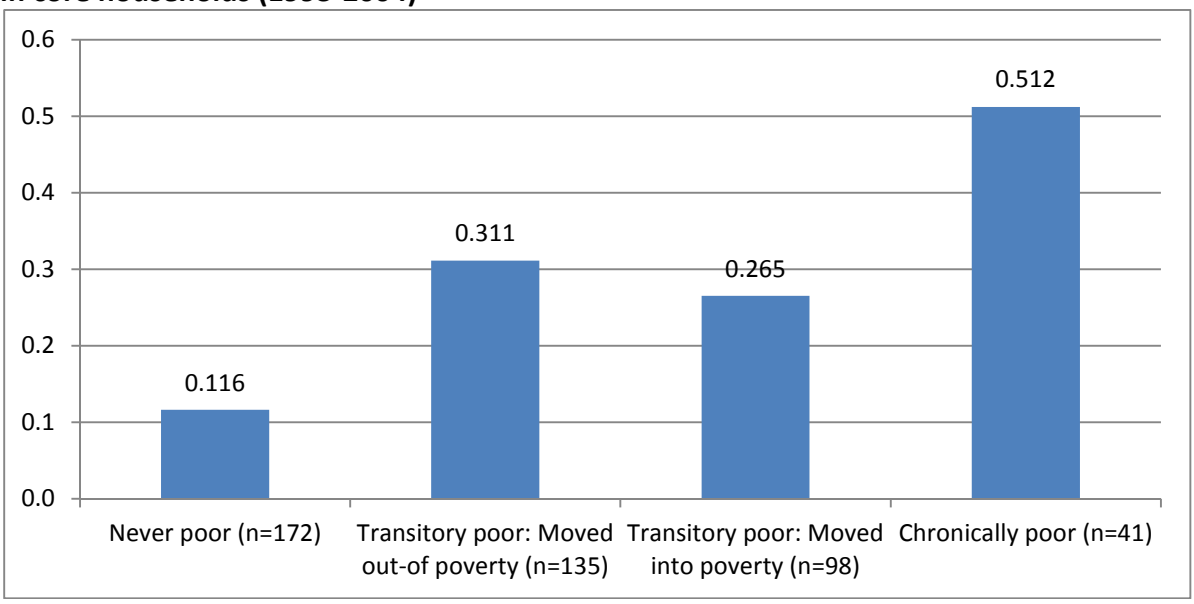


3.4 Poverty in dynasty households (2004), by poverty transitions in core households (1993-2004)

Figures 3.10 to 3.13 report the incidence, depth and severity of poverty in dynasty households linked to respectively non-poor, transitory poor and chronically poor core households, and they thus provide evidence of the existence or not of an intergenerational transfer of poverty in post-apartheid South Africa. Although one expects the dynasties linked to cores that moved into poverty to have higher levels of headcount poverty than do the dynasties linked to cores that moved out-of poverty, Figure 3.10 indicates that 31.1% of the dynasty households descended from those core households that moved out-of poverty after the demise of apartheid, were experiencing poverty, while, on the other hand, 26.5% of the dynasty

households descended from core households had moved into poverty. Among the dynasty households born into core households that had never experienced poverty, only 11.6% were poor in 2004. This is significantly lower ($p<0.001$) than the 51.2% figure for poor dynasty households linked to chronically poor core households and also than the figure for dynasty households coming from a transitory poor background (0.292; $p<0.001$). Figure 3.10 therefore suggests the existence of substantial IGT poverty, which increases the probability that a dynasty household will be poor if it descends from a chronically poor core household.

Figure 3.10: **Headcount poverty (FGT_0) in dynasty households (2004), by poverty dynamics in core households (1993-2004)**



Note: All differences are statistically significant at the 1% level of significance ($p<0.001$).

To determine the robustness of the IGT of household poverty, Figure 3.11 shows the headcount poverty dominance in dynasty households by poverty dynamics in core households. Figure 3.11 depicts dominance in headcount poverty for dynasties from a chronically poor background, irrespective of the poverty line used, followed by dynasties linked to a transitory poor background. As was the case in Figure 3.10, poverty is higher in dynasties linked to cores moving out-of poverty, than in dynasties linked to cores moving into poverty, but not at lower poverty lines. Irrespective of the poverty line employed, Figure 3.11 indicates that the lowest levels of headcount poverty exist in dynasties from a non-poor core background.

Figure 3.11: **Headcount poverty (FGT_0) dominance in dynasty households (2004), by poverty dynamics in core households (1993-2004)**

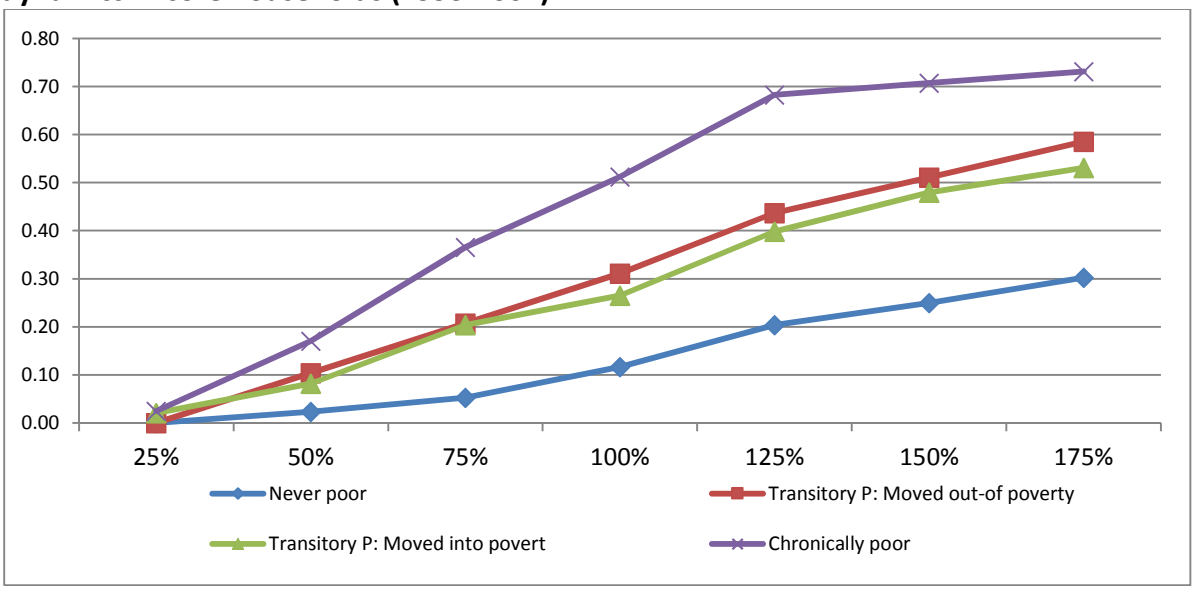
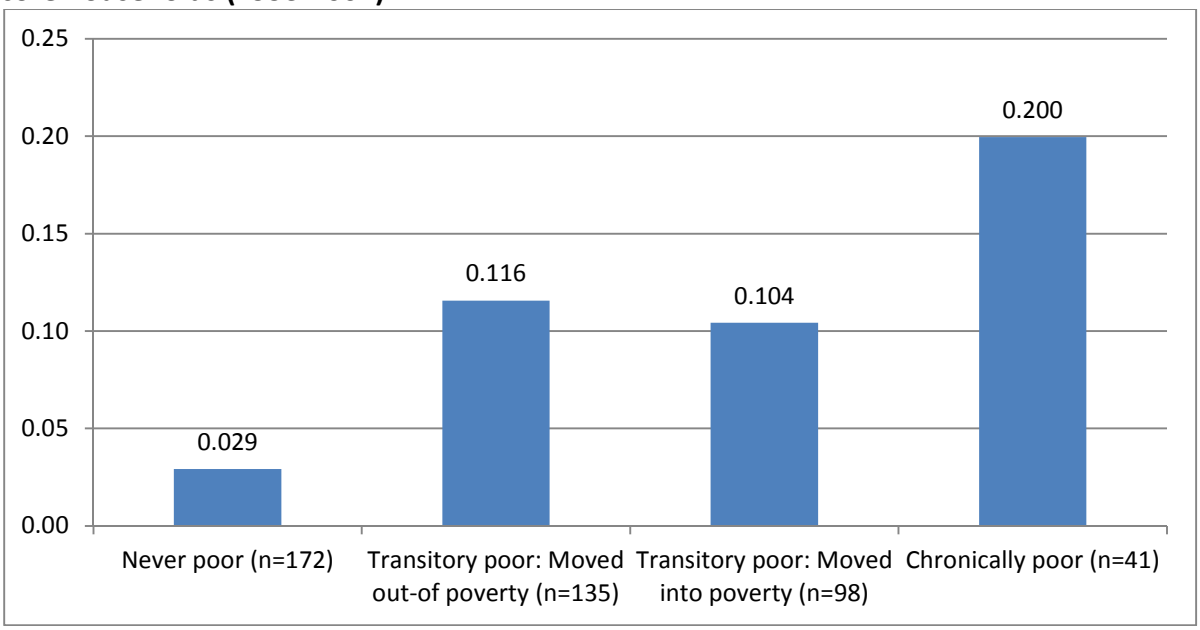


Figure 3.12 and Figure 3.13 provide further evidence to support the probability of IGT poverty. Figure 3.12 indicates the depth of poverty to be significantly higher for dynasties descended from chronically poor cores (0.200; $p<0.001$), than for dynasties descended from non-poor core households (0.029). Figure 3.12 would therefore suggest that dynasty households descended from chronically poor cores lie, on average, 20% below the poverty line compared with dynasties descended from non-poor cores, which lie only 2.9% below the poverty line. Dynasties descended from transitory poor core households that either escaped poverty or that moved into poverty, on average lie 11.6% and 10.4% below the poverty line, thus making them worse off than dynasties descended from never-poor cores, but better off than the dynasties descended from chronically poor cores.

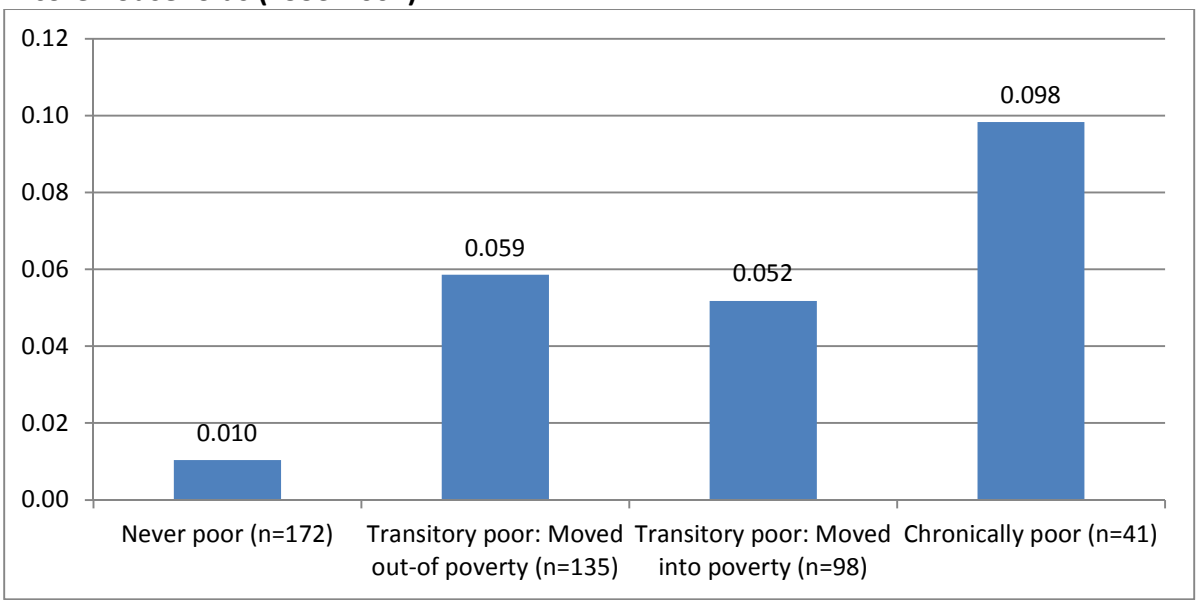
Figure 3.12: **Depth of poverty (FGT_1) in dynasty households (2004), by poverty dynamics in core households (1993-2004)**



Note: All differences are statistically significant at the 1% level of significance (p<0.001).

Figure 3.13 depicts similar results for the Severity of Poverty Index, which assigns greater weight in its poverty estimation to households that are furthest from the poverty line. Statistically, the severity of poverty is significantly higher for dynasties linked to transitory poor cores (0.059 and 0.052, respectively, for movements out-of and into poverty) and for chronically poor cores (0.098; p<0.001). By comparison, dynasties linked to non-poor core households lie at 0.010. Dynasty households linked to poor core households – particularly chronically poor cores – therefore not only exhibit a higher incidence of poverty, but also experience poverty more intensely in terms of both the depth and the severity of poverty.

Figure 3.13: **Severity of poverty (FGT_2) in dynasty households (2004), by poverty dynamics in core households (1993-2004)**



Note: All differences are statistically significant at the 1% level of significance (p<0.001).

3.5 Regression analysis

Table 3.1 summarises the probit regression results for the headcount poverty in dynasty households. Model 1 subdivides the transitory poor core households into cores moving into poverty and cores moving out of poverty, while Model 2 combines these two in a single transitory poor category. Figure 3.14 graphically presents the regression coefficients and their 95% confidence intervals for the poverty transition variables.

Table 3.1: **Probit regression results for dynasty headcount poverty**

Dynasty poverty	Headcount poverty	
	Model 1 (dF/dx)	**Model 2 (dF/dx)**
Dynasty household size	0.045***	0.045***
Dynasty dependency ratio	0.280**	0.279**
Core transitory out-of p vs non-p	0.174***	0.145***
Core transitory into p vs non-p	0.144**	
Core chronically p vs non-p	0.403***	0.404***
Obs	446	446
Wald chi2	69.52	66.85
Prob> Chi2	0.000	0.000
Pseudo R2	0.212	0.211
% correctly classified	79.60%	79.82%

Note: *, **, *** denote statistical significance at, respectively, the 10%, the 5% and the 1% level.

The binary (0/1) poverty variable for a dynasty household is the dependant variable. All the models use robust standard errors to adjust for heteroscedasticity. These standard errors were also adjusted for clustering since some of the dynasty households originated from the same core household. The Wald Chi^2 tests together with their probability values indicate that both models perform adequately in terms of overall goodness-of-fit. This means that at least some of the independent variables explain part of the probability that a dynasty household will be poor. The model diagnostics for Model 1 also indicate that 79.6% of the households are correctly classified as being poor, while Model 2 correctly classifies 79.8% of dynasty households as being poor. This indicates that both Model 1 and Model 2 are a good fit with the data.

In addition, all the statistically significant variables display the expected signs in that increases in household size and dependency ratios are associated with an increase in the probability of being poor. If the dynasty household size increases by one, the probability of being poor increases by 4.5% ($p<0.001$), while a percentage point increase in the dependency ratio, increases the probability of being poor by about 28% ($p=0.013$).

Figure 3.14: **IGT of headcount poverty (FGT_0)**

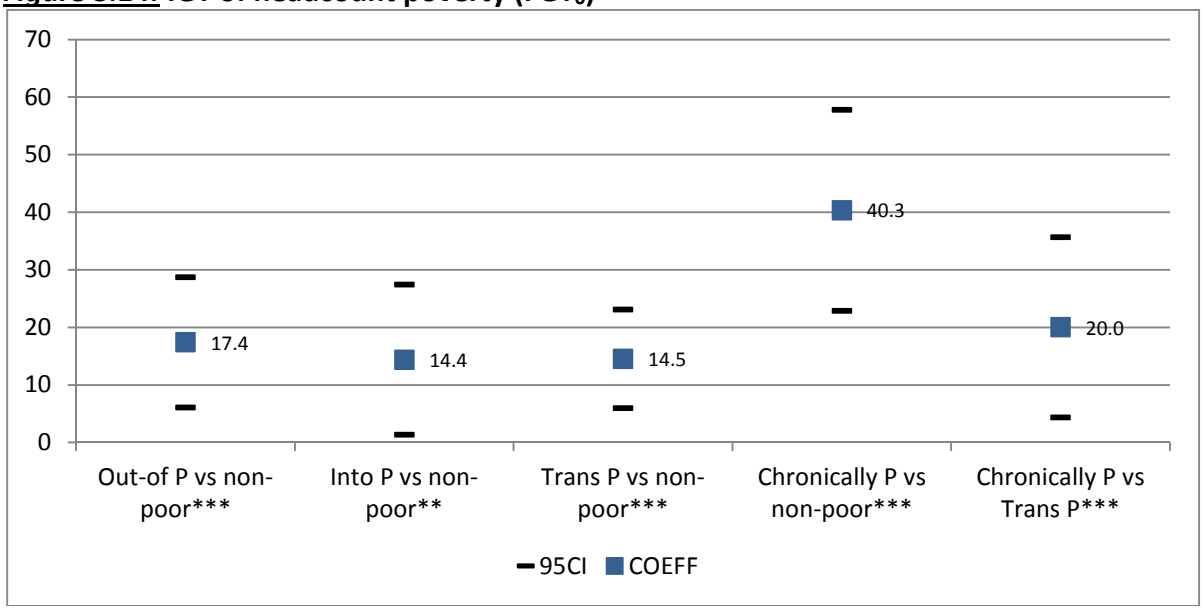


Table 3.1 and Figure 3.14 also show the influence of past intergenerational poverty on the probability that a dynasty household will be poor. Model 1 shows that when a dynasty is linked to a core household that has moved out-of poverty – in contrast to the case when a

dynasty is linked to a non-poor core – such a dynasty's probability of being poor increases by 17.4%. The probability that a dynasty household will be poor is 14.4% greater if the dynasty originated from a core household that moved into poverty, than when it descended from a non-poor core. Model 2 indicates that the probability that a dynasty household will be poor is 14.5% greater if the dynasty is tied to a transitory poor core than a dynasty from a non-poor background. The existence of intergenerational transfer of household poverty is emphasised by the experiences of dynasties that are linked to chronically poor core households. Table 3.1 and Figure 3.14 show that dynasties' probability of being poor is 40.3% (Model 1) and 40.4% (Model 2) greater when these are linked to a chronically poor core than would be the case with dynasties from a non-poor background, and 20% greater than would be the case with dynasties from a transitory poor background.

Table 3.2 summarises the tobit regression results for the depth of poverty in dynasty households. Model 1 again subdivides the transitory poor core households into cores moving into and cores moving out of poverty. Model 2 combines the transitory poor in one category. Figure 3.15 graphically represents the regression coefficients and the 95%-confidence intervals for the poverty transition variables. The regression diagnostics show F-values of 24.61 (Model 1) and 30.32 (Model 2). The tests' associated p-values indicate that both models, in overall terms, are significant in explaining the depth of poverty experienced by dynasty households.

Table 3.2: **Tobit regression results for dynasty households' depth of poverty**

Dynasty poverty	Depth of poverty	
	Model 1 (dy/dx)	**Model 2 (dy/dx)**
Dynasty household size	0.066***	0.066***
Dynasty dependency ratio	0.348**	0.346**
Core transitory out-of p vs non-p	0.274***	0.266***
Core transitory into p vs non-p	0.253***	
Core chronically p vs non-p	0.466***	0.466***
Obs	446	446
F	24.61	30.32
Prob> F	0.000	0.000
Pseudo R2	0.244	0.244

Note: *, **, *** denote statistical significance at, respectively, the 10%, the 5% and the 1% level.

As was the case in Table 3.1 and Figure 3.2 above, increases in household size and dependency ratios are associated with an increase in the depth of poverty experienced by dynasty households. If the dynasty household size increases with one, the depth of poverty increases by 0.067 ($p<0.001$), while a percentage point increase in the dependency ratio, increases the depth of poverty by about 0.348 ($p=0.014$).

Regarding the IGT of depth of poverty, Model 1 shows that the depth of poverty in dynasties tied to a core household that either moved out-of or into poverty is statistically significantly greater than is the case with dynasties tied to non-poor cores. Table 3.2 reflects that the poverty gap in dynasties linked to cores that have moved out-of poverty is, on average, 27.4% larger than the gap for dynasties linked to non-poor cores, and that the poverty gap for dynasties descended from cores moving into poverty is 25.3% larger than that of dynasties descended from non-poor cores. Model 2 suggests that the poverty gap for dynasties linked to transitory poor cores is 26.6% larger than for dynasties linked to non-poor cores. The IGT of the depth of poverty from core to dynasty households is moreover emphasised by the fact that the poverty gap in dynasties tied to chronic-poor cores is 46.6% greater than that of dynasties tied to non-poor cores. Lastly, Figure 3.15 shows that the depth of poverty in dynasties descended from chronically poor backgrounds is 20.0% greater than that of dynasties descended from transitory poor backgrounds. Table 3.2 therefore indicates that the IGT of poverty not only influences the headcount poverty experienced by dynasty households, but also influences the depth of poverty in such dynasties.

Figure 3.15: **IGT of depth of poverty (FGT_1)**

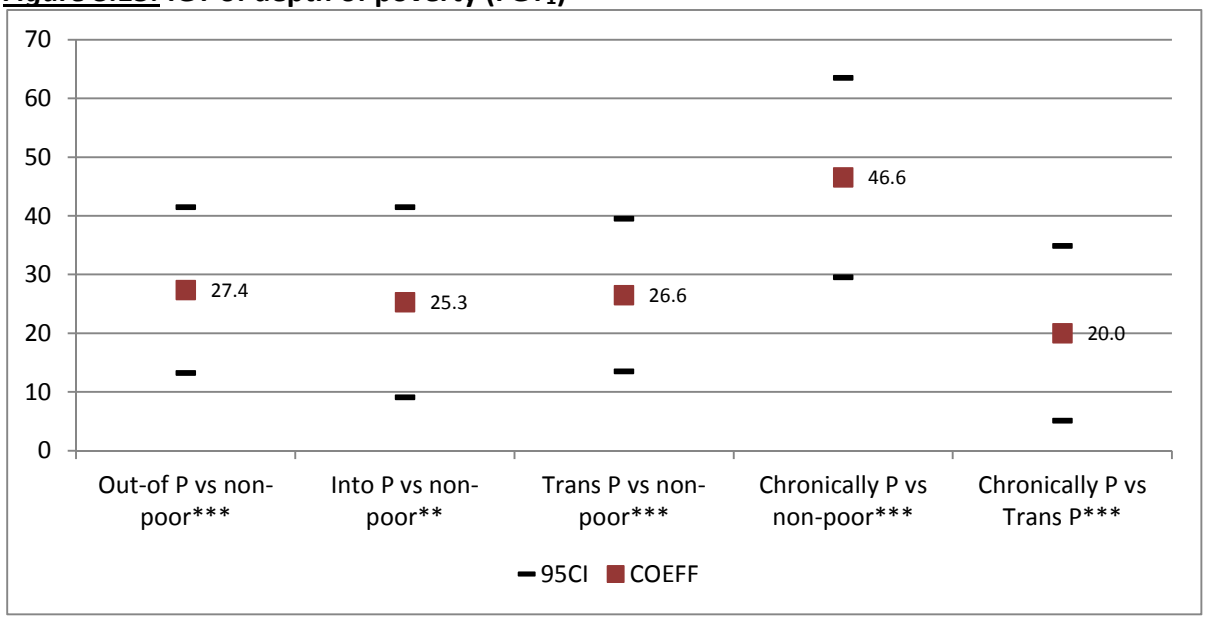


Table 3.3 summarises the tobit regression results for the severity of poverty in dynasty households. As in Table 3.1 and Table 3.2 above, Model 1 subdivides the transitory poor core households into cores moving into poverty and cores moving out-of poverty. Model 2 combines these transitory poor cores into a single category. Figure 3.16 is a graphic representation of the regression coefficients and 95%-confidence intervals for the poverty transition variables. The regression diagnostics show an F-value of 16.21 for Model 1 and 19.94 for Model 2. The test's associated p-values show that models 1 and 2 are overall significant in explaining part of the severity of poverty experienced in dynasty households.

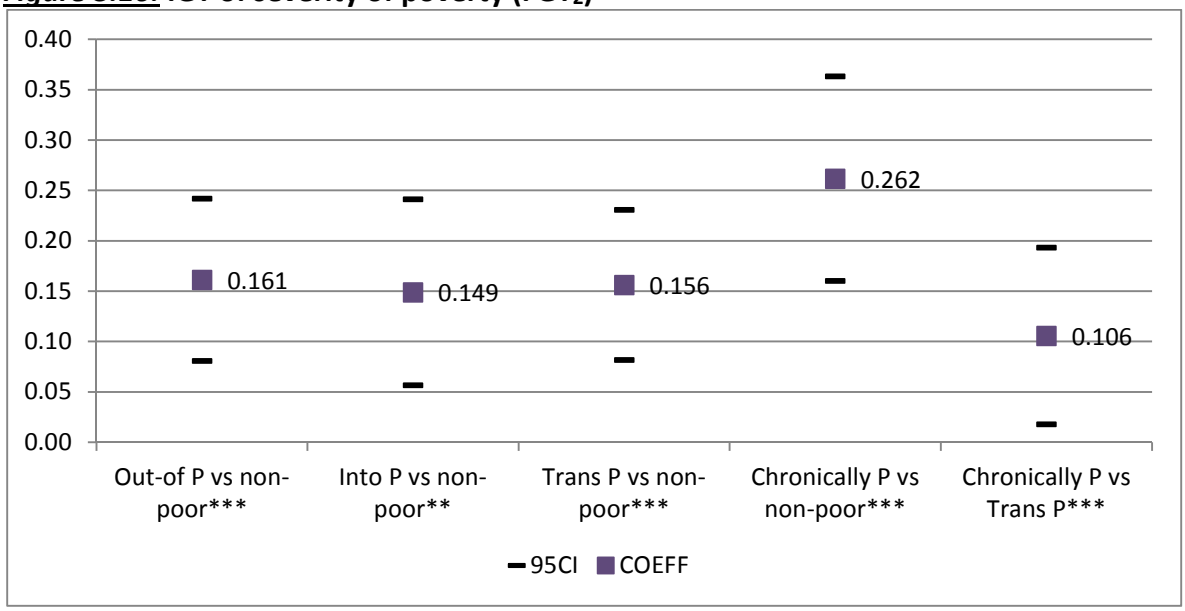
Table 3.3: **Tobit regression results for dynasty severity of poverty**

Dynasty poverty	Severity of poverty	
	Model 1 (dy/dx)	**Model 2 (dy/dx)**
Dynasty household size	0.037***	0.038***
Dynasty dependency ratio	0.188**	0.187**
Core transitory out-of p vs non-p	0.161***	0.156***
Core transitory into p vs non-p	0.149***	
Core chronically p vs non-p	0.262***	0.262***
Obs	446	446
F	16.21	19.940
Prob> F	0.000	0.000
Pseudo R2	0.347	0.347

Note: *, **, *** denote statistical significance at, respectively, the 10%, the 5% and the 1% level.

As with the headcount and depth of poverty, increases in household size and dependency ratios are positively associated with severity of poverty in dynasty households. Contrary to expectations, Model 1 indicates that the poverty in dynasties linked to cores that moved out-of poverty is more severe than that experienced in dynasties linked to non-poor cores. Poverty is also more severe in dynasties linked to cores that moved into poverty than is the case with dynasties descended from non-poor cores. Of particular significance is the high and significant increase in the severity of poverty experienced by dynasties from chronically poor backgrounds in comparison with dynasties from either a non-poor or a transitory poor core household. The regression results therefore confirm that the degree of severity of poverty experienced by dynasties descended from either a transitory poor or a chronically poor background is more severe than that for dynasty households descended from non-poor cores.

Figure 3.16: **IGT of severity of poverty (FGT_2)**



3.6 Summary

The chapters' main conclusions can be summarised as follows:

- Irrespective of levels of income and poverty measure used, dynasty households in the post-apartheid era are better off than are their core households.

- Post-apartheid dynasty households linked to either a transitory or chronically poor core household, are more likely to be poor, lie farther below the poverty line and experience a poverty more severe than that of dynasties linked to non-poor cores.

- Thus, the analysis supports the existence of intergenerational transmission (IGT) of poverty, given that the probability of being poor is 40.3% higher in dynasty households linked to a chronically poor core, and 14.5% higher if such a household is linked to a transitory poor core household, than is the case with dynasties linked to non-poor core households.

Chapter 4

Poverty dynamics and migration by core and dynasty households in KwaZulu-Natal, South Africa

The existence of intergenerational transmission of poverty, where children born to people in poverty may be susceptible to persistent poverty (Moore, 2004), prevents poverty-alleviation strategies from being devised by individuals or households. One such strategy is migration.

Migration is however an extremely complex phenomenon. The literature agrees that migration is multifaceted and that it cannot therefore be explained by a single theory (Boyle et al., 1998; Arango, 2000; Kok et al., 2003). The new economics of migration theory recognises individual migration as a *household* decision that forms part of a risk-management strategy aimed at income diversification (Greenwood, 1985; Bilsborrow et al., 1987; Lauby and Stark, 1988; Junming, 1997; Arango, 2000; Kok et al., 2003). The "general model of migration decision-making" developed by De Jong (2000) emphasises the importance of family networks and also of family migration norms as being important influences on a household's decision to migrate. Past migration patterns and migration networks moreover reduce the cost of migration, thereby increasing the likelihood of migration.

The link between migration and poverty is also complex and moreover dependent on the specific circumstances in which migration takes place (DFID, 2007). Since many households use migration in an attempt to improve their economic situation, migration has the potential to support the achievement of policy objectives aimed at alleviating and eradicating poverty. Unfortunately, poverty (and vulnerability) have two conflicting effects on migration: while poverty creates an incentive to migrate, it also decreases the ability to migrate (Waddington, 2003). Since the option of migration is not always

available to all poor households, especially the chronically poor, research is required to disentangle the links between internal migration and poverty.

The aim of this chapter is to investigate the impact of migration in core and dynasty households on poverty in dynasty households. More specifically, this chapter attempts to:

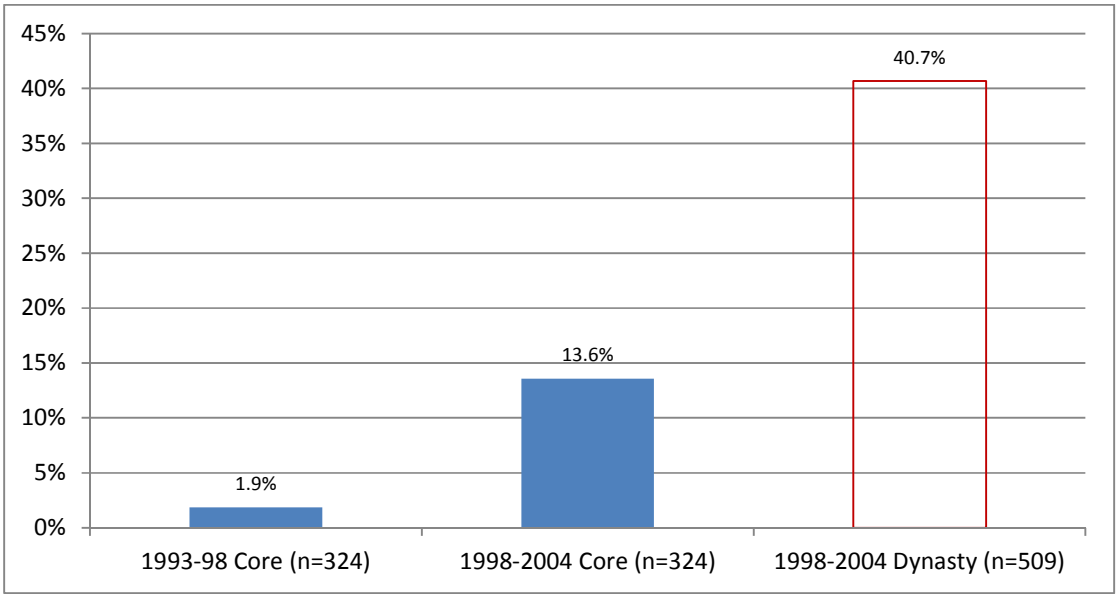
- Document migration patterns and transitions in core households over the period between 1993 and 2004
- Document migration patterns in dynasty households over the period between 1998 and 2004
- Determine the association between migration in core and dynasty households
- Investigate the impact of migration patterns and transitions in core households on the migration patterns in dynasty households
- Investigate the role played by poverty and migratory transitions in core households in explaining migration by dynasty households
- Investigate the importance of migration patterns and transitions in core and dynasty households in explaining the incidence, depth and severity of poverty experienced by dynasty households

4.1 Migration in core and dynasty households

Figure 4.1 below depicts migration of both core and dynasty households. There is a significant increase in post-apartheid migration. The proportion of core households that migrated between 1998 and 2004 (13.6%) is significantly higher than the only 1.9% of core households that migrated between 1993 and 1998 ($p<0.001$). Also, the proportion of dynasty households that migrated between 1998 and 2004, as expected, is significantly higher than migration in core households between 1993 and 1998 or between 1998 and 2004. During the five-year period (1998–2004), a total of 40.7% (207) dynasty households

migrated, while 13.6% (44) and 1.9% (6) only of core households did so. The post-apartheid movements of both core and dynasty households are therefore significantly higher than in earlier periods. Possible explanations for increases in migration after apartheid include the relaxation of influx controls and the simultaneous availability of economic opportunities in geographical areas to which Africans had formerly had limited access.

Figure 4.1: **Migration in core and dynasty households (1993–2004)**

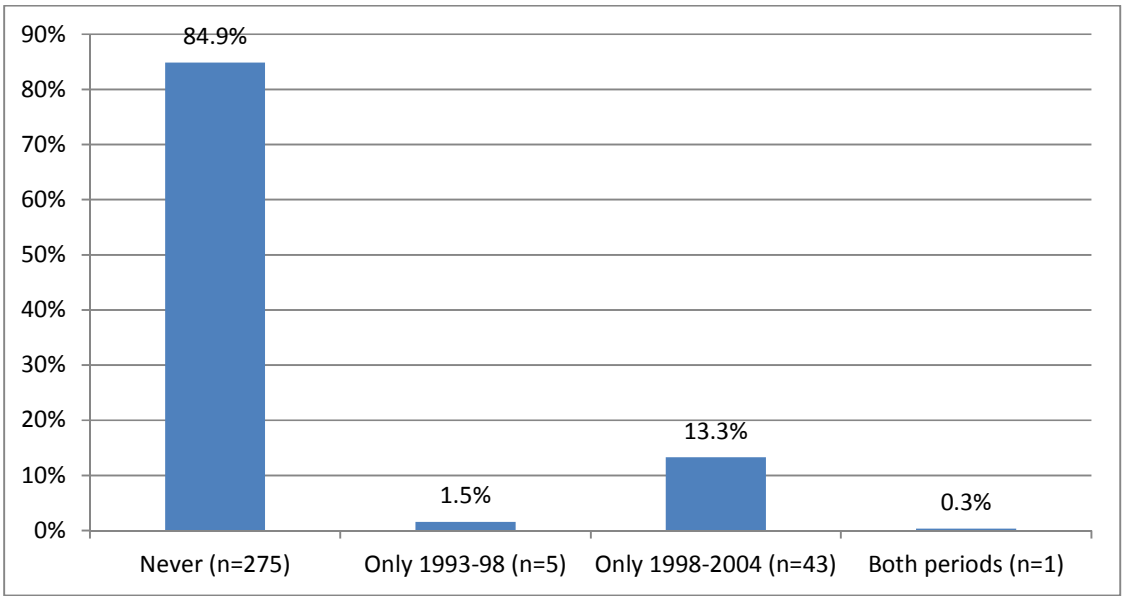


Note: The migration event occurred at any time during the preceding five-year period (1993—1998 and 1998–2004). Migration was not measured in the 1993 survey. All differences are statistically significant at the 1% level of significance ($p<0.001$). The number of households indicated in brackets refers to the number of observations in the core and dynasty households.

Figure 4.2 reports migration transitions in core households. A total of 84.9 per cent (275) of, or, in other words, the majority of core households never migrated (i.e. did not migrate in either of the two five-year periods). One core household only (0.3%) migrated during both the 1993–98 and 1998–2004 periods. In turn, 13.3% (43) of core households migrated between 1998 and 2004 only, but not between 1993 and 1998, while 1.5% (5) migrated between 1993 and 1998 only and not between 1998 and 2004. A total of 15.1% (49) of all core households therefore had ever migrated at some time during any of the two periods under consideration. Figure 4.2, like the results in Figure 4.1 above, thus

suggests that mobility among core households was relatively higher in the post-apartheid era than in the late-apartheid era.

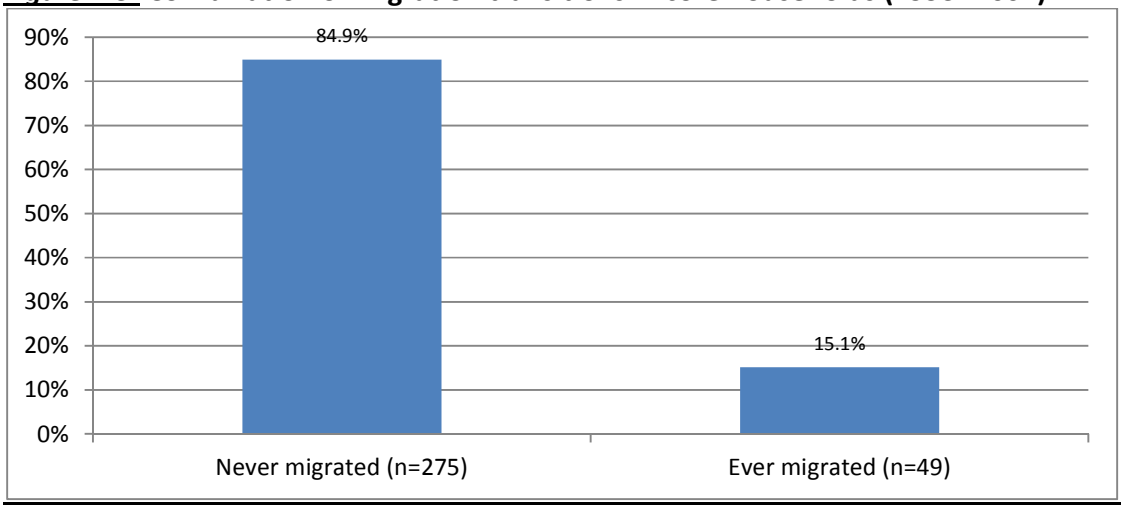
Figure 4.2: **Migration transitions in core households (1993–2004)**



Note: The number of households indicated in brackets refers to the number of core households linked to the migratory category.

Figure 4.3 summarises the core-household migration transitions in Figure 4.2 over the entire period between 1993 and 2004. Almost all of the core households that were linked to one or more than one dynasty household (84.9%) never migrated, while only 15.1% (49) of core households migrated during either the first (1993–1998), the second (1998–2004) or during both of the said periods.

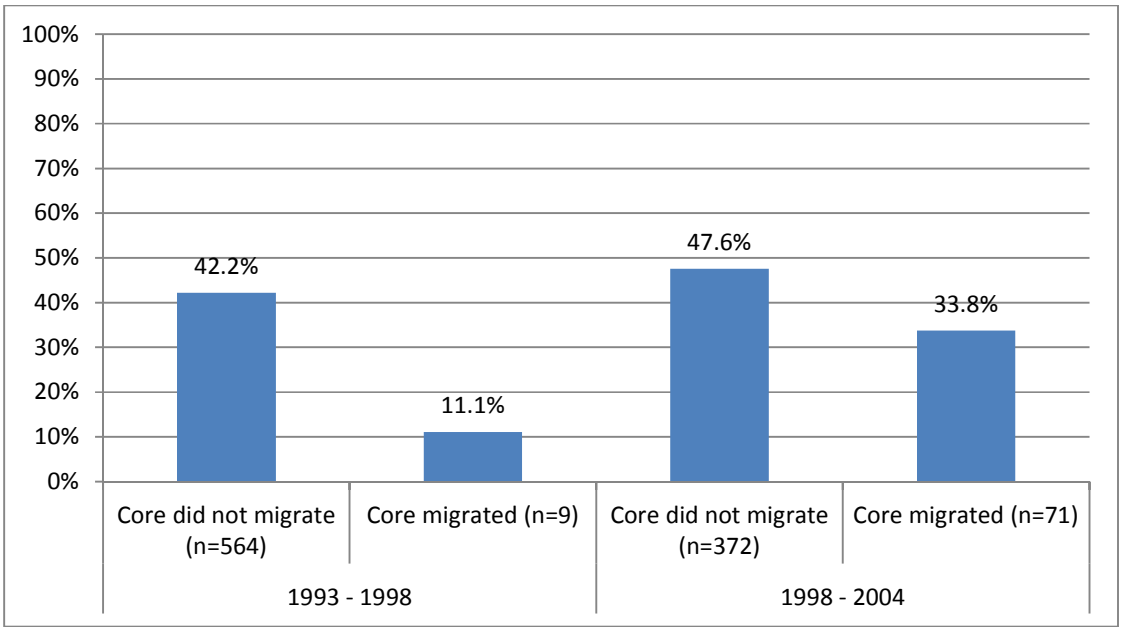
Figure 4.3: **Combination of migration transitions in core households (1993–2004)**



Note: The migration event occurred at any time during the two preceding five-year periods, i.e. between 1993 and 1998 or 1998 and 2004, or during both periods. The number of households indicated in brackets refers to the number of core households linked to the migratory category.

Figure 4.4 indicates the post-apartheid migration of dynasty households, given both the apartheid and post-apartheid migration patterns of their core counterparts. Although one may expect earlier movements by core households to have facilitated movements by their split-offs as is suggested in the literature (Massey et al., 1993), Figure 4.4 however shows this not to have been the case regarding dynasty households. Among dynasties linked to core households that had migrated between 1993 and 1998, only 11.1% (1) had migrated between 1998 and 2004, compared with 42.2% (238) of dynasties linked to cores that had not migrated. Similar results are repeated for migration by dynasties linked to cores that had migrated or not between 1998 and 2004. Among dynasties linked to core households that had migrated during the post-apartheid era, 33.8% (24) had migrated between 1998 and 2004, compared with 47.5% (177) of dynasties linked to cores that had not migrated. In this case, it seems that past migration in core households did not necessarily facilitate greater mobility among dynasty households linked to these core households, as the general model of migration decision making would suggest. According to the model, past migratory patterns facilitate future migration.

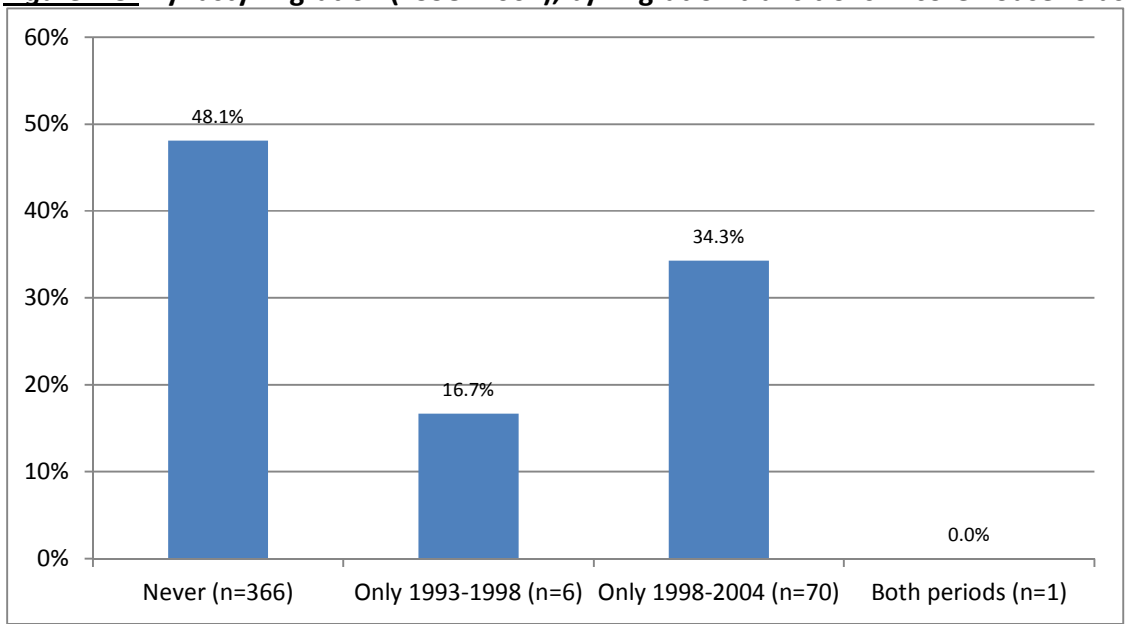
Figure 4.4: **Dynasty migration (1998–2004), by migration in core households**



Note: All differences are statistically significant at, at least, the 10% level of significance (Fisher's exact p=0.087 and p=0.037 respectively for the two comparisons). The number of households indicated in brackets refers to the number of dynasty households linked to the relevant core household.

Figure 4.5 summarises migration over the period between 1998 and 2004 of dynasty households linked to core households exhibiting alternative migration transitions over the entire period of approximately ten years. In the case of dynasty households linked to core households that never migrated, 48.1% (176) migrated in the past five years, compared with 16.7% (1) and 34.3% (24), respectively, of dynasty households linked to core households that migrated between 1993 and 1998 and between 1998 and 2004. Among core households that migrated in both periods, not one dynasty had migrated during either period. It can therefore be concluded that dynasty households linked to non-mobile cores are most mobile and that they are followed by dynasties linked to core households that had migrated in the more recent post-apartheid period. Like Figure 4.4, Figure 4.5 confirms that previous movements by core households were not necessarily associated with greater mobility in dynasty households, as the literature may have led one to suspect (Greenwood, 1988).

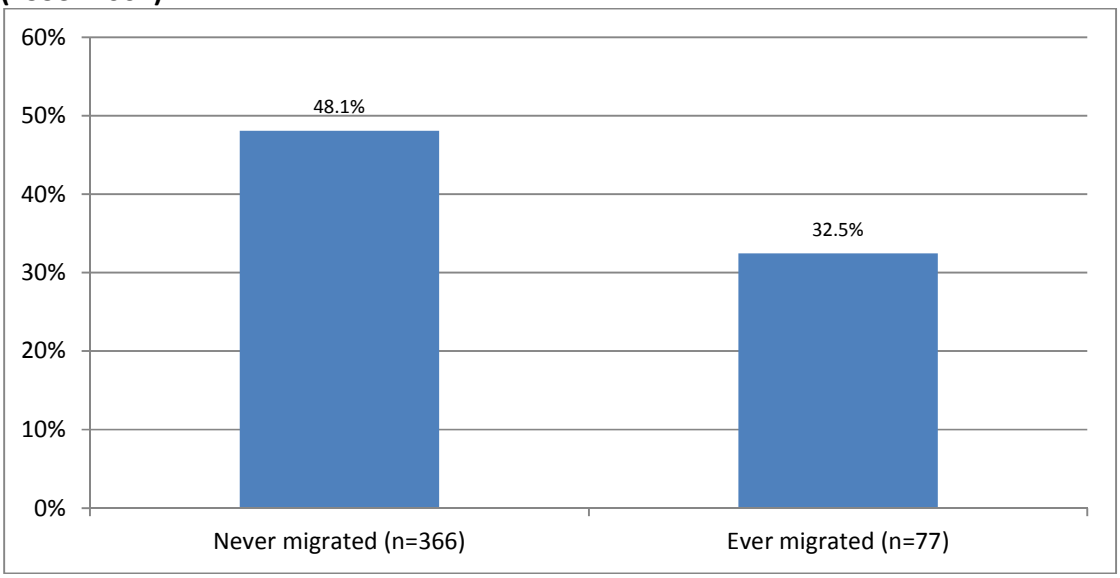
Figure 4.5: **Dynasty migration (1998–2004), by migration transitions in core households**



Note: Differences are statistically significant at the 5% level of significance (Fischer's exact p=0.041). The number of households indicated in brackets refers to the number of dynasty households linked to the relevant core household.

Figure 4.6 summarises core households' migratory movements (as indicated in Figure 4.1), but over the entire late- and post-apartheid period (1993–2004). A total of 48.1% (176), or almost half of the dynasties linked to cores that had never migrated, did migrate during the period between 1998 and 2004. This is significantly higher than the 32.5% (25) of dynasty households linked to cores that ever migrated between 1993 and 2004.

Figure 4.6: **Dynasty migration (1998–2004), by migration transitions in core households (1993–2004)**

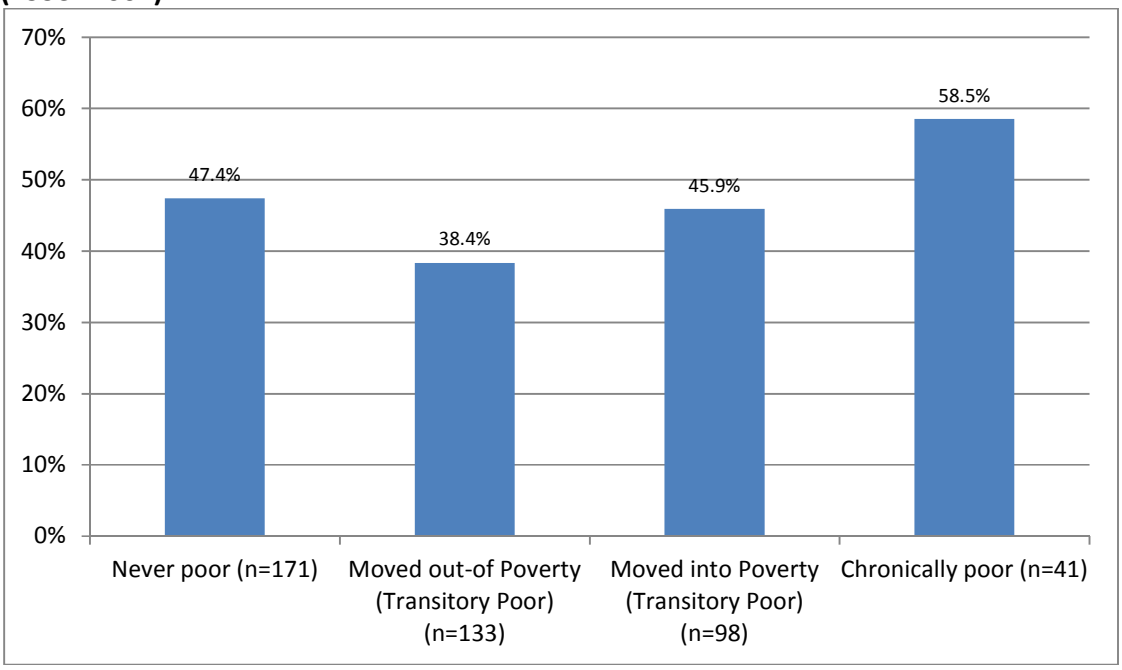


Note: Differences are statistically significant at the 1% level of significance (Fischer's exact p=0.008).
The core migration event occurred at any time during the preceding five-year periods (1993–98 or 1998–2004, or during both periods. The numbers in brackets refer to the number of dynasty households that migrated between 1998 and 2004 that were linked to core households that had ever or never migrated.

4.2 Poverty transitions in core households and dynasty migration

As mentioned above, the migration of households may represent an important strategy for dealing with poverty, with poverty dynamics in core households representing an important determinant of the migration of their offspring. Figure 4.7 and Figure 4.8 depict the associations between migration by dynasty households and the intertemporal poverty observed in core households.

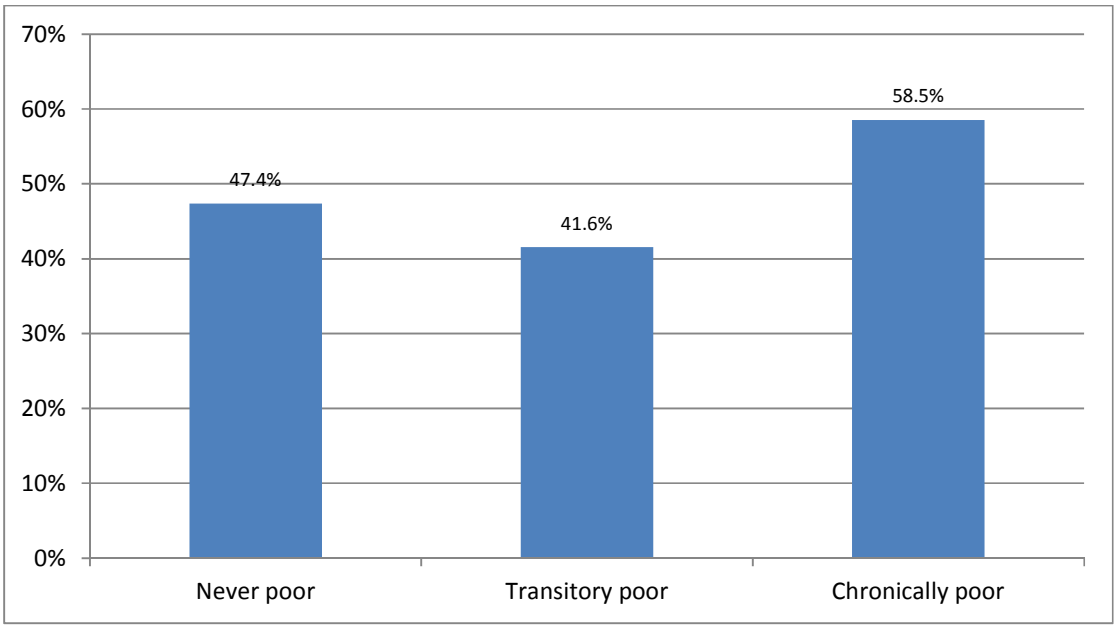
Figure 4.7: **Dynasty migration (1998–2004), by poverty dynamics in core households (1993–2004)**



Note: Differences between dynasties are not statistically significant (Fisher's exact p=0.123). The migration event for dynasty households occurred at any time during the period between 1998 and 2004.

Figure 4.7 illustrates that 47.4% (81) dynasty households linked to non-poor core households migrated between 1998 and 2004, compared with the 38.4**%** (51), 45.9% (45) and 58.5**%** (24), respectively, of dynasty households linked to core households that moved out of poverty, or into poverty, or that remained chronically poor. Although the differences are not statistically significant at the 10% level of significance, they are very close (p=0.123). It would seem that dynasty households linked to chronically poor households or households moving into poverty were thus more likely to migrate than were dynasty households linked to core households that had moved out-of poverty during the period in question. This is consistent with the hypothesis that poorer households use migration as a risk-diversification strategy as suggested by the new economics of migration theory.

Figure 4.8: **Dynasty migration (1998–2004), by poverty dynamics in core households (1993–2004)**



Note: Differences between dynasties are not statistically significant (Fisher's exact p=0.109).

Figure 4.8 confirms that chronically poor dynasties are more likely to migrate than are either transitory poor or never poor dynasties. This may imply that dynasties from chronically poor cores use migration as a risk-diversification strategy in an attempt to escape from poverty.

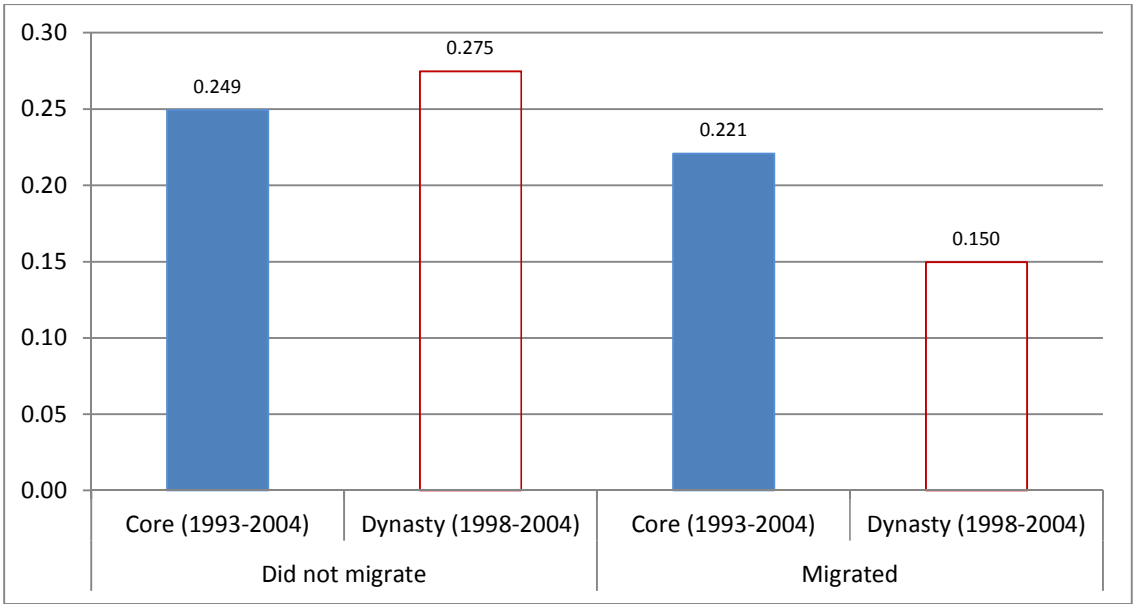
4.3 Migration in core and dynasty households and dynasty poverty

Figure 4.9 depicts the headcount (FGT_0) poverty in dynasty households by their own migratory backgrounds and by those of their linked cores. Comparing dynasty poverty by their own migratory background, a migratory move by a dynasty household would appear to have a statistically significant association with poverty status ($p<0.001$). The relationship between poverty in dynasty households and their own migration background confirms the hypothesis that households that migrate tend to be less poor than those households that do not do so. As many as 27.5% (83) of the dynasty households that did not migrate between 1998 and 2004 found themselves living below the household

poverty line in 2004, while the same was true of only 15.0% (31) of the dynasty households that had migrated between 1998 and 2004 ($p<0.001$). Migration may therefore be seen as a risk-diversification strategy that is used to escape poverty.

If we focus on headcount poverty in dynasty households linked to non-migratory and migratory cores, the same risk-diversification assumption seems to hold, although the differences are not statistically significant ($p=0.300$). Dynasties linked to a migrating core household are less poor than are the dynasties related to cores that had never migrated. The headcount poverty for dynasties linked to migratory core households is 22.1% (17), compared with the 24.9% (92) of non-migratory cores ($p=0.356$).

Figure 4.9: **Headcount poverty (FGT_0) in dynasty households (2004), by migration in core and dynasty households (1993–2004)**



Note: The migration event by core households may have occurred at any time during the preceding five-year periods between 1993 and 1998 or between 1998 and 2004, while the migration event by dynasty household occurred at any time during the preceding five-year period (1998–2004). Differences in headcount poverty between migratory and non-migratory dynasty households are statistically significant at the 1% level of significance ($p <0.001$), while differences in the headcount poverty between dynasties from migratory and those from non-migratory backgrounds are not statistically significant at the 10% level of significance ($p = 0.356$).

Figure 4.10 depicts headcount poverty (FGT_0) dominance in dynasty households by the migration status of their cores, while Figure 4.11 depicts the headcount poverty (FGT_0) dominance in dynasty households by their own migration status. These headcount poverty-dominance curves reflect the cumulative percentage of dynasty households in poverty at different fractions of the R250 (at 2000 prices) per adult-equivalent poverty line. Figure 4.10 reflects no consistent dominance in dynasty headcount poverty rates between dynasties linked to migratory cores and dynasties linked to non-migratory cores (i.e. the dominance curves cross between alternate poverty lines).

Figure 4.10: **Headcount poverty (FGT_0) dominance in dynasty households (2004), by core migration patterns (1993–2004)**

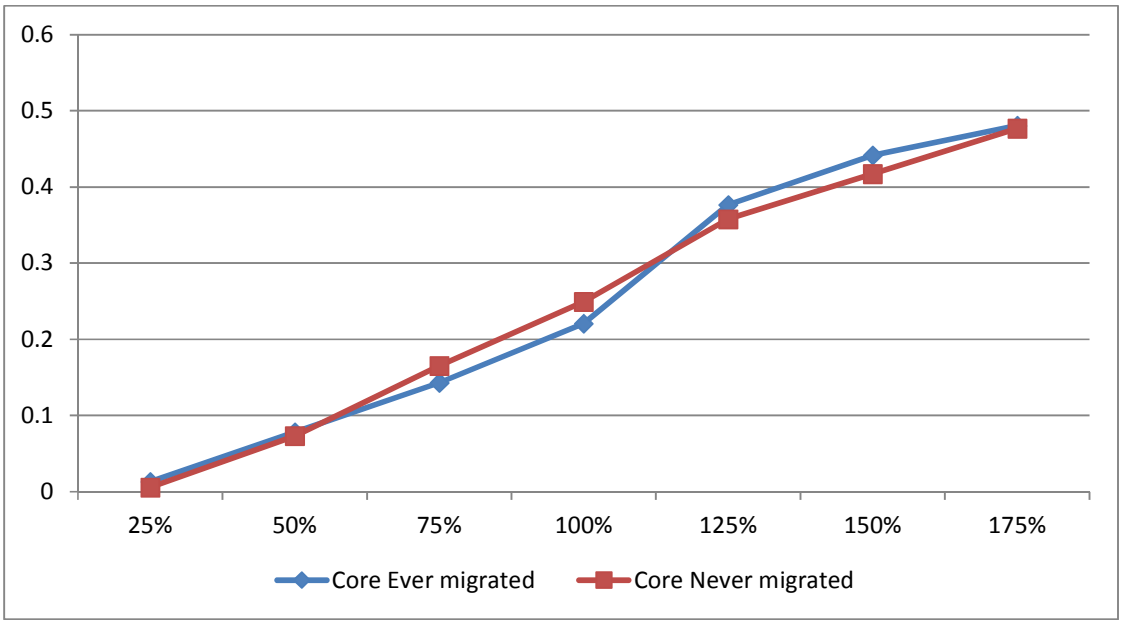


Figure 4.11 indicates the highest levels of headcount poverty in dynasty households that did not migrate. Irrespective of the chosen poverty line, therefore, headcount poverty in dynasty households that did not migrate dominates the headcount poverty in migrating dynasty households. Hence, the finding regarding poverty status and migration in dynasty households is a robust one.

Figure 4.11: **Headcount poverty (FGT_0) dominance in dynasty households (2004), by dynasty migration (1998–2004)**

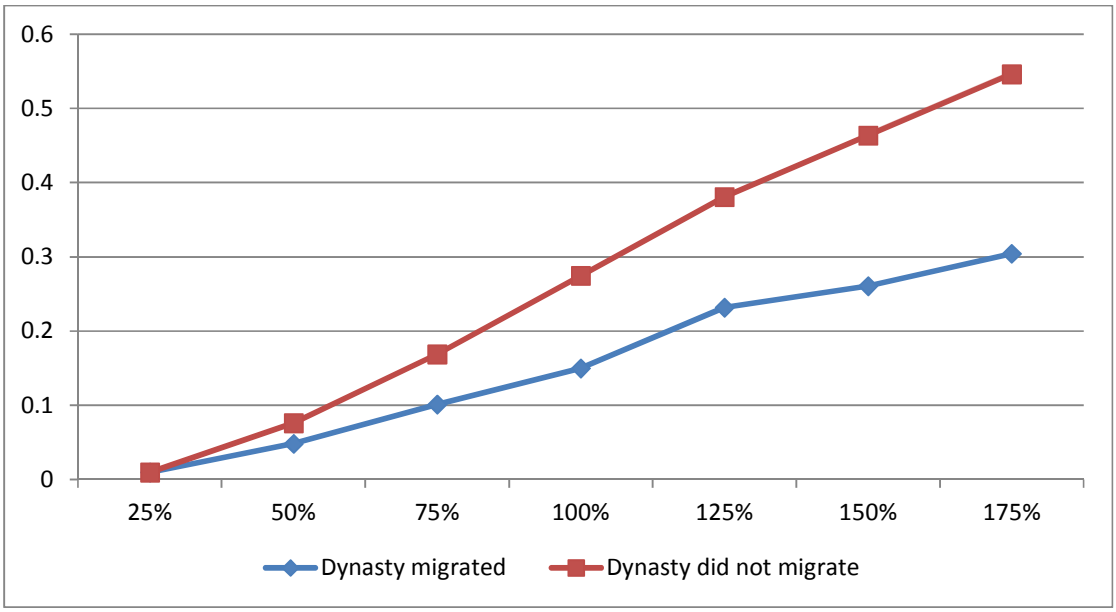
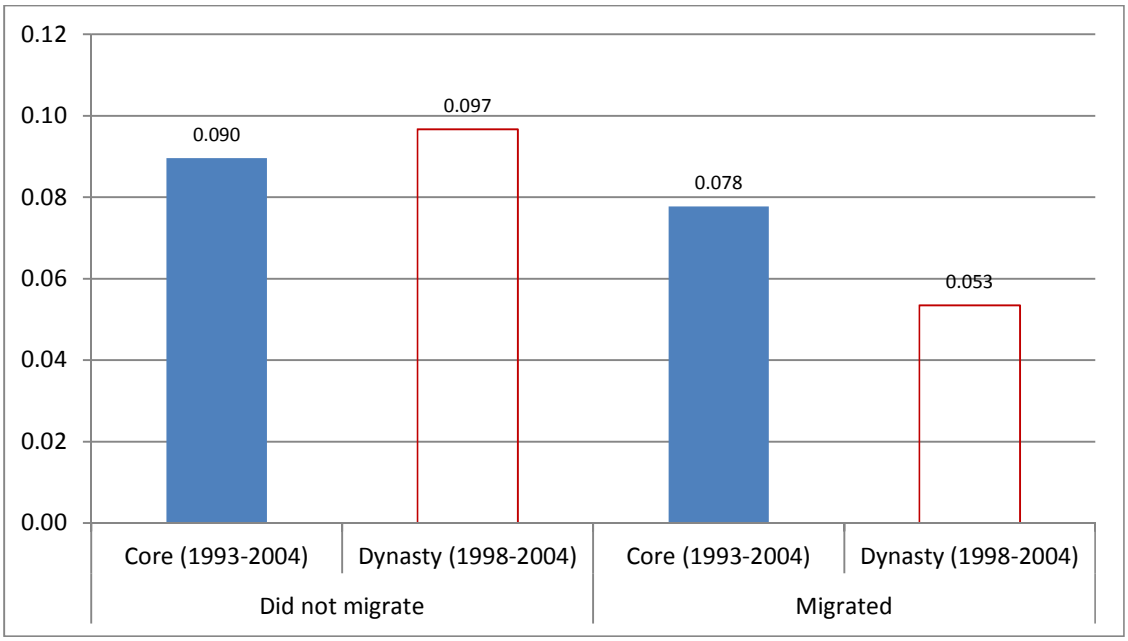


Figure 4.12 summarises the depth of poverty in dynasty households given their own migratory background and that of their linked cores. Migration by a dynasty household not only significantly reduces headcount poverty as Figure 4.9 above indicates, but it also significantly reduces the depth of poverty experienced by dynasty households (p=0.003). The depth of poverty experienced by migratory dynasties (0.053) is significantly lower (p=0.003) than that of non-migratory dynasty households (0.097). The depth of poverty in dynasty households linked to a migratory core household (0.078) is also lower than that of dynasties linked to non-migratory cores (0.090). The difference is however not statistically significant (p=0.305).

Figure 4.12: **Depth of poverty (FGT_1) in dynasty households (2004), by migration in core and dynasty households**

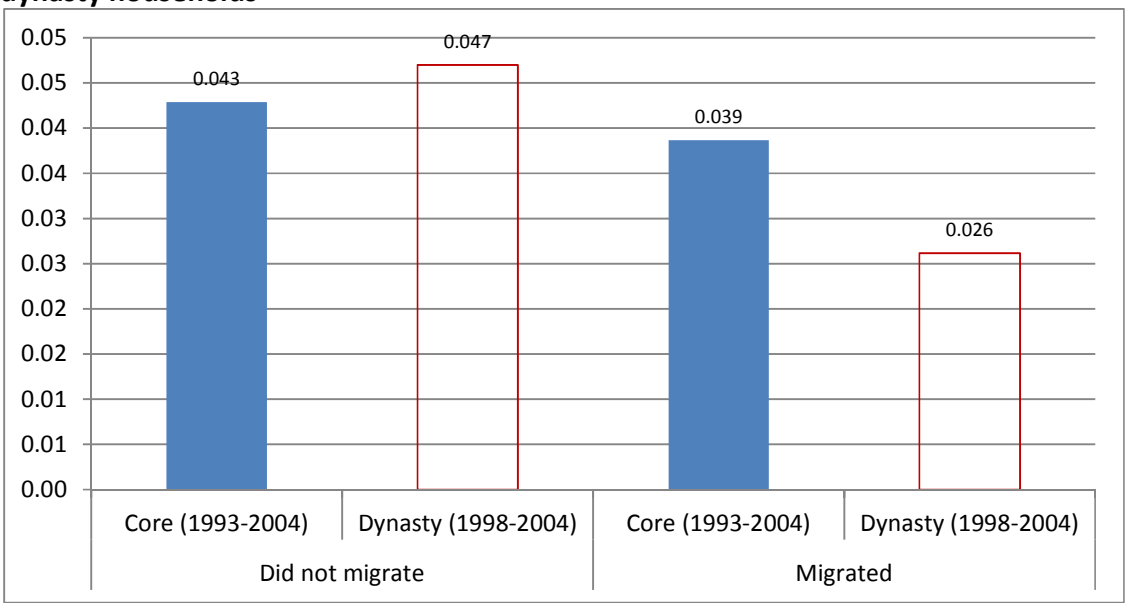


Note: The differences in the depth of poverty in migrating and non-migrating dynasty households are statistically significant at the 1% level of significance (p=0.003), while the differences in the depth of poverty in dynasties of migratory and non-migratory core households are not statistically significant (p = 0.305).

Figure 4.13 depicts the severity of poverty in dynasty households given the migratory background of both the dynasties and their linked cores. As was seen in Figure 4.9 and Figure 4.12 above, dynasty migration significantly reduces the severity of poverty. The severity of poverty experienced by dynasties that migrated between 1998 and 2004 (0.026) is statistically significantly lower (p=0.017) than that for non-migratory dynasties (0.047). The severity of poverty in dynasty households tied to migratory cores is also lower (0.039) than for dynasties from non-migratory cores (0.043). Yet the difference is not statistically significant (p=0.377). Although poverty-dominance curves are not shown for either the depth or severity of poverty, the results are similar to the results in Figure 4.11, which indicate that both the depth and severity of poverty in dynasty households that did not migrate dominate the depth and severity of poverty in migrating dynasty households.

Figure 4.9, Figure 4.12 and Figure 4.13 therefore suggest that the new economics of migration theory hold for dynasty households, since the headcount poverty, and the depth and severity of poverty are statistically significantly lower for migratory dynasties than for non-migratory dynasties. This result emphasizes the importance of household decision making regarding migration to diversify risk (although not for associations between the migration of core households and poverty in their respective dynasty households).

Figure 4.13: **Severity of poverty in dynasty households (2004), by migration in core and dynasty households**



Note: Differences in severity of poverty between migratory and non-migratory dynasty households are statistically significant at the 5% level of significance (p=0.017), while differences in the depth of poverty between dynasties of migratory and non-migratory cores are not statistically significant (p = 0.377).

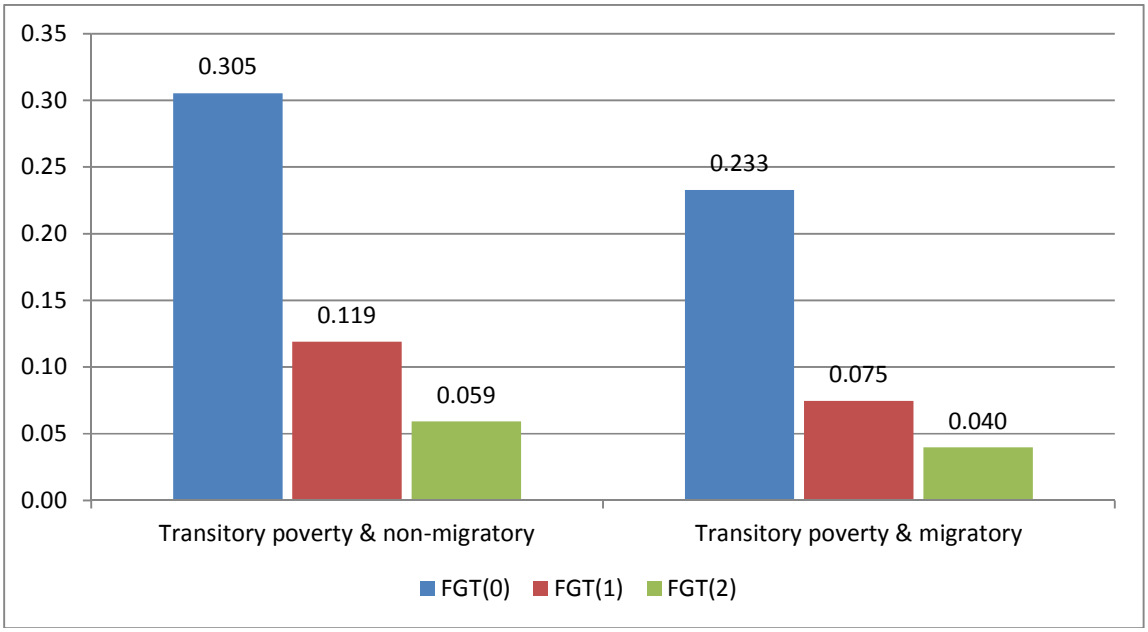
4.4 Poverty and migration in core households and dynasty poverty

Figure 4.14 investigates the link between poverty in dynasty households and poverty and migration dynamics in their linked cores, which, in turn, highlights the significance of both migration and poverty in core households towards determining the poverty status of their next-generation, split-off dynasty households. As a result of limitations in respect of observations, Figure 4.14 only differentiates the transitory poor cores by their migratory

background, with no distinction being made between households that move into versus out of poverty.

According to the results in Figure 4.14, dynasties linked to transitory poor and migratory cores are less poor than are dynasties of transitory poor yet non-migratory cores ($p<0.001$). The headcount poverty (0.233) and the depth (0.075) and severity (0.040) of poverty in dynasties linked to migratory and transitory poor cores are significantly lower than those for dynasties linked to non-migratory but transitory poor cores (0.305, 0.119 & 0.059 respectively) ($p<0.001$).

Figure 4.14: **Poverty in dynasty households (2004), by poverty and migration transitions in core households (1993–2004)**

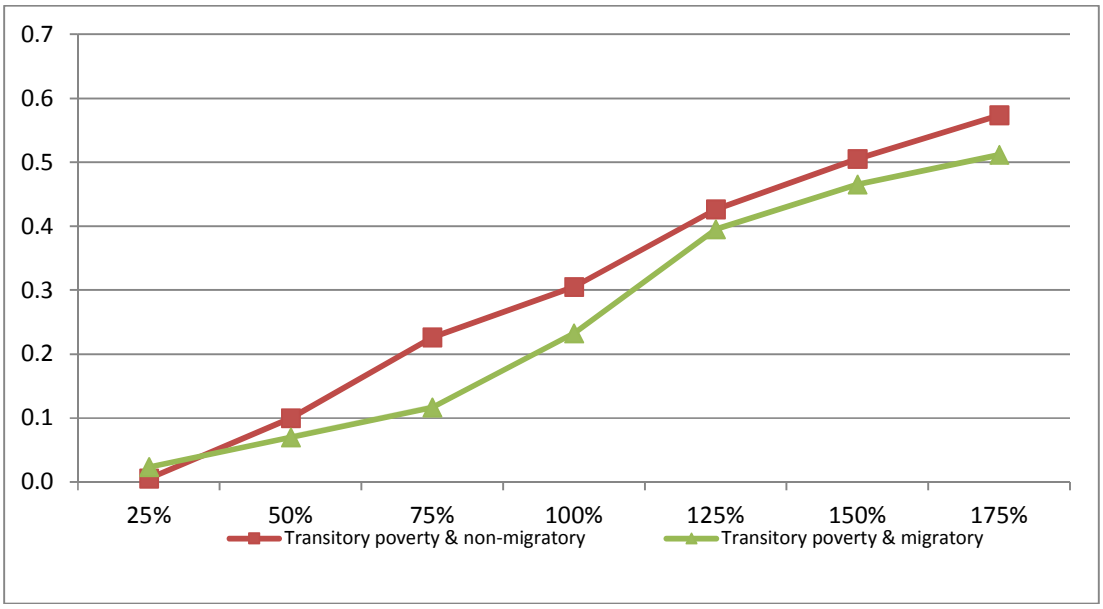


Note: All differences are statistically significant ($p < 0.001$). Categories were limited owing to number of observations (e.g. only six chronically poor core households migrated).
The migration in core households refers to cores that ever migrated versus cores that never migrated.
Non-poor and chronically poor core households were not split by migratory background because of the limitation in respect of the number of observations.

To determine the robustness of results presented in Figure 4.14 above, Figure 4.15 summarises the cumulative headcount poverty rate at different fractions of the chosen poverty line. Figure 4.15 indicates that, at almost all poverty lines, headcount poverty in dynasty households is lower for dynasties from a migratory core household that is also

transitory poor than is the case with dynasties from a non-migratory but transitory poor core household.

Figure 4.15: **Headcount poverty (FGT_0) dominance in dynasty households (2004), by poverty and migration transitions in core households (1993–2004)**



To avoid repetition, results for depth of poverty dominance and severity of poverty dominance in dynasty households by the poverty and migration transitions in core households are not shown here, since they indicate similar results as those in Figure 4.15.

4.5 Regression analysis

Table 4.1 summarises the probit regression results investigating the decision of dynasty households to migrate. Figure 4.16 graphically illustrates the most important statistically significant influences on the probability of migration in dynasty households. All the regression models use robust standard errors to adjust for heteroscedasticity. Using household identifiers, standard errors were also adjusted for clustering, since some dynasty households originated from the same core household. The Wald Chi^2 test and its probability value indicate that all the regression models perform adequately in terms of

overall goodness of fit, which means that at least some of the independent variables explain part of the probability that a dynasty household migrated. In Regression Model 1, 58.0% of dynasty households are correctly classified as being migrant households, whereas regression models 2, 3, 4 and 5 correctly classify 58.3%, 56.9%, 58.0% and 57.8% respectively of dynasty households as being migrant households.

Table 4.1: **Probit regression results: migration of dynasty households**

Dynasty migration	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	-0.022***	-0.022***	-0.022***	-0.021***	-0.022***
Dynasty dependency ratio	-0.108	-0.118	-0.113	-0.106	-0.110
Core poverty (comparison = non-poor)					
Core transitory out of poverty		-0.067	-0.034		
Core transitory into poverty		0.012			
Core chronically poor		0.155*	0.155*		0.155*
Core migration (comparison = never-migrated)					
Core ever migrated	-0.156**				
Core poverty & migration transition (comparison = non-poor)					
Core transitory out of P & non-migratory				-0.051	
Core transitory out of P & migratory				-0.127	
Core transitory into P / chronic & non-migratory				0.084	
Core transitory into P / chronic & migrated				-0.170	
Core transitory P & never migrated					-0.012
Core transitory P & migrated					-0.130
Sample (n)	443	443	443	443	443
Wald chi2 ()	16.49	17.47	15	21.16	17.47
Prob> Chi2	0.0009	0.004	0.0047	0.0017	0.0037
Pseudo R2	0.0279	0.0277	0.0254	0.0315	0.0287
% correctly classified	58.01%	58.25%	56.88%	58.01%	57.79%

Note: Table shows coefficients from probit regressions with (mF/mX) marginal effects.
*, ** and *** denote statistically significant results at the 10%, 5% and 1% levels respectively.

In addition, all the statistically significant variables have the expected signs. Table 4.1 shows that household size decreases the probability that a dynasty household will migrate. On average, if the dynasty's household size increases by one more household member, the probability that this dynasty household will migrate will decrease by about 2.2% ($p<0.001$). This result differs from findings in China by Du, Park and Wang (2005),

which indicated that households with more household members and more labourers but fewer children were more likely to migrate. A possible explanation for our finding may be the cost of migrating and that it is more difficult for larger households than for smaller households to migrate. Table 4.1 also emphasises the fact that past migration histories significantly decrease the probability of migration. The probability that a dynasty household will migrate is 15.6% lower for a dynasty household linked to an ever-migrating core household than for a dynasty household that is linked to a never-migrating core.

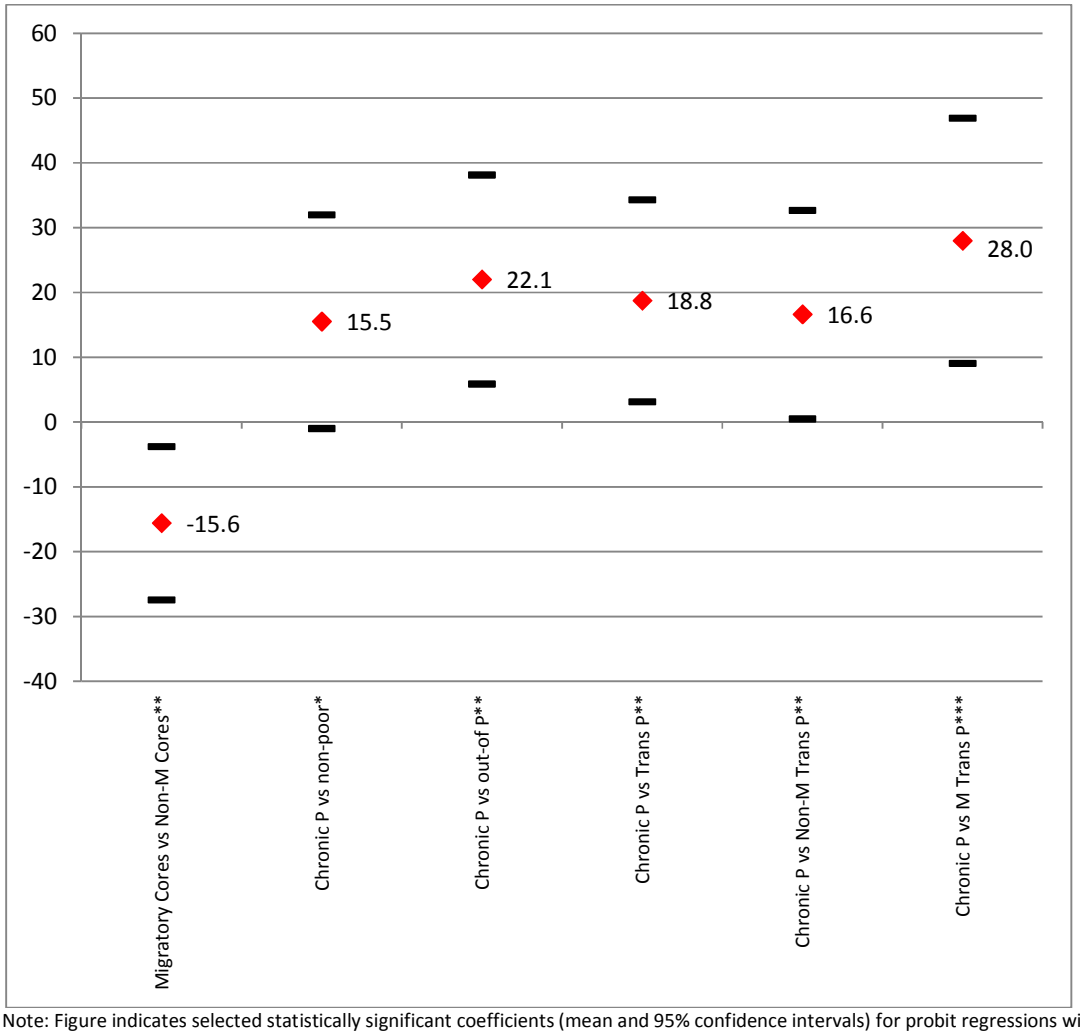
Figure 4.16 contains selected statistically significant coefficients indicating the probability that a dynasty household will migrate. Figure 4.16 emphasises the importance of poverty and migration in linked cores for the dynasty household's decision to migrate. If one looks at the first coefficient on the extreme left in Figure 4.16, it is evident that the probability that a dynasty household will migrate is 15.6% lower for dynasty households linked to a core household that ever migrated than for dynasties linked to cores that never migrated ($p=0.014$). This result is surprising given the fact that – according to the general model of migration decision making – one would expect past migration to facilitate future migratory moves.

If one looks at dynasty migration by core poverty dynamics, the probability that a dynasty household linked to a chronically poor core will migrate is 15.5% ($p=0.072$) higher than for dynasty households of non-poor cores. In addition, the probability that a dynasty household from a chronically poor background will migrate is 22.1% ($p<0.011$) greater than for dynasties linked to households that have moved out-of poverty, and 18.8% ($p<0.022$) higher than for dynasty households that are tied to transitory poor cores.

Combining core migration and poverty enables us to reflect on the importance of migratory and poverty backgrounds in determining the migration observed in dynasty households. If one looks at the middle of Figure 4.16, it indicates that the probability that a dynasty household will migrate is 16.6% higher for dynasties linked to chronically poor cores (irrespective of migration) than for dynasty households linked to non-migratory,

transitory poor core households (p<0.048). In addition, the probability that a dynasty household from a chronically poor background will migrate is 28.0% higher than for dynasties from a migratory and transitory poor background (p<0.008).

Figure 4.16: **Dynasty household migration**



Note: Figure indicates selected statistically significant coefficients (mean and 95% confidence intervals) for probit regressions with (mF/mX) marginal effects. Results are adjusted for dynasty household size (p<0.001) and dynasty dependency ratio (p>0.100).
*, ** and *** denote statistically significant results at the 10%, 5% and 1% levels respectively.

When one analyses migration and poverty in core households separately, it would seem that both migration transitions and poverty dynamics in core households have an important association with dynasty migration. Migration in core households influences dynasty migration in an unexpected way. By interacting the migratory and poverty backgrounds in core households, it appears that poverty dynamics in core households –

especially chronic poverty (irrespective of migration) – have a significantly positive influence on a dynasty household's decision to migrate.

Insofar as migration can both cause poverty and be caused by poverty (Waddington 2003), Table 4.2 and Figure 4.17 investigate the influence that migration may have on headcount poverty in dynasty households. Since the intergenerational transmission of poverty prevents a household from devising risk-diversification strategies, this section also investigates the influence that interaction between migration transitions and poverty dynamics in core households may have on headcount poverty in dynasty households. Table 4.3 indicates all the marginal effects that the chosen explanatory variables have on the probability of a dynasty household being poor (Refer to Appendix 4 for results on the depth and severity of poverty in dynasty households). The regression models all use robust standard errors to adjust for heteroscedasticity. Standard errors were also adjusted for clustering, using household identifiers, since some dynasty households originate from the same core household. The Wald Chi^2 tests together with their probability values indicate that all the models perform adequately in terms of overall goodness of fit. Hence, at least some of the independent variables explain part of the probability that a dynasty household will be poor. The model diagnostics also indicate that almost 80% of dynasty households are correctly classified by the relevant regression models as being poor. All the regression models therefore display a relatively good fit with the data.

Again, household size is associated with higher levels of headcount poverty. On average, an increase in the dynasty household size by one member will increase headcount poverty by between 4.0% and 4.6%. As expected, an increase in the dependency ratio in dynasty households will increase the headcount poverty in these households between 27.9% and 35.7%, which emphasises the economic burden dependants place on a household. Table 4.2 also indicates that headcount poverty of dynasty households linked to a migratory core does not differ significantly from that of dynasties linked to a non-migratory core. Only migration by the dynasty household itself significantly influences the prevalence of

poverty in dynasty households, decreasing the probability of being poor by 10.1% in comparison with non-migratory dynasties.

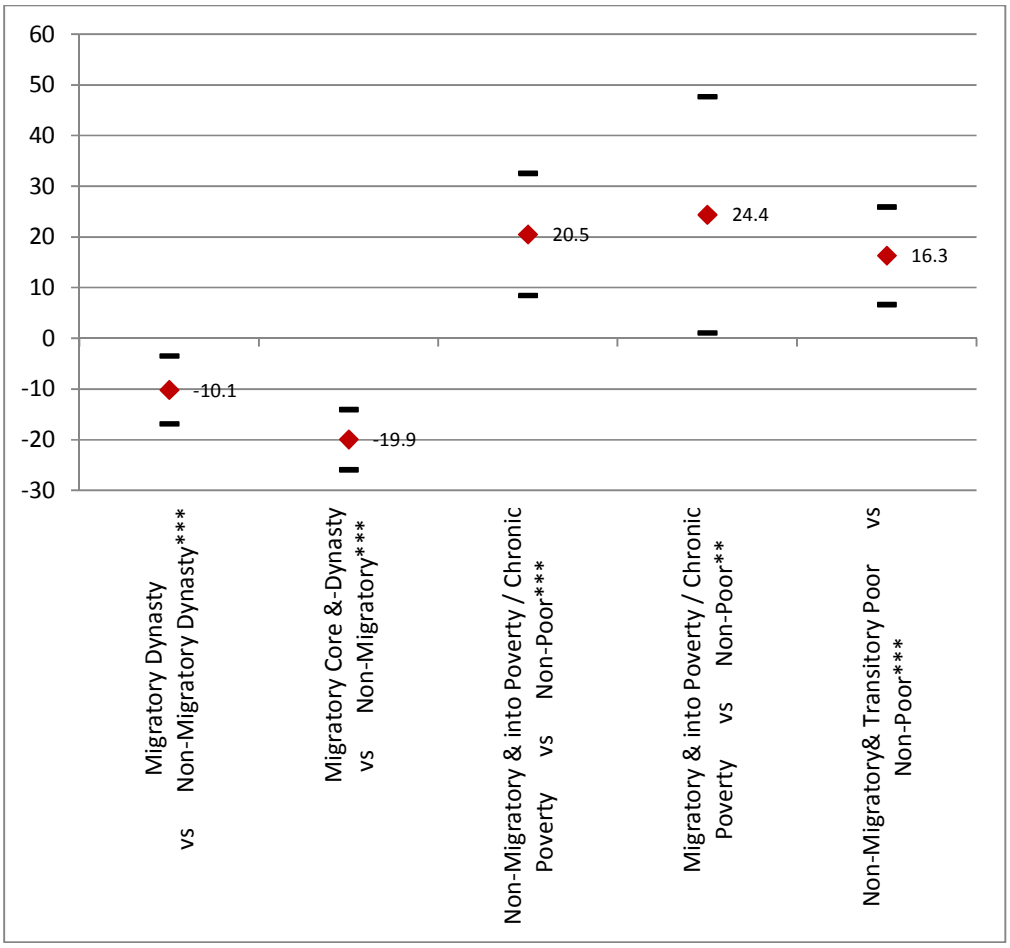
Table 4.2: **Migration as determinant of headcount poverty in dynasty households**

Dynasty headcount poverty	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	0.046***	0.040***	0.044***	0.044***	0.045***
Dynasty dependency ratio	0.357***	0.296***	0.329***	0.297***	0.281**
Migration (comparison = never-migrated (cores / dynasties)					
Dynasty migration		-0.101***			
Only dynasty hh migrated			-0.052		
Core migrated (any period)	-0.052				
Only core hh migrated			-0.004		
Core & dynasty migrated			-0.199***		
Core poverty & migration transition (comparison = non-poor)					
Core transitory out & never migrated				0.207***	
Core transitory out & migrated				0.072 .	
Core transitory into / chronic & never migrated				0.205***	
Core transitory into / chronic & migrated				0.244***	
Core transitory & never migrated					0.163***
Core transitory & migrated					0.101 .
Core chronically poor					0.403***
Sample (n)	446	573	443	446	446
Wald chi2 ()	53.81	74.27	67.76	59.93	66.41
Prob> Chi2	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.167	0.159	0.1850	0.202	0.213
% correctly classified	78.03%	79.76%	78.10%	80.04%	80.27%

Note: Table shows coefficients from probit regressions with (mF/mX) marginal effects.
*, ** and *** denote statistically significant results at the 10%, 5% and 1% levels respectively.
Appendices 4A and 4B contain the regression results for the depth and severity of poverty in dynasty households that mirror the above results.

According to Regression Model 3, the probability that a dynasty household is poor will decrease by 19.9% if both the dynasty household and their linked core household migrated. Since 24 of the 25 dynasty households that migrated were linked to cores that migrated in the same period, it can be concluded that these dynasty households most likely migrated together with their linked core households, which, contrary to the results presented earlier above, offers some evidence of the joint migration of extended families.

Figure 4.17: **Headcount poverty in dynasty households**



Note: Figure reflects selected statistically significant coefficients (mean and 95% confidence intervals) for probit regressions with (mF/mX) marginal effects.
Results are adjusted for dynasty household size ($p<0.001$) and dynasty dependency ratio ($p>0.100$).
*, ** and *** denote statistically significant results at the 10%, 5% and 1% levels respectively.
Appendices 4A and 4B contain the regression results for the depth and severity of poverty in dynasty households that mirror the above results.

Regression models 4 and 5 combine poverty dynamics and migration in core households as determinants of poverty in dynasty households. As reported in Chapter 3, the dominant determinant of dynasty poverty remains the existence of the intergenerational transmission of poverty. The probability of dynasty households being poor, is 20.5% higher for dynasty households traced back to non-migratory core households that either moved into poverty or were chronically poor than for dynasties linked to non-poor backgrounds ($p<0.001$). The probability of being poor is 24.4% higher for dynasties from migratory core households that also either moved into poverty or were chronically poor

than for those from non-poor backgrounds (p=0.020). The last coefficient indicates that the probability of being poor is 16.3% higher for dynasties linked to non-migratory and transitory poor core households than for dynasties linked to non-poor core households (p=0.001). Given the overlapping confidence intervals for these coefficients, migration by core households does not significantly influence the probability that a dynasty household will be poor, even when interacted with poverty in the cores.

4.6 Summary

The chapters' main conclusions can be summarised as follows:

- Mobility of core households is relatively higher in the post-apartheid era than in the earlier, late-apartheid era.

- Dynasty households linked to non-mobile (mobile) cores are most (least) mobile.

- Twenty-four of the twenty-five dynasty households that migrated were linked to cores that migrated in the same period. These dynasty households most likely migrated together with their linked core households, which offers some evidence of the joint migration of extended families.

- Poverty dynamics in core households – especially chronic poverty (irrespective of migration) – have a significant positive influence on a dynasty household's decision to migrate.

- The new economics of migration theory seems to hold for dynasty households, since the headcount poverty and the depth and severity of poverty are statistically significantly lower for migratory dynasties than for non-migratory dynasties.

APPENDIX 4

APPENDIX 4.1: Tobit regression results: determinants of depth of poverty in dynasty households

Dynasty depth of poverty	Model 1	Model 2	Model 3	Model 5	Model 6
Dynasty household size	0.072***	0.068***	0.070***	0.066***	0.066***
Dynasty dependency ratio	0.498***	0.415***	0.457***	0.375**	0.354**
Migration (comparison = never migrated (cores / dynasties)					
Dynasty migration		-0.165***			
Only dynasty hh. migrated			-0.095		
Core migrated (any period)	-0.106		-0.046		
Only core hh. migrated					
Core & dynasty migrated			0.601***		
Core poverty & migration transition (comparison = non-poor)					
Non-migratory & transitory out of P core				0.315***	
Migratory & transitory out-of P core				0.092*	
Non-migratory & into P / chronic P core				0.321***	
Migratory & into P / chronic P core				0.343***	
Non-migratory & transitory P core					0.285***
Migratory & transitory P core					0.159*
Sample (n)	446	573	443	446	446
F	31.46	39.83	22.69	19.11	24.64
Prob> F	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.191	0.182	0.210	0.241	0.248

Note: Table shows coefficients from tobit regressions with (mF/mX) marginal effects.
*, ** and *** denote statistically significant results at the 10%, 5% and 1% levels respectively.

APPENDIX 4.2: Tobit regression results: determinants of severity of poverty in dynasty households

Dynasty severity of poverty	Model 1	Model 2	Model 3	Model 5	Model 6
Dynasty household size	0.041***	0.039***	0.039***	0.037***	0.037***
Dynasty dependency ratio	0.273***	0.224***	0.249***	0.202**	0.191**
Migration (comparison = never-migrated (cores / dynasties)					
Migratory dynasties		0.092***			
Only dynasty hh. migrated			-0.057		
Migratory cores (any period)	-0.056				
Only core hh. migrated			-0.024		
Core & dynasty migrated			-0.347***		
Core poverty & migration transition (comparison = non-poor)					
Non-migratory & transitory out of P core				0.182***	
Migratory & transitory out of P core				0.067	
Non-migratory & into P / chronic P core				0.184***	
Migratory & into P / chronic P core				0.200***	
Non-migratory & transitory P core					0.166***
Migratory & transitory P core					0.103***
Sample (n)	446	573		446	446
F	22.21	26.46		12.95	16.21
Prob> F	0.000	0.000		0.000	0.000
Pseudo R2	0.269	0.260		0.342	0.351

Note: Table shows coefficients from tobit regressions with (mF/mX) marginal effects.
*, ** and *** denote statistically significant results at the 10%, 5% and 1% levels respectively.

Chapter 5

Remittances in core and dynasty households in KwaZulu-Natal, South Africa

The existence of inter-generational transmission of poverty hampers poverty-alleviation strategies taken by policy makers, individuals or households. A household strategy aimed at alleviating the prevalence of poverty involves remittances. Remittance flows represent any monetary and/or in-kind transfers that migrants send home to family members or other beneficiaries, be it via formal or informal channels (World Bank, 2005). These monetary and in-kind remittances are referred to as *economic remittances*.

Both the level of economic remittances and the number of remittance-receiving households in South Africa have decreased markedly since 2000. The percentage of households receiving remittances decreased from 24.2% in 1993 (36.4% in 2000) to only 14% in 2008. On average, remittances contributed 3.1% to household income in 1993 and increased to 6.9% in 2000, but declined to 5.4% by 2008. Yet, the contribution of remittances to household income decreased substantially, especially in respect of the poorest households. For the poorest ten per cent of households, remittances contributed 52.2% to household income in 1993 and then declined to 33.5% in 2000 before plummeting to only 8.1% in 2008 (OECD, 2010). A likely explanation for this significant decrease in remittances, especially for lower deciles, may be that remittances were increasingly crowded out by government grants (OECD, 2010).

Studies usually focus on the economic and the non-economic impacts of remittances on receiving households and communities (Urzua, 2000; Goldring, 2004; Martinez, 2004; Seddon, 2004; Cohen, 2005), with the impact of remittances on poverty and the possible alleviation thereof having been widely studied (Zachariah et al., 2001; Adams, 2005, Adams & Page, 2005). Rather than focusing only on the possible impacts of remittances, this chapter starts by focusing on factors that have influenced post-apartheid remittance flows. Vargas-Silva (2008) emphasises that remittances are influenced by both micro- and macro-level factors, with macro-level factors being more important in the case of remittances sent over country borders. Micro factors include the level of income, education, gender and family composition of the sending and receiving migrant or household, while macro factors

represent economic influences such as the exchange rate, inflation and level of output of the economy (Vargas-Silva, 2008).

As part of the co-insurance motive to remit, the assumption is that poorer dynasty households are more likely to receive remittances. The aim of this chapter is to investigate the influence that core-household remittances may have on the value and on the probability by post-apartheid dynasty households receiving remittances and the effect thereof on the probability that dynasty households will be poor. The specific objectives are to:

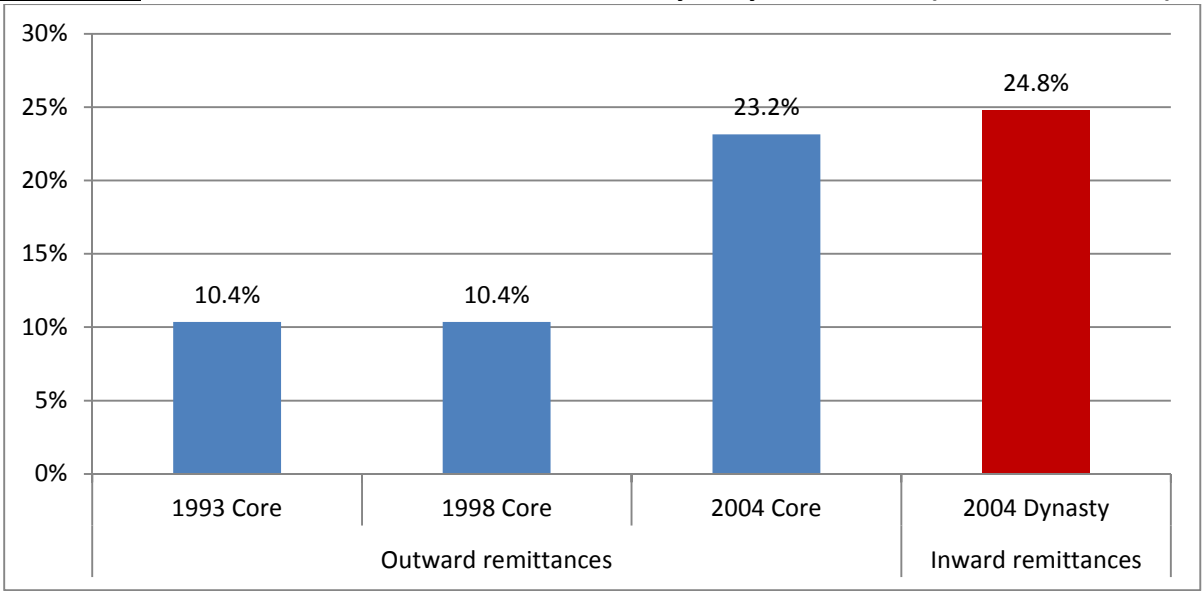
- Describe the trends in outward remittance flows in core households
- Document inward remittance flows in dynasty households
- Examine the association between outward remittance flows in core households and inward remittance flows in dynasty households
- Document transitions in outward remittance behaviour in core households
- Compare inward remittance flows in dynasty households across dynamics in outward remittance behaviour in core households
- Investigate the importance of core and dynasty remittance transitions and patterns in assessing the impact of remittances on the incidence, depth and severity of poverty experienced by dynasty households

5.1. Remittance flows

Figure 5.1 depicts the prevalence of outward remittances in core households and the prevalence of inward remittances in dynasty households. There seems to have been a post-apartheid increase in outward remittances by core households, with these having more than doubled in the period between 1993 and 2004. Comparison of outward remittances by core households over the three years under consideration (1993, 1998 & 2004) reveals that the percentage of core households in 2004 who were sending remittances (23.2%) was significantly higher than in both 1993 (10.4%; $p<0.001$) and 1998 (10.4%; $p<0.001$). The percentage of the 1993 core households sending remittances (10.4%) was identical to the percentage of the 1998 core households that sent remittances ($n=357$; $p=1.000$). The percentage of the 2004 dynasty households receiving remittances (24.8%) did not differ

significantly from the percentage of the 2004 core households that were sending remittances (23.2%: p=0.2497). Studies, such as the one by the Organisation for Economic Co-operation and Development (OECD, 2010), which investigated trends in income distribution and poverty since the demise of apartheid in South Africa, suggest that decreasing remittance income is being substituted by increasing government grants, and, as a result, remittances have become less important in contributing to total household income (OECD, 2010). Although this may be the case, Figure 5.1 indicates that nearly a quarter of the dynasty households (24.8%, n=512) still received remittances in 2004.

Figure 5.1: **Prevalence of remittances in core and dynasty households (1993, 1998, 2004)**

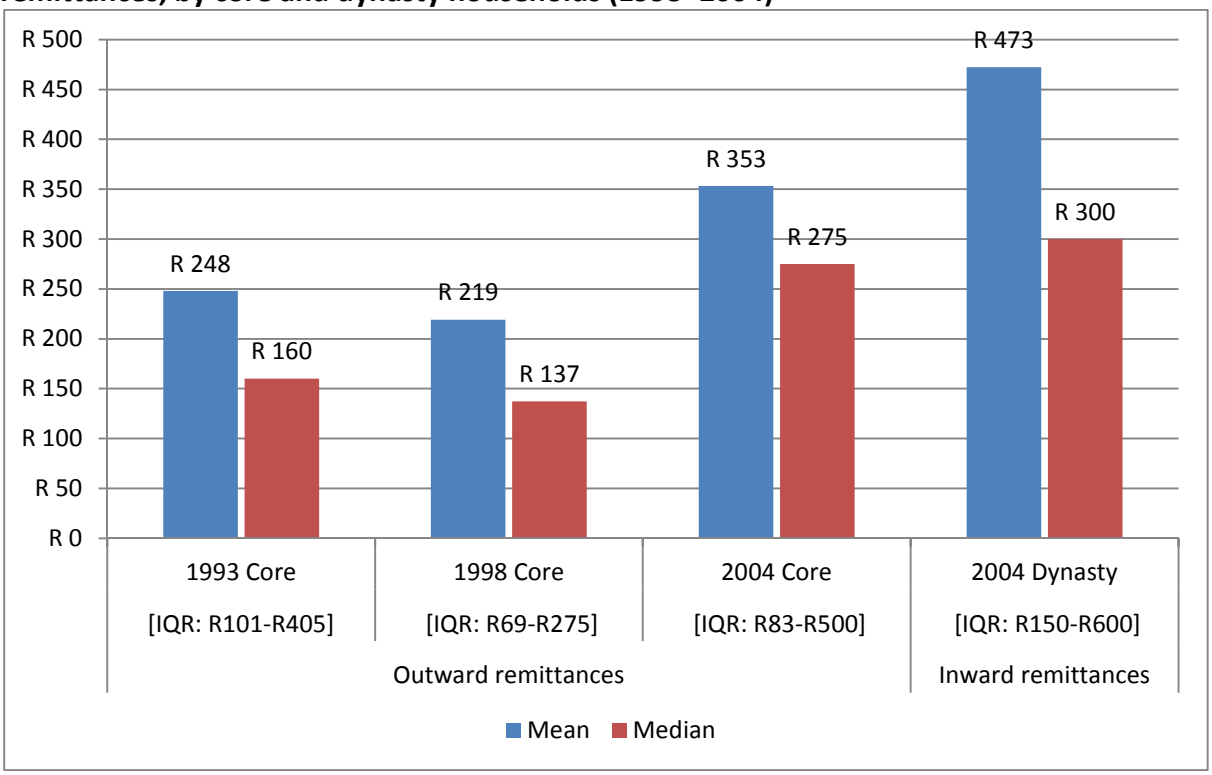


Note: For the specific levels of statistical significance and p-values, refer to the discussion in the text below.

Figure 5.2 summarises the levels of average real monthly outward remittances by core households and the average real monthly inward remittances received by dynasty households. Figure 5.2 also depicts the levels of median real monthly remittances. The interquartile ranges [IQR] are indicated in brackets below the graph. Between 1993 and 2004 (Figure 5.2), the Rand value of average real outward remittances in core households increased statistically significantly from R248 in 1993 (n=37) to R353 (p<0.001) in 2004 (n=75), following the slight but statistically insignificant decline in outward remittances between 1993 and 1998 (p=0.291). As suggested by Leibbrandt et al. (2010), the importance of remittances as a contributor to total household income decreased over the periods under consideration. Although this may be the case, remittances in 2004 contributed on average 5.1% to total

dynasty income and contributed on average 22.6% to total household income for dynasties receiving remittances.

Figure 5.2: **The average, the median and the interquartile ranges of real monthly remittances, by core and dynasty households (1993–2004)**



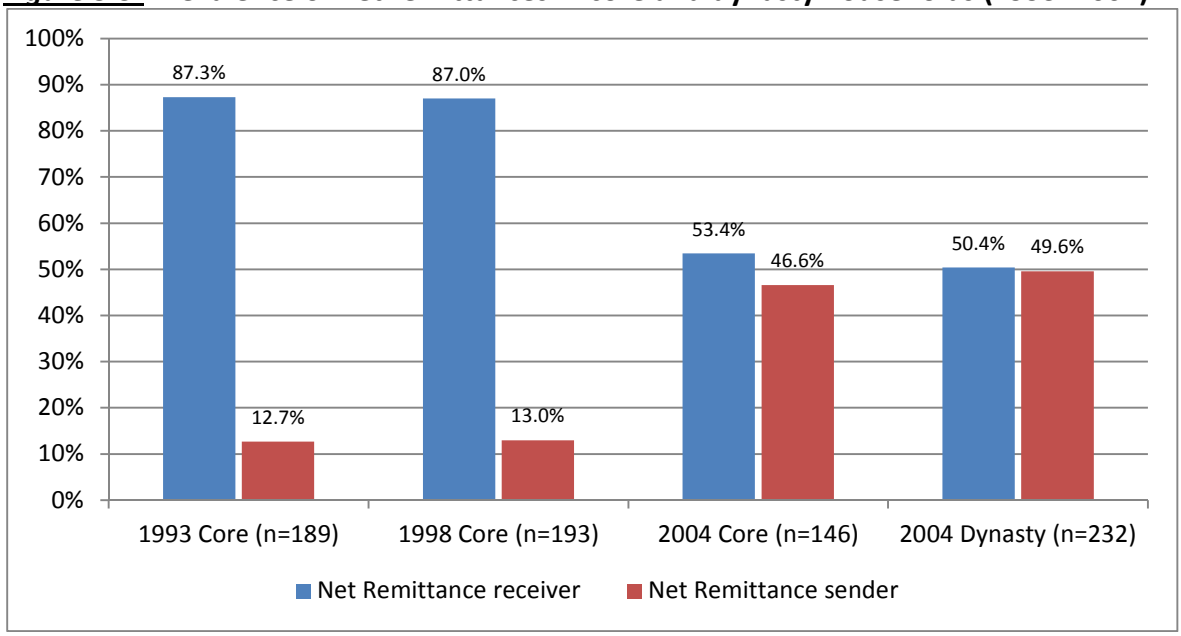
Note: For the specific levels of statistical significance and p-values, refer to the discussion in the text below.
Note: Interquartile ranges are indicated in brackets.

A comparison of core outward and dynasty inward remittances reveals the average outward remittances by core households to have been significantly lower than the average real inward remittances received by dynasty households, which indicates the possibility of multiple remittance inflows having been received by dynasties from sources other than core households. This represents a possible topic for future research.

In comparing real median remittances, Figure 5.2 illustrates trends in median inward and outward remittances to be similar to trends in average remittance flows (Figure 5.1). Although there was a decrease in median outward remittances between the 1993 core households (R160) and the 1998 core households (R137) of R23, there was a remarkable increase compared with the 1993 figure of R115 in the median outward remittances in the 2004 core households (R275). Median inward remittances received by the 2004 dynasty households were only marginally higher than were the outward remittances from the 2004 core

households. The interquartile ranges moreover indicate a large dispersion in remittances around the median remittance value.

Figure 5.3: **Prevalence of net remittances in core and dynasty households (1993–2004)**



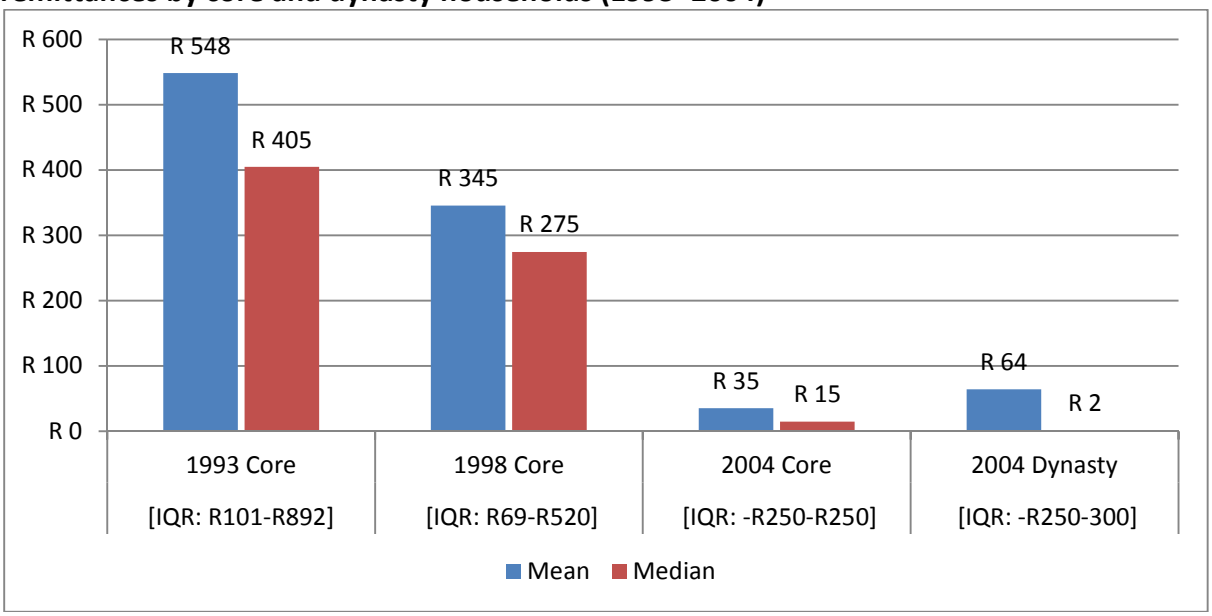
Note: A *net remittance receiver* is a household receiving more remittances than they sent, while a *net remittance sender* is a household that sends more remittances than they receive.
For the specific levels of statistical significance and p-values, refer to the discussion in the text below. Only one household sent and received the same real amount of remittances in both 1993 and 1998. Only one dynasty household sent and received the same real value of remittances in 2004.

Figure 5.3 summarises the prevalence of net inward or outward remittances in core and dynasty households. The percentage of net receivers of remittances were significantly higher in each of the three survey years than was the percentage of net senders among core households (1993 $p<0.001$; 1998 $p<0.001$; 2004 $p=0.053$). The most significant differences were those between net senders and net receivers in 1993 and 1998, with around 74 percentage points difference between the two groups. Despite there being an insignificant difference between the percentage of net receivers in the 1993 (87.3%) and 1998 core households (87.0%; $p=0.470$), there seems to have been a significant post-apartheid decrease in the percentage of net receivers of 33.6 percentage points in 2004 (53.4%; $p<0.001$). The converse is true of net senders of remittances in core households. Again there was no significant difference between the percentage of net senders in the 1993 (12.7%) and 1998 (13%; $p=0.470$) core households, but the percentage of net senders of core households increased significantly in 2004 (46.6%; $p<0.001$). There was however no significant difference

in 2004 between the percentage of net senders and receivers in dynasty households as compared with core households (n=232; p=0.362).

Figure 5.4 indicates a significantly higher average value of net remittances in the apartheid era than in the post-apartheid era, which means that core households in the apartheid era received significantly higher average inward remittances. The average monthly value of net remittances for core households in 1993 was R548, which was significantly higher than both the average real value of net remittances in 1998 (R345; p=0.004) and 2004 (R35; p<0.001), respectively a R203 and a R513 monthly difference from the 1993 average value. There is no statistically significant difference between the average value of net remittances in the 2004 core households and the average value of net remittances in the 2004 dynasty households.

Figure 5.4: **The average, the median and the interquartile ranges of real monthly net remittances by core and dynasty households (1993–2004)**



Note: Interquartile ranges are reported in brackets. Differences between the 1993 core and the 1998 core households are statistically significant at the 1% level of significance (p=0.004). Differences between the 1993 core and the 2004 core households are statistically significant at the 1% level of significance (p<0.001). Differences between the 1998 core and the 2004 core households are statistically significant at the 1% level of significance (p<0.001). Differences between the 1993 and 1998 core households and the 2004 dynasties are statistically significant at the 1% level of significance (p<0.001). Differences between the 2004 core and the 2004 dynasty households are not statistically significant at the 1% level of significance (p<0.4905).

Similar results are seen in the median value of net remittances in the core and dynasty households. There was again a substantial post-apartheid decrease in the value of net remittances in core households, decreasing by R130 from R405 in 1993, to R275 in 1998 and again decreasing by R260 to only R15 in 2004. The difference in the median value of net

remittances between the 2004 core households (R15) and the 2004 dynasty households (R2) was minimal. Given the interquartile ranges within brackets, it is noticeable that before 2004, core households were mainly net receivers of remittances. The interquartile ranges for 2004 indicate that the 25th percentile was negative, signifying that many of the 2004 households, both cores and dynasties, were then net senders of remittances.

5.2 Remittance transitions

Figure 5.5 represents remittance transitions in core households over the period between 1993 and 2004. Figure 5.5 indicates that the majority of core households (61.4%) never sent any remittances, while 38.6% of core households sent remittances in any one of the three years under consideration (1993, 1998 and 2004).

Figure 5.5: **Transitions in outward remittances, by core households (1993–2004)**

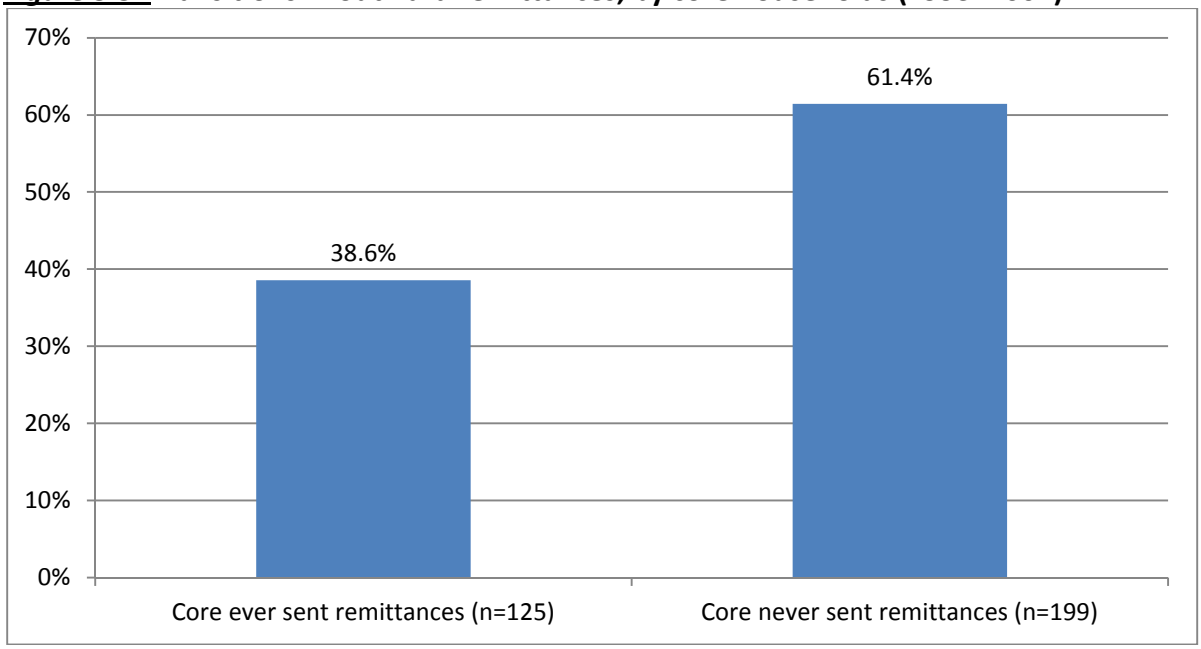
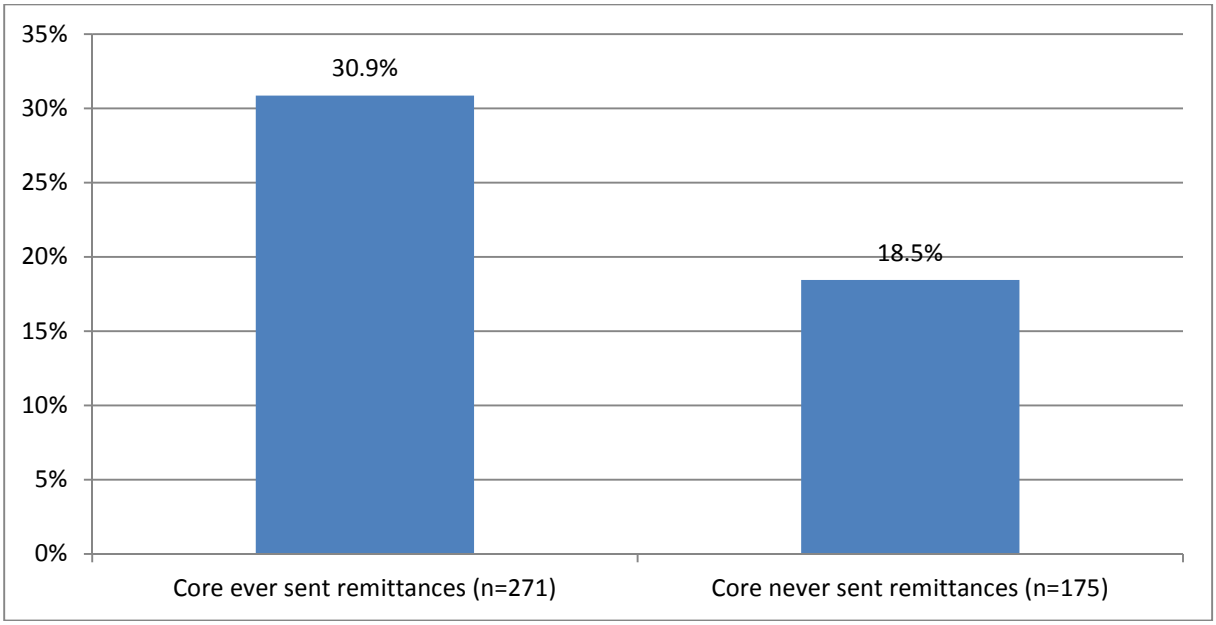


Figure 5.6 summarises dynasty remittance flows by remittance transitions in core households. The results suggest that past remittance behaviour of core households significantly influenced the flow of inward remittances to dynasty households. Dynasties linked to cores that had ever sent remittances in the past were significantly more likely to have received remittances than were dynasties linked to never-remitting cores. A total of 30.9% (54) of dynasty households linked to cores that had ever sent remittances in the past received remittances in 2004, this

being significantly higher (p=0.003) than the 18.5% (50) of dynasties linked to cores that had never remitted in the past.

Figure 5.6: **Prevalence of inward remittances of dynasty households (2004), by core outward remittance transitions**

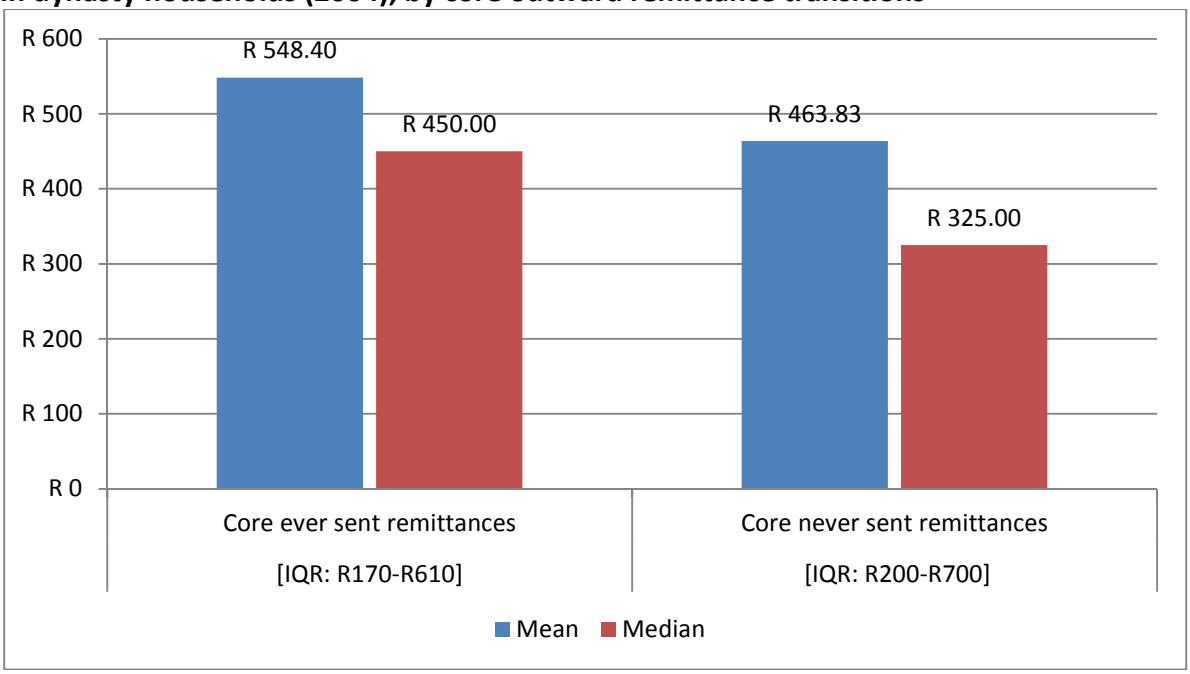


Note: Differences in remittance-receiving dynasties linked to cores that had never remitted are statistically significant at the 1% level of significance given the Fisher's exact: p=0.003 (1-sided Fisher's exact: p=0.002).

Comparison of dynasties linked to remitting core households also suggests higher average real monthly remittances (Figure 5.7). The average monthly value of remittances received by dynasty households linked to cores that had ever remitted is R548 per month. The average real value of monthly remittances received by dynasties linked to never-remitting cores was almost R85 per month lower, thus amounting to R463 per month. Although the average monthly value of remittances received by dynasties was lower for dynasties linked to never-remitting cores than for those linked to remitting cores, the difference is not statistically significant (p=0.298). Since the above differences are not statistically significant, it suggests that past remittances by core households do not significantly influence the average value of inward remittances received by dynasty households, though it does influence the prevalence of remittance inflows (Figure 5.6).

Similar results are once again obtained when the median values of inward remittances in dynasty households are compared across past remittances from core households. The median value of inward remittances for dynasties linked to ever-remitting cores is R450 per month, R125 (38.5%) higher than the R325 for dynasties linked to never-remitting cores.

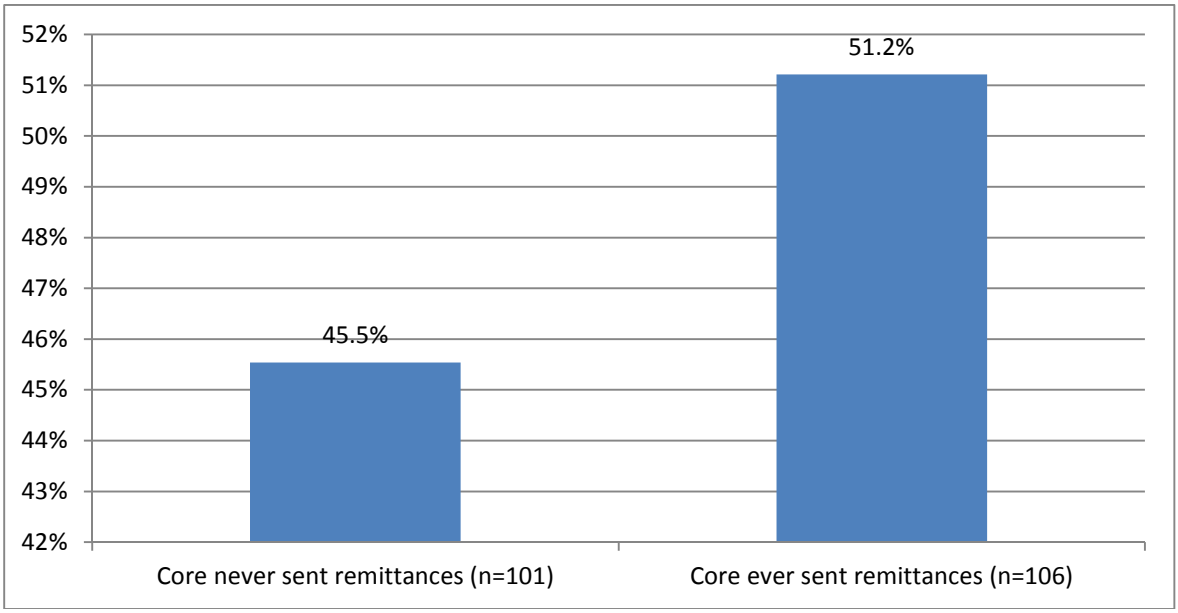
Figure 5.7: **The average, the median and the interquartile ranges of real inward remittances in dynasty households (2004), by core outward remittance transitions**



Note: Interquartile ranges are indicated in brackets. Difference in mean values are not statistically significant at the 10% level of significance (p=0.2981).

Given the outward remittance transitions in core households (Figure 5.8), there is no statistically significant difference in the percentage of net remittance receivers in dynasty households. A total of 45.5% of the dynasty households linked to core households that never sent remittances, were net-remittance receivers, compared with the 51.2% of dynasties linked to cores that had ever sent remittances (p=0.220).

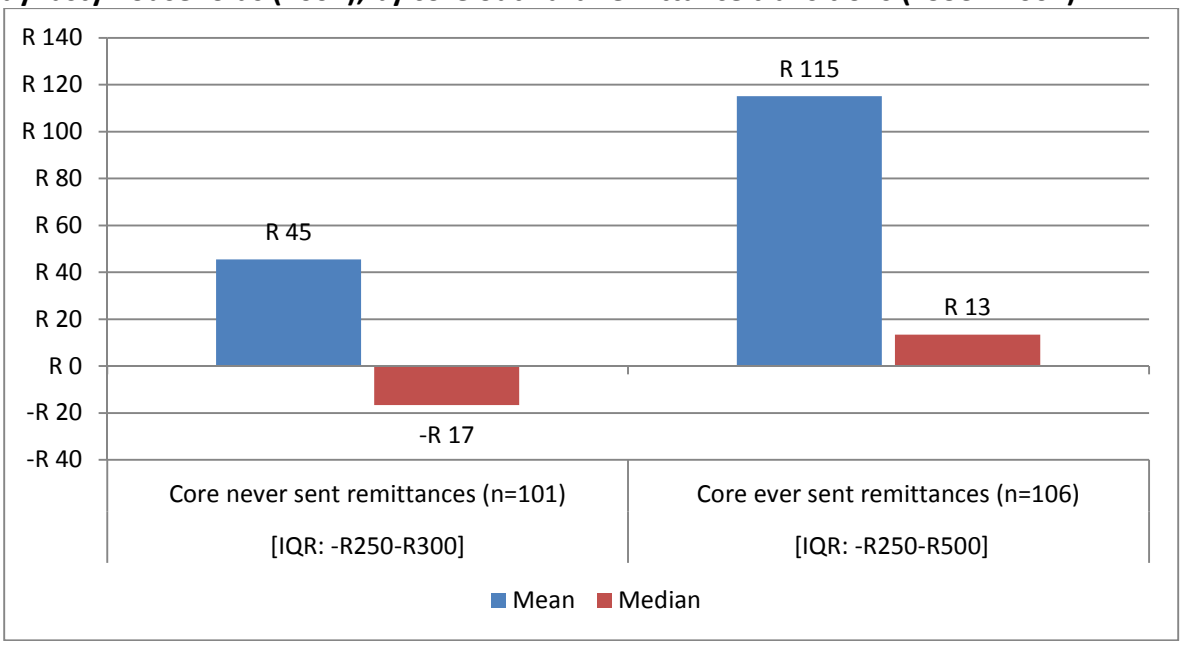
Figure 5.8: **Prevalence of net-remittance receivers in dynasty households (2004), by core outward remittance transitions**



Note: Difference is not statistically significant at the 10% level of significance (p=0.220).

Figure 5.9 indicates the average, the median and the interquartile ranges [IQR] of real net remittances in dynasty households, by core outward remittance transitions. Although both the average and the median values of net remittances in dynasties linked to cores that had never-sent remittances are, as expected, lower than those for dynasties linked to cores that ever sent remittances in the three years under consideration, the differences are not statistically significant (p=0.495). The average value of real net remittances for dynasties from a never-sending core background was R45 (–R17 for median), as against the R115 (R13 for median) for dynasties linked to ever-remitting core households.

Figure 5.9: **The average, the median and the interquartile ranges of real net remittances in dynasty households (2004), by core outward remittance transitions (1993–-2004)**



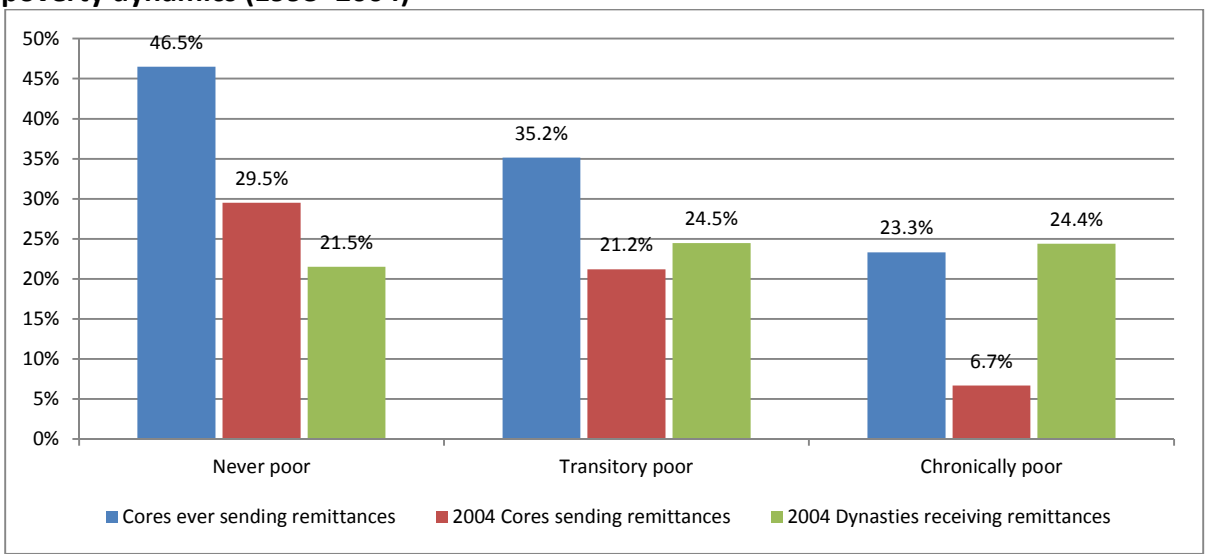
Note: Interquartile ranges are indicated in brackets. Differences are not statistically significant at the 10% level of significance (p=0.4946).

5.3 Remittances and poverty

One would expect the probability that a core household will send remittances to decrease as the household becomes poorer. This expectation is borne out in Figure 5.10, which shows a significant decrease in the probability that a core household will ever send remittances as they become poorer (p=0.029). A total of 46.5% of cores that had never been poor, ever sent remittances, while 41.0% of cores that had moved out of poverty and only 26.2% of the core households that had moved into poverty ever sent remittances. Among the transitory poor cores, an average of 35.2% ever sent remittances. Only 23.3% of the chronically poor cores ever sent remittances.

A similar trend is shown for outward remittances by the 2004 core households. A total of 29.5% of the 2004 cores linked to a never-poor background, sent remittances in 2004, while 21.2% of the transitory poor cores and only 6.7% of the chronically poor cores sent remittances in 2004 (p=0.017).

Figure 5.10: **Outward remittances by cores and inward remittances in dynasties, by core poverty dynamics (1993–2004)**

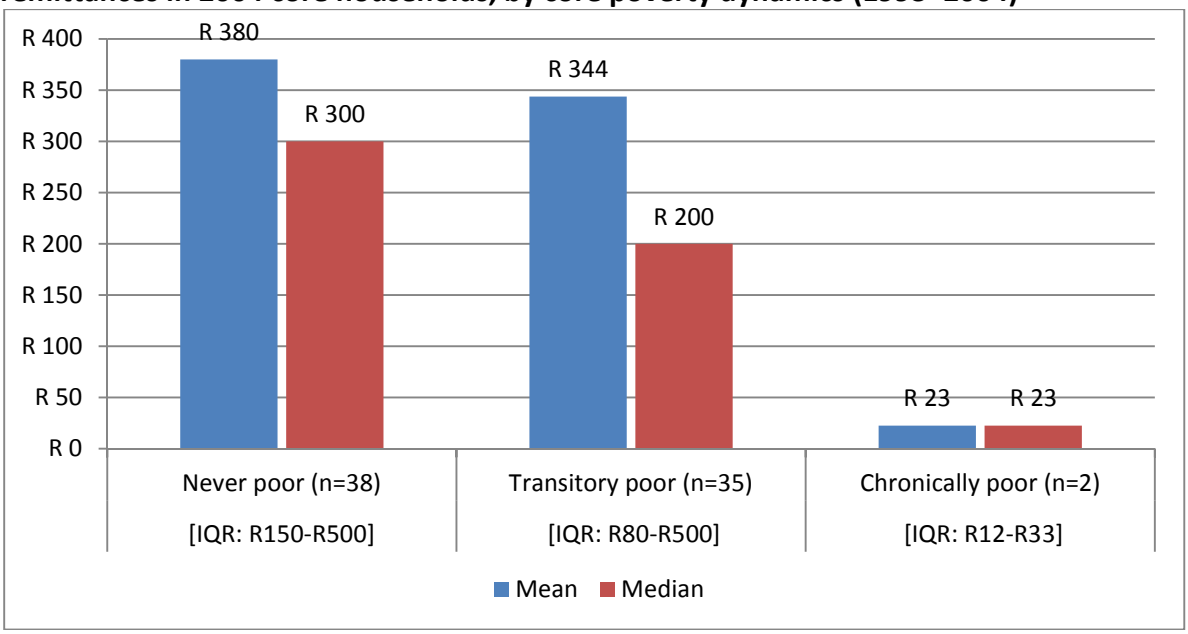


Note: Differences in cores ever sending outward remittances over the different poverty transitions are statistically significant at the 5% level of significance (p=0.029), while differences in 2004 cores sending outward remittances over the poverty transitions are statistically significant at the 5% level of significance (p=0.017). Inward remittances by dynasty households over the different poverty transitions are not statistically significant at the 10% level of significance (p=0.758). The differences between dynasties linked to cores moving out of poverty and cores moving into poverty are statistically significant at the 5% level of significance (p=0.031).

Comparison of inward remittances received by dynasty households reveals that only 21.5% of dynasty households linked to a non-poor background received inward remittances in 2004. Dynasties linked to transitory poor cores were the most likely to receive remittances. A total of 24.5% of dynasties from a transitory poor background received inward remittances in 2004. Of the dynasty households linked to a transitory poor background, 29.6% of dynasties from a background where the core moved out of poverty received remittances, and 17.4% of dynasty households linked to a transitory poor core household that moved into poverty received remittances in 2004. The percentage of dynasties from a transitory poor background receiving remittances (24.5%) was only marginally higher than the percentage of dynasties from a chronically poor background (24.4%).

Comparing average and median values of real monthly outward remittances by 2004 core households by their poverty background (Figure 5.11), we find that the expected hypothesis is supported, namely that chronically poor households sent smaller remittances. The highest values of average and median outward remittances were, as expected, recorded for the 2004 core households from a never-poor background, therefore suggesting they were better off and therefore able to send remittances to other family members or friends. Average monthly outward remittances by the 2004 core households linked to a never-poor background was R380 per month and the median was R300 per month. The 2004 core households linked to a transitory poor background sent, on average, R344 per month with a median remittance value of R200 per month. (Since only 35 cores were from a transitory poor background, they were not divided into transitory poor households moving out of poverty and those moving into poverty). The lowest average and median values of outward remittances by the 2004 core households were recorded for cores linked to a chronically poor background, with both an average and a median value of R23 per month, although only two 2004 core households that sent outward remittances in 2004 were from a chronically poor background. This small sample size is the reason why the differences in outward remittances are not statistically significant at the 10% level of significance (p=0.370).

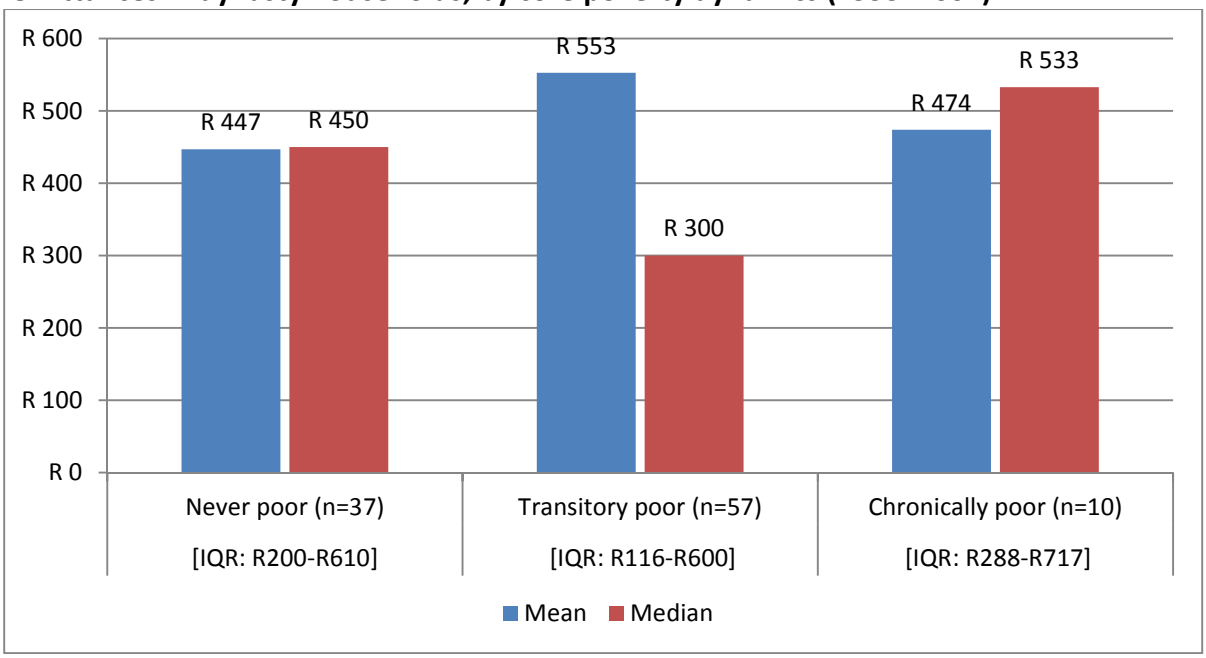
Figure 5.11: **The average, the median and the interquartile ranges of real value of outward remittances in 2004 core households, by core poverty dynamics (1993–2004)**



Note: Interquartile ranges are indicated in brackets. Differences over the different poverty transitions are not statistically significant at the 10% level of significance (p=0.3699).

Figure 5.12 summarises the average, the median and the interquartile values of remittances received by dynasty households according to their linked core poverty dynamics. The lowest average value of monthly remittances received by dynasty households were reported for dynasties linked to never-poor backgrounds (R447). Dynasties from cores were either transitory poor or chronically poor and received, on average, R553 and R474 per month respectively (p=0.891). Dynasties from transitory poor backgrounds can be divided into those linked to cores moving out of poverty and those moving into poverty, which, on average, received R587 and R474 per month in remittances respectively. These amounts contributed on average 24.9% to monthly income for dynasties linked to never-poor backgrounds, 20.7% for dynasties from transitory poor cores and 27.9% to dynasty household income for dynasties linked to chronically poor core households. Comparison of real median values of inward remittances in dynasty households reveals that the highest median value was recorded for dynasties from chronically poor backgrounds, namely R533 per month. This was followed by dynasties linked to never-poor backgrounds at R450 per month. The lowest median value of inward remittances was for dynasties from transitory poor backgrounds, this amounting to R300 per month.

Figure 5.12: **The average, the median and the interquartile ranges of real value of inward remittances in dynasty households, by core poverty dynamics (1993–2004)**



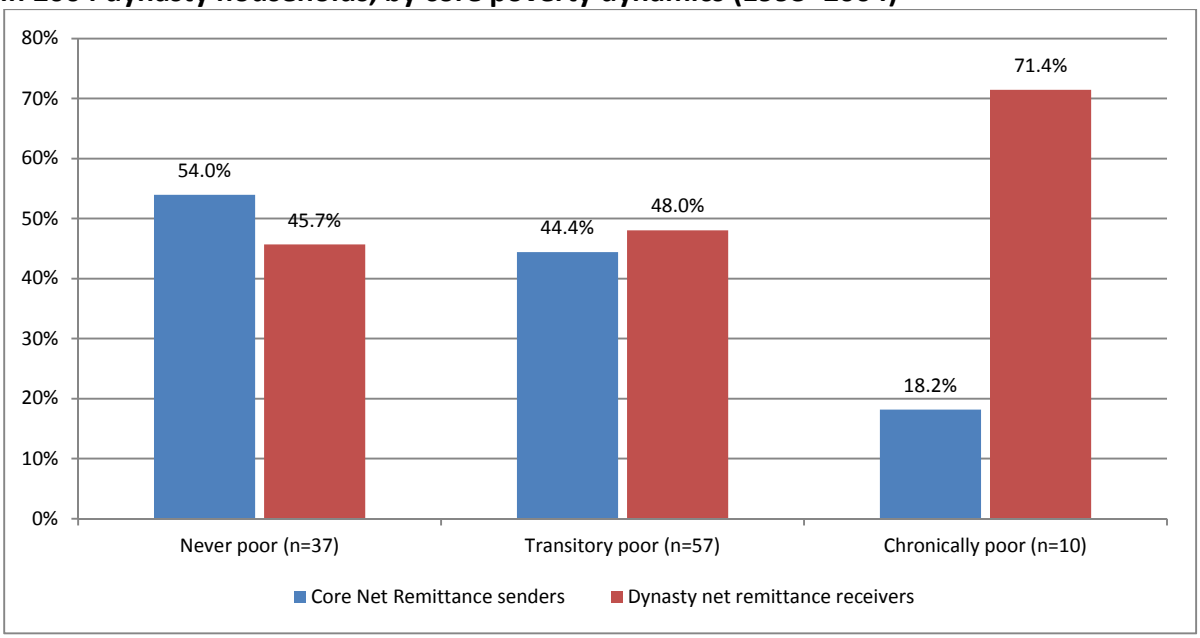
Note: Interquartile ranges are indicated in brackets. Differences in inward remittances over the different poverty transitions are not statistically significant at the 10% level of significance (p=0.820). For specific levels of significance, refer to text below.

Figure 5.13 indicates the percentage of net remittance senders in 2004 core households and also the percentage of net remittance receivers in the 2004 dynasty households, both by poverty dynamics in core households. As expected, the percentage of net remittance senders in core households decreased as core households became poorer. A total of 54% of the never-poor 2004 core households were net remittance senders, while 44.4% were linked to transitory poor backgrounds (49.1% for cores moving out of poverty and 26.7% for cores moving into poverty). Only 18.2% of the 2004 core households linked to chronically poor backgrounds were net remittance senders. This indicates that, as expected, cores linked to poorer households tended to be remittance receivers rather than remittance senders ($p=0.080$).

Although the differences in net receipts of remittances by dynasties are not statistically significant ($p=0.210$), the same (as above) is also true of dynasties. A total of 45.7% of dynasties linked to never-poor backgrounds were net remittance receivers, in comparison with 48% of dynasties linked to transitory poor backgrounds. There was a significant difference between net remittance receiver dynasties linked to cores moving out of poverty (56.3%) and dynasties linked to cores moving into poverty (34.2%) ($p=0.051$). A total of 71.4% of dynasties linked to chronically poor core households were net remittance receivers, which means that only 28.6% were net remittance senders if they came from chronically poor backgrounds. The results therefore indicate that both the 2004 core and the dynasty households tended to be net remittance receivers if they were linked to chronically poor backgrounds and remittance senders if they were linked to never poor backgrounds.

Scrutiny of the average, the median and the interquartile range [IQR] of net remittances in the 2004 core households by their linked core poverty dynamics confirms the conclusions of Figure 5.13 below: cores linked to poorer households tend to be net remittance receivers rather than net remittance senders. Cores linked to never-poor backgrounds had an average net remittance value of R11 and a negative median value of –R17. The interquartile range (shown in brackets) also indicates that cores linked to never-poor backgrounds tend rather to send remittances than to receive remittances, while they were net receivers if they came from chronically poor backgrounds.

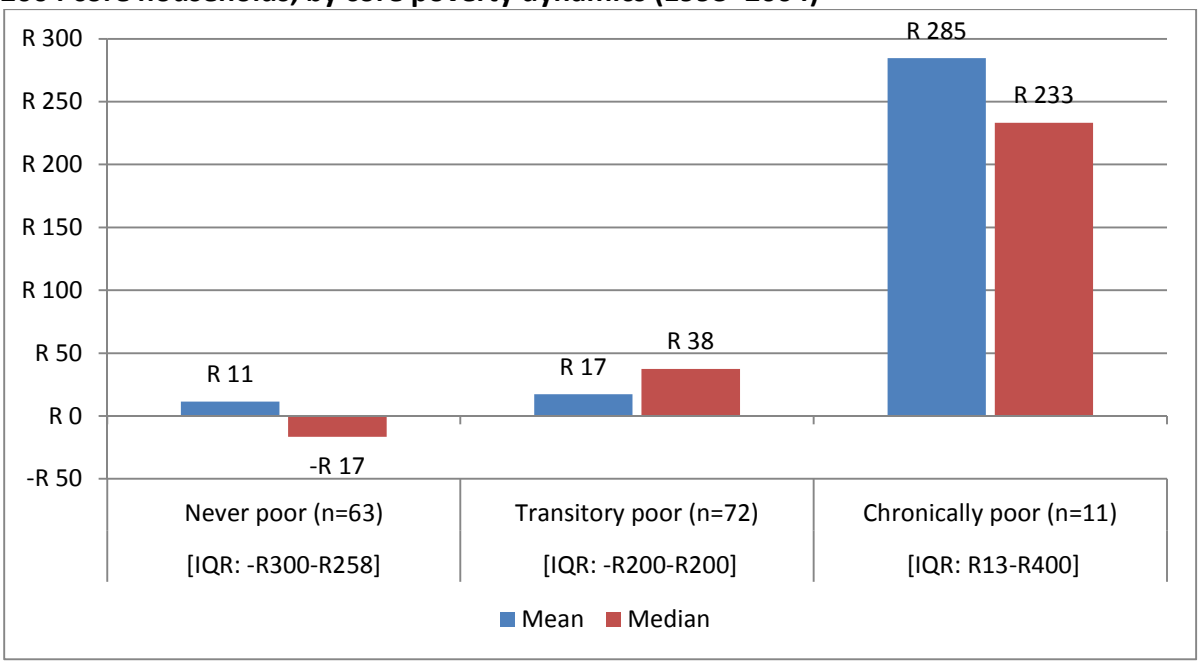
Figure 5.13: **Net remittance senders in 2004 core households and net remittance receivers in 2004 dynasty households, by core poverty dynamics (1993–2004)**



Note: Differences in core net remittance senders over the different poverty transitions are statistically significant at the 10% level of significance (p=0.080). Differences in dynasty net remittance receivers over the different poverty transitions are not statistically significant at the 10% level of significance (p=0.210).

Cores linked to transitory poor or chronically poor backgrounds had both positive average and median net remittance values, this again confirming that poorer households are remittance receivers rather than remittance senders. The average value of net remittances for the 2004 core households linked to transitory poor backgrounds was R17 (median = R38), and R285 (median = R233) for the 2004 cores linked to chronically poor backgrounds (p=0.291). There is a significant difference between the average value of net remittances of cores from transitory poor backgrounds moving out of poverty and those of cores from transitory poor backgrounds moving into poverty (p<0.001). The average net remittance for cores moving out of poverty was –R28 (median = R2) – significantly lower than the average value of net remittances of R189 (median = R120) for cores moving into poverty, which reflects the net inflow of remittances in poorer households.

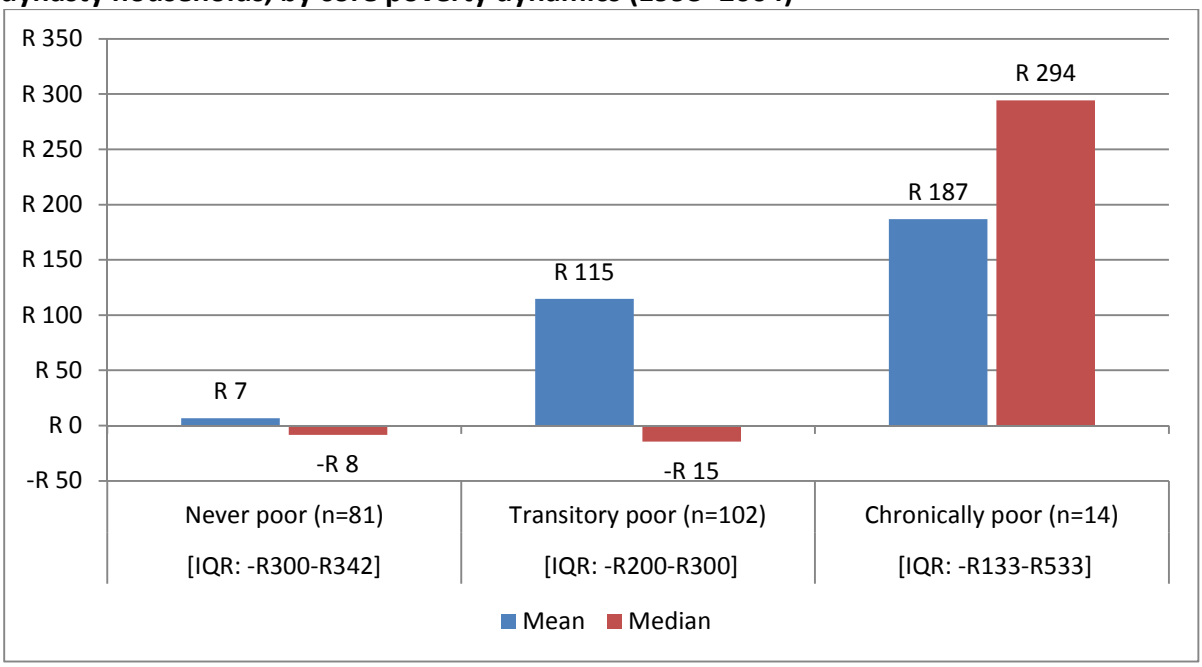
Figure 5.14: **The average, the median and the interquartile ranges of net remittances in 2004 core households, by core poverty dynamics (1993–2004)**



Note: Interquartile ranges are indicated in brackets. Differences in average net remittances in core households over the different poverty transitions are statistically insignificant at the 10% level of significance (p=0.291).

Figure 5.15 depicts similar results for dynasty households to those in Figure 5.13 and Figure 5.14 above for core households. Dynasties linked to chronically poor backgrounds tend to be net remittance receivers, while dynasties linked to non-poor backgrounds tend to be net senders. The average value of net remittances for dynasties linked to never-poor backgrounds was R7 (median = –R8), R115 (median= –R15) for dynasties linked to transitory poor backgrounds and R187 (median = R294) for dynasties from chronically poor backgrounds (p=0.520). The only unexpected difference was the one between dynasties from transitory poor cores moving out of poverty and dynasties from transitory poor cores moving into poverty. Although the differences were not statistically significant (p=0.311), the real value of net remittances from dynasties linked to cores moving out of poverty was R199 (median=R71) and –R28 (median = –R142) for dynasties linked to cores moving into poverty.

Figure 5.15: **The average, the median and the interquartile ranges of net remittances in dynasty households, by core poverty dynamics (1993–2004)**

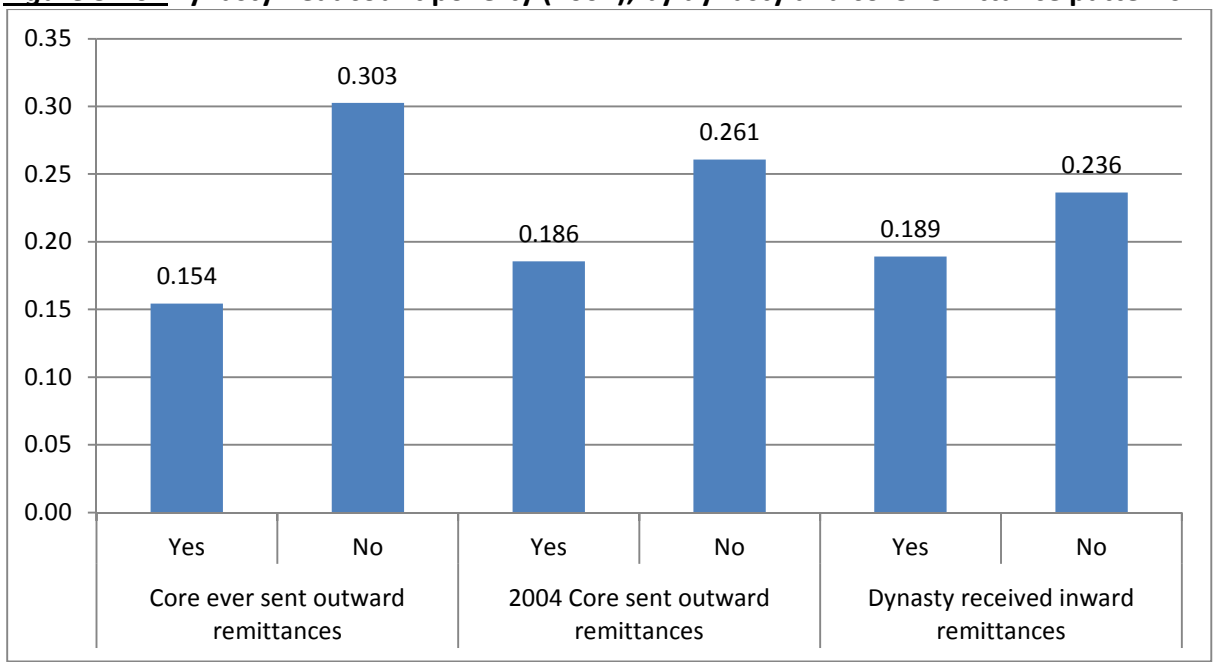


Note: Interquartile ranges are indicated in brackets. Differences in average net remittances in dynasty households over the different poverty transitions are statistically insignificant at the 10% level of significance (p=0.5197).

5.4 Headcount poverty and the depth and severity of poverty in dynasty households

Figures 5.16, 5.17 and 5.18 summarise the levels of poverty (headcount, depth and severity) in dynasty households by remittance flows in dynasty and core households. The probability of a dynasty household being poor is significantly reduced if it is linked to a remittance-sending core household. At 15.4% (27), the headcount poverty for dynasties linked to cores that had ever sent remittances is significantly lower than the headcount poverty for dynasties from never-sending cores 30.3% (82) ($p<0.001$). Similar results are shown for dynasties linked to the 2004 cores that sent remittances. The percentage of poor dynasty households linked to the 2004 core households that sent remittances (18.6%) is also significantly lower than the 26.1% of dynasties that fell below the poverty line because they were linked to a 2004 core household that did not send remittances ($p=0.080$). It therefore appears that outward remittances from core households significantly reduce headcount poverty in dynasty households. Figure 5.16 indicates that only 18.9% (24) of dynasties that received remittances fell below the poverty line compared with the 23.6% (91) that did not receive any inward remittances. These differences were however not statistically significant ($p=0.254$).

Figure 5.16: **Dynasty headcount poverty (2004), by dynasty and core remittance patterns**

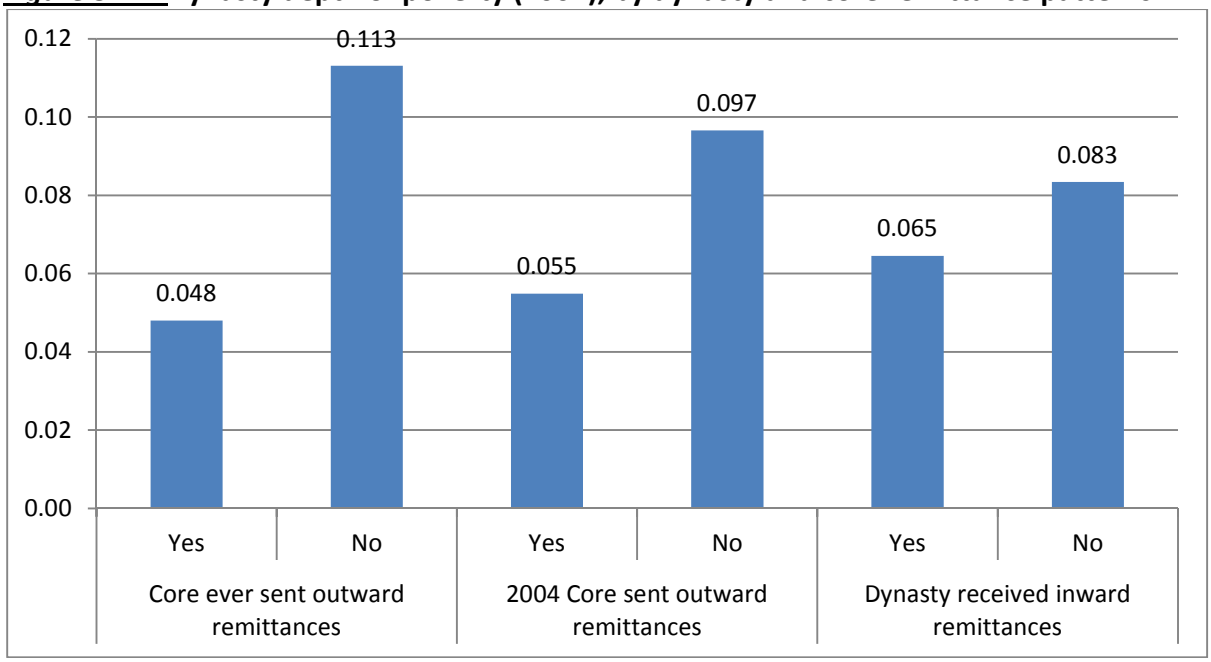


Note: Differences in dynasty headcount poverty by cores ever sending outward remittances is statistically significant at the 1% level of significance (p<0.001). Differences in dynasty headcount poverty by 2004 cores sending outward remittances are statistically significant at the 10% level of significance (p=0.080). Differences in dynasty headcount poverty by dynasty inward remittances are statistically insignificant at the 10% level of significance (p=0.254).

Figure 5.17, as expected, shows similar results for the depth of poverty than for the headcount poverty in Figure 5.16 above. Not only do remittances from cores significantly reduce the prevalence of headcount poverty in dynasty households, but such remittances also significantly influence the depth of poverty in dynasty households. The depth of poverty experienced by dynasty households linked to cores that had ever sent outward remittances is significantly lower at 4.8%, while dynasties linked to core households that had never sent outward remittances, on average lie at 11.3% below the monthly poverty line (p<0.001). Dynasties linked to the 2004 cores that sent remittances lie at only 5.5% below the household poverty line. By comparison, dynasties linked to non-remitting 2004 cores lie, on average, 9.7% below the poverty line (p=0.025).

Not only do dynasty households that did not receive remittances experience a greater incidence of poverty, but they also lie farther below the average poverty line than do remittance-receiving dynasties. On average, non-remittance-receiving dynasties lie 8.3% below the poverty line compared with dynasties receiving inward remittances, that, on average, lie only 6.5% below the poverty line. This difference is however not statistically significant at the 10% level of significance (p=0.111).

Figure 5.17: **Dynasty depth of poverty (2004), by dynasty and core remittance patterns**

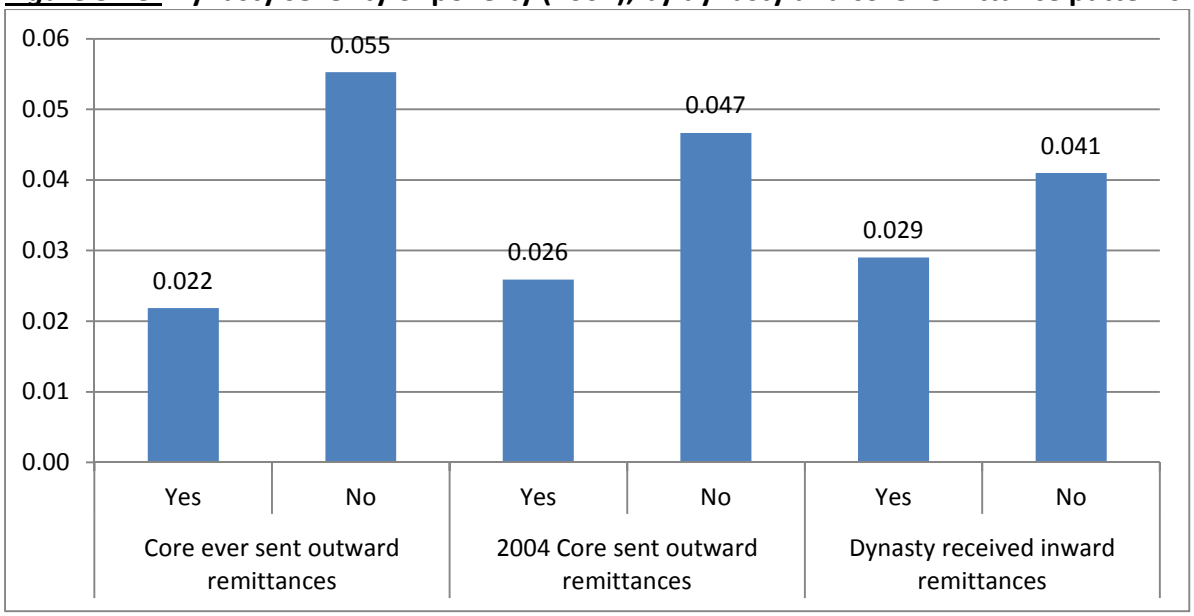


Note: Differences in the depth of dynasty poverty by cores ever sending outward remittances are statistically significant at the 1% level of significance (p<0.001). Differences in the depth of dynasty poverty by the 2004 cores sending outward remittances are statistically significant at the 5% level of significance (p=0.025). Differences in the depth of dynasty poverty by dynasties receiving inward remittances are statistically insignificant at the 10% level of significance (p=0.111).

Figure 5.18 reflects results similar to those in Figures 5.16 and 5.17 above. The severity of poverty in dynasties linked to ever-remitting cores is significantly lower at 0.022 than that for dynasties from never-remitting cores at 0.055 (p=0.013). Poverty in dynasties from the 2004 cores that sent remittances (0.029) is also significantly lower than in dynasties linked to the 2004 remitting cores (0.022) (p=0.048). Although the difference between remittance-receiving dynasties and dynasties not receiving remittances is not statistically significant (p=0.181), the poverty experienced by dynasties not receiving remittances (0.041) is also more severe than that of dynasty households receiving remittances (0.029).

The results reflected in Figures 5.16, 5.17 and 5.18 above suggest that remittances from core households have a significant impact on poverty in dynasty households, irrespective of the poverty measure. This emphasises the importance of remittance flows as both a risk diversification and poverty-alleviation method.

Figure 5.18: **Dynasty severity of poverty (2004), by dynasty and core remittance patterns**



Note: Differences in the severity of dynasty poverty by cores ever sending outward remittances are statistically significant at the 5% level of significance (p=0.013). Differences in the severity of dynasty poverty by 2004 cores sending outward remittances are statistically significant at the 5% level of significance (p=0.048). Differences in the severity of dynasty poverty by dynasties receiving inward remittances are statistically insignificant at the 10% level of significance (p=0.181).

Table 5.1 compares the headcount (FGT_0,), depth (FGT_1) and severity (FGT_2) of poverty in dynasty households with and without the real value of monthly remittances received by dynasty households. The headcount poverty for dynasties when the real value of monthly remittances is included in household income, is significantly lower at 0.225 than is the headcount poverty of 0.262 for dynasties when the real value of monthly remittances are excluded from household income ($p<0.001$). The depth of poverty is also significantly lower for dynasties when the real value of remittances is included in household income (0.079) than for dynasties when remittance income is excluded (0.118, $p=0.038$). The severity of poverty experienced by dynasties, when remittance income is excluded (0.238), is approximately five times higher than the severity of poverty in dynasties when remittance income is included as part of household income. The difference is however not statistically significant ($p=0.135$). Table 5.1 thus emphasises the important role remittances play towards reducing poverty in dynasty households.

Table 5.1: **Headcount poverty and the depth and severity of poverty**

	Including remittances	Excluding remittances	Percentage difference
FGT_0	0.225	0.262	16.518
FGT_1	0.079	0.118	50.405
FGT_2	0.038	0.238	521.776

Note: The difference in FGT_0 is statistically significant at the 1% level of significance ($p<0.001$). The difference in FGT_1 is statistically significant at the 5% level of significance ($p=0.038$). The difference in FGT_2 is not statistically significant at the 10% level of significance ($p=0.135$).

5.5 Regression analysis

5.5.1 2004 core remittances by core poverty dynamics

Probit and ordinary least squares linear regression models were used to determine the probability that a 2004 core household would remit, and also to explain how poverty dynamics would influence the value of remittances in core households. This moreover can be described as a two-step selection process, i.e. first making a decision to remit and secondly deciding how much to remit. The Heckman selection model yielded a Mills lambda value of 1696.944 (p=0,847) and Wald chi2 of 0.18 (p=0.9993). The lack of significance of the overall model means that it is not possible to determine the presence of selection, hence the separate probit and linear regression models (refer to Appendix 5 for results). All the models were also adjusted for heteroscedasticity by using robust standard errors. Table 5.2 also indicates that both of these models were overall statistically significant in explaining the probability that a 2004 core household would send remittances and classified 76.9% of the core households correctly as remittance senders. The Pseudo R2 shows that Model 1 explains approximately 9.9%, and Model 2 approximately 6.3% of the prevalence of outward remittances.

Table 5.2 summarises, by poverty dynamics in core households, the probit regression results for the 2004 core households that sent remittances. Model 1 subdivides the transitory poor core households into cores moving into poverty and cores moving out of poverty, while Model 2 combines these two in a single transitory poor category. Model 1 and Model 2 both indicate that the dependency ratio of the 2004 core household had a statistically significant influence on the probability that the core household would send remittances. The probability of their sending remittances declined by 16.9% (Model 1) and 16.6% (Model 2) respectively for a percentage-point increase in the dependency ratio of the core household. Model 1 also suggests that cores from transitory poor backgrounds that had moved into poverty, as expected, significantly decreased the probability of their sending remittances by 17.7% compared with cores from non-poor backgrounds. This may be explained by the financial constraints of moving into poverty, which thus decreased the probability of their sending remittances. The same is evident for chronically poor cores. The probability that a 2004 core household from a chronically poor background would send remittances decreased by around

15% (Model 1 and Model 2) in comparison with cores from non-poor backgrounds. This suggests that non-poor cores, as expected, would be more likely to send remittances (including to their dynasties) than either the transitory or the chronically poor core households.

Table 5.2: **Probit regression results: outward remittances by 2004 core households**

2004 cores sending outward remittances – probit	2004 cores sending remittances (0/1)	
	Model 1 (dF/dx)	**Model 2 (dF/dx)**
2004 core household size	-0.0108	-0.0166**
2004 Core dependency ratio	-0.1695*	-0.1664*
Core transitory out of poverty vs non-poor	0.0436	-0.0263
Core transitory into poverty vs non-poor	-0.1772***	
Core chronically poor vs non-poor	-0.1539*	-0.1492*
Sample size (n)	324	324
Wald chi2	24.72	18.77
Prob> Chi2	0.0002	0.0009
Pseudo R2	0.0992	0.0630
% correctly classified	76.85%	76.85%

Table 5.3 reflects the results for the linear regression models that investigate the effect of poverty dynamics in the core households on the value of outward remittances by the 2004 core households. Both models are overall statistically significant in explaining the value of remittances sent by the remitting 2004 core households ($p<0.001$). As in Table 5.2 above, Model 1 subdivides the transitory poor core households into cores moving into poverty and cores moving out of poverty, while Model 2 combines these transitory poor cores into a single category. Because of the greater financial burden in larger households and in households with higher dependency ratios, it is expected that an increase in either the size of the household or the dependency ratio will see the value of remittance sent by the household decline. This is confirmed in Table 5.3 below, although the effects on the value of remittances were not statistically significant at the 10% level of significance.

A chronically poor background not only decreased the probability that the core household would remit (Table 5.2), but Table 5.3 indicates that it moreover also decreased the value of the remittances sent by the 2004 core households in comparison with those from a non-poor background. On average, a 2004 chronically poor core household would remit R365 (R361 for

Model 2) less per month than a non-poor core household. Both models, on average, explain about 9% only of the variation in the real value of monthly outward remittances by the 2004 core households. The low explanatory powers of the regression models can be attributed to the relatively small number of explanatory variables.

Table 5.3: **Linear regression results: outward remittance value of the 2004 core households**

2004 cores sending outward remittances – VALUE	Rand value	
	Model 1 (dF/dx)	**Model 2 (dF/dx)**
Dynasty household size	-6.41	-7.78
Dynasty dependency ratio	-229.18	-241.49
Core transitory out of poverty vs non-poor	5.49	-5.01
Core transitory into poverty vs non-poor	-110.93	
Core chronically poor vs non-poor	-365.91***	-361.99***
Sample size (n)	75	75
F	6.31	6.74
Prob> F	0.0001	0.0001
R-squared	0.0927	0.0878

Note: Analysis include non-zero values only.

Table 5.4 reports the probit regression results for the 2004 core households that were net senders of remittances (=1), and therefore determines whether the household was a net sender (=1) or net receiver (=0) of remittances. Both models were statistically significant in explaining the probability that a 2004 core household would be a net sender of remittances ($p<0.001$). Models 1 and 2 correctly classify 65.8% and 66.4% respectively of the 2004 core households as net senders of remittances, while these models both explain about 11.9% of the variation in the dependent variable.

As expected, Model 1 and Model 2 indicate that if the household size of the 2004 core household were to increase with an additional household member, the probability that the core household would be a net sender of remittances would decrease by about 3% (3.05% for Model 1 and 3.22% for Model 2). As indicated in Table 5.2 and Table 5.3 above, this might have been due to the additional financial burden that additional household members placed on the financial responsibilities of the household. A similar conclusion is drawn for the household dependency ratio. As indicated below, if the dependency ratio of a 2004 core household were to increase by one percentage point, the probability that the core household would be a net sender of remittances would decrease by around 37% (36.7% in Model 1, and

37.0% in Model 2). As the number of dependants (and thus the dependency ratio) in the household were to increase, the household would be rather a net receiver of remittances if the resultant financial burden of the dependants on the household were taken into account.

Poverty dynamics and past poverty are expected to decrease the probability that a household is a net sender of remittances. Table 5.4 indicates that a chronically poor/non-poor background would decrease/increase the probability that the core household would be a net sender of remittances by around 20% (20.6% for Model 1, and 20.0% for Model 2) compared with the situation in respect of a 2004 core household from a non-poor background. These differences are however not statistically significant (p=0.236 for Model 1 and p=0.252 for Model 2). Transitory poverty did not significantly influence the probability that a core household in 2004 would be a net sender of remittances.

Although poverty dynamics (especially chronic poverty) influenced both the probability that a 2004 core household would send remittances to a significant extent (Table 5.2) and also the value of monthly remittances by the 2004 core household (Table 5.3), poverty dynamics did not have a statistically significant influence on the probability that the 2004 core household would be a net sender of remittances.

Table 5.4: **Probit regression results for net remittance senders in the 2004 core households**

2004 cores net remittance senders – probit	2004 core net remittance senders (0/1)	
	Model 1 (dF/dx)	**Model 2 (dF/dx)**
Dynasty household size	-0.0305**	-0.0322**
Dynasty dependency ratio	-0.3668***	-0.3700***
Core transitory out of poverty vs non-poor	0.0285	0.0189
Core transitory into poverty vs non-poor	0.0403	
Core chronically poor vs non-poor	-0.2062	-0.1992
Sample size (n)	146	146
Wald chi2	22.35	22.37
Prob> Chi2	0.0004	0.0002
Pseudo R2	0.1197	0.1188
% correctly classified	65.75%	66.44%

Note: Sample includes both the senders and receivers of remittances.

Table 5.5 investigates the effect that poverty dynamics in core households may have had on the value of monthly net remittances in the 2004 core households. Again, both models significantly explain the variation in the value of net remittances in the 2004 core households, given the F-values and their related probabilities (p<0.001). Around 9% (9.1% for Model 1, and 9.1% for Model 2) of the variation in the value of net remittances in the 2004 core households is explained by these regression models.

Table 5.5: **Linear regression results for value of real net remittances sent by the 2004 core households who sent remittances**

2004 cores' net remittances – VALUE	Rand value	
	Model 1 (dF/dx)	**Model 2 (dF/dx)**
Dynasty household size	35.14***	36.04***
Dynasty dependency ratio	111.63*	111.71*
Core transitory out of poverty vs non-poor	-100.38	-96.50
Core transitory into poverty vs non-poor	-71.62	
Core chronically poor vs non-poor	-84.40	-80.00
Sample size (n)	146	146
F	4.49	5.40
Prob> F	< 0.001	<0.001
R-squared	0.0912	0.0910

Models 1 and 2 show that both the size of the 2004 core household and the dependency ratio in the household significantly influence the value of net remittances. If the size of the 2004 core household were to increase with an additional household member, Model 1 predicts that the net remittances would increase by R35 per month, while Model 2 predicts an increase in monthly net remittances of R36 (P<0.01). Both models therefore, as expected, suggest that additional household members would lead to a net inflow of remittances rather than a net sending of outward remittances. An increase in the dependency ratio of a 2004 core household is also associated with an increase in the net value of remittances. Model 1 shows an increase of around R11.63 and Model 2 shows an increase of R11.71 in net remittances if the dependency ratio increases by one percentage point. It was expected that poverty would also be associated with an increase in net remittances (either by decreasing outward remittances or by increasing the inflow of remittances), this implying a positive relationship between poverty and the real value of monthly net remittances. Unexpectedly, Models 1 and 2 display a negative relationship, suggesting that in transitory poor and chronically poor core

households the real value of net remittances was lower than that for cores from non-poor backgrounds. However, these differences are not statistically significant.

5.5.2 Dynasty remittances by core remittance behaviour

Table 5.6 focuses on the extent to which the probability that a dynasty household would receive remittances is a function of outward remittances in core households. Again, the two-step Heckman selection model did not fit the data (refer to Appendix 5 for results). Subsequently, probit and linear regression models are estimated. All the regression models use robust standard errors to adjust for heteroscedasticity. Models are also adjusted for clustering of multiple dynasty split-offs in the same cores. In terms of the overall significance of the regression models (given the chi-square values and their associated p-values), Table 5.6 shows only Model 1 and Model 5 to be statistically significant in explaining the probability that a dynasty household would have received remittances. Model 1 correctly predicts 76.7% of the dynasty households to have been remittance receivers, while Model 2 predicts 76.1% of the dynasty households correctly to have been remittance receivers.

Models 1 and 5 indicate that the prevalence of outward remittances from core households impacted significantly on the probability that their split-off dynasty households would receive remittances. Model 1 shows that outward remittances by a 2004 core household increased the probability that a dynasty household would receive remittances by 16.3%. Model 5, on the other hand, investigates the effect that remittance transitions in core households may have on the probability that their linked dynasty household would receive remittances. Model 5 suggests that any remittance sending (past or present) by a core household significantly increases the probability by 13.3% that the dynasty household would have received remittances in 2004.

Table 5.6: **Probit regression results for remittance-receiving dynasty households, by remittance behaviour in core households**

2004 Dynasties receiving inward remittances – probit Dum_Rem_Received_04	Model 1 (dF/dx)	Model 2 (dF/dx)	Model 3 (dF/dx)	Model 4 (dF/dx)	Model 5 (dF/dx)
Dynasty household size	0.0050	0.0276*	0.0117	0.0112	0.0066
Dynasty dependency ratio	-0.0679	-0.2658	-0.1002	-0.0896	-0.0612
2004 Cores sending remittances -dummy	0.1632***				
Value of 2004 cores outward remittances		-0.0001			
2004 Core net remittance sender - dummy			01039		
2004 Core net remittance value				0.000Ee-6	
Core never/ever sent dummy (1993-2004)					0.1325***
Obs	446	97	196	196	465
Wald chi2	11.30	3.45	3.43	1.12	11.42
Prob> Chi2	0.0102	0.3275	0.3302	0.7732	0.0097
Pseudo R2	0.0236	0.0315	0.0156	0.0053	0.0227
% correctly classified	76.68%	70.10%	69.90%	69.90%	76.13%

Table 5.6 demonstrates the probability that a dynasty household would receive remittances depended on remittance behaviour in core households. Table 5.7 looks at the influence these remittance behaviours in core households could have had on the real value of remittances received by the dynasty households. All the models, except Model 3 and Model 4, are significant in overall terms at the 1% level of significance. Model 4 is statistically significant only at the 10% level of significance (p=0.067), while Model 3 is not statistically significant at the 10% level of significance (p=0.187). On average, the regression models each only explain about 3 per cent of the variation in monthly inward remittances, while Model 2 explains approximately 21.6% of the variation in monthly remittances received by dynasty households.

It was expected that both the size of the dynasty household and its dependency ratios would impact positively on the value of inward remittances to help address the greater financial burden in larger households and in households with relatively more dependants. Only Model 2 suggests that an increase in the size of the household by an additional household member had a positive and significant impact (R27 per month) on the value of inward remittances. Although all five models indicate that an increase in the dependency ratio by one percentage point, as expected, increased the value of inward remittances received by dynasty households, none of these associations were statistically significant at the 10% level of significance.

As regards the influence that remittances by core households have on the value of remittances received by dynasty households, the effects seem insignificant in statistical terms. Sending of remittances by the 2004 core household was expected to increase the value of inward remittances received by dynasty households. Model 1 suggests a negative effect, but since the model fails the test for overall goodness-of-fit, it can be concluded that the probability that a 2004 core household would send remittances did not significantly influence the value of remittances received by dynasty households. Model 2 and Model 4 indicate negligible and insignificant influences on the value of remittances received by dynasty households by both the value of remittances sent by the 2004 core households and the net value of remittances sent by these core households. Again, against a priori expectation, there is a large (R303) negative, but statistically insignificant, effect of the presence of net outward remittances by core households on the value of remittances received by dynasty households ($p>0.10$).

Table 5.6 indicates that remittance transitions in core households (whether the core household ever sent/did not send remittances in 1993, 1998 or 2004), significantly increased the probability that a dynasty household would receive remittances by 13.3%. From Table 5.7 it is however clear that remittance transitions did not significantly influence the value of remittances received by the 2004 dynasty households.

Table 5.7: **Linear regression results for the value of inward remittances received in the 2004 dynasty households, by remittance behaviour in core households**

2004 dynasties –Value of inward remittances – Rand value	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**	**Model 3 (dF/dx)**	**Model 4 (dF/dx)**	**Model 5 (dF/dx)**
Dynasty household size	-2.72	27.41**	-17.24	-20.21	-1.04
Dynasty dependency ratio	566.49	48.90	663.51	708.05	566.96
2004 cores sending remittances (0/1)	-100.09				
Value of 2004 cores' outward remittances		0.16			
2004 core net remittance sender (0/1)			-302.74		
2004 core net remittance value				0.09	
Core never/ever sent (0/1) (1993-2004)					118.82
Sample size (n)	104	35	59	59	111
F	6.03	4.49	1.66	2.52	5.41
Prob> F	0.0008	0.0100	0.1873	0.0676	0.0017
R-squared	0.0371	0.2159	0.0502	0.0318	0.0379

Table 5.8 shows the probit regression results estimating the probability that a dynasty household would be a net receiver of remittances. None of the regression models in Table 5.8 are statistically significant in explaining the probability that a dynasty household would be a net receiver of remittances (p>0.10). The reason may be the relatively small sample sizes and the lack of other significant explanatory variables in estimating the probability that a dynasty household would be a net receiver of remittances. Although core remittance behaviour, as expected in all cases, had a positive effect on the probability that a dynasty would be a net receiver of remittances, none of these independent variables are individually statistically significant (p>0.10).

Table 5.8: **Probit regression results for net remittance receivers in the 2004 dynasty households, by remittance behaviour in core households**

2004 dynasties – net remittance receivers dummy – probit NetRemReceivers04	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**	**Model 3 (dF/dx)**	**Model 4 (dF/dx)**	**Model 5 (dF/dx)**
Dynasty household size	0.0207*	0.0218*	0.0165	0.0228*	0.0251**
Dynasty dependency ratio	0.0459	0.0471	0.0756	0.0474	0.0315
2004 cores sending remittances (0/1)	0.0870				
Value of 2004 cores' outward remittances		0.0000			
2004 core net remittance senders – (0/1)			0.0771		
2004 core net remittance value				0.0000	
Core never/ever sent (0/1) (1993 – 2004)					0.0688
Sample size (n)	197	197	110	197	207
Wald chi2	5.27	4.36	2.63	4.66	6.00
Prob>chi2	0.1533	0.2251	0.4516	0.1981	0.1119
Pseudo R2	0.0201	0.0160	0.0174	0.0175	0.0216
% Correctly classified	59.39%	57.36%	56.36%	58.88%	57.49%

Similar conclusions are drawn in Table 5.9. Although all, except Model 3, are overall statistically significant (p<0.05), neither of the 2004 core remittance behaviour characteristics, nor the remittance transitions in core households significantly influenced the net value of real remittances received by dynasty households. Although not statistically

significant, dynasties linked to a net remittance sending core household, or cores that ever sent remittances, impacted positively on the net value of remittances in dynasty households.

Table 5.9: **Linear regression results for the value of real net remittances in dynasty households, by remittance behaviour in core households**

2004 dynasties – net remittance VALUE –	Model 1 (dF/dx)	Model 2 (dF/dx)	Model 3 (dF/dx)	Model 4 (dF/dx)	Model 5 (dF/dx)
Dynasty household size	17.24	18.36	0.30	19.21	21.29
Dynasty dependency ratio	430.04	416.42	677.40	438.64	370.96
2004 cores sending remittances (0/1)	-11.50				
Value of 2004 cores' outward remittances		-0.22			
2004 core net remittance senders (0/1)			-107.31		
2004 core net remittance value				0.19	
Core never/ever sent (0/1) (1993 – 2004)					75.95
Sample size (n)	197	197	110	197	207
F	3.73	3.69	1.30	4.00	4.18
Prob>F	0.0122	0.0130	0.2786	0.0086	0.0067
R-squared	0.0306	0.0362	0.0335	0.0422	0.0321

5.5.3 Effect of poverty dynamics in cores on remittances in dynasty households

Table 5.10 depicts the results indicating the influence that poverty dynamics in core households had on the probability that a dynasty household would receive remittances. The Heckman selection model (refer to Appendix 5 for the results) led to the conclusion that there was no selection problem (i.e. value of remittances only observed for those who receive remittances), hence the separate probit and linear regression models. All the models were also adjusted for heteroscedasticity by using robust standard errors. Model 1 subdivides the transitory poor core households into cores moving into poverty and cores moving out of poverty respectively, while Model 2 combines the two groups in a single transitory poor category. Given the Wald chi2 values and their associated probability values ($p>0.10$), neither of the two models are significant in explaining the probability that a dynasty household would receive remittances. Since poverty hinders financial aid to other friends or family, it is generally expected that a dynasty household that has ties with a transitory or chronically poor

core will impact negatively on the probability that a dynasty household will receive remittances. Even though not individually statistically significant, Model 1 shows that ties with cores moving out of poverty here increased the probability that a dynasty would receive remittances, while if they were linked to a core moving into poverty, the probability that dynasty households would receive remittances would be lower than in the case of dynasties linked to non-poor cores. Given the statistical insignificance of the results, it can however be concluded that poverty dynamics in core households did not significantly influence the probability that the linked dynasty household would receive remittances.

Table 5.10: **Probit regression results for remittance-receiving dynasty households, by poverty dynamics in core households**

2004 dynasty remittances received (0/1)	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**
Dynasty household size	0.0041	0.0046
Dynasty dependency ratio	-0.0681	-0.0762
Core transitory out of poverty vs non-poor	0.0794	0.0303
Core transitory into poverty vs non-poor	-0.0429	
Core chronically poor vs non-poor	0.0331	0.0336
Sample size (n)	446	446
Wald chi2	5.90	1.37
Prob>chi2	0.3159	0.8499
Pseudo R2	0.0124	0.0029
% Correctly classified	76.68%	76.68%

Table 5.11 reports on the effect of poverty dynamics in core households on the value of remittances received by dynasty households. Although the F-values and their associated probability values show both models to be statistically significant in terms of overall goodness-of-fit (i.e. explaining the variation in the value of inward remittances), none of the individual explanatory variables are statistically significant. Model 1 shows that, as expected, ties with cores moving out of poverty increased the value of net remittances received by dynasty households, while links to a core household that had moved into poverty had a

negative effect on the real value of monthly inward remittances by dynasties. Yet none of these coefficients were individually statistically significant.

Table 5.11: **Linear regression results for the value of remittances in dynasty households, by poverty dynamics in core households**

2004 dynasty remittances received value	Model 1 (dF/dx)	Model 2 (dF/dx)
Dynasty household size	-4.78	-4.23
Dynasty dependency ratio	566.17	563.01
Core transitory out of poverty vs non-poor	100.21	65.57
Core transitory into poverty vs non-poor	-16.40	
Core chronically poor vs non-poor	18.50	18.80
Sample size (n)	104	104
F	3.39	4.41
Prob > F	0.0072	0.0025
R-squared	0.0376	0.0352

Table 5.12 reveals the effect that poverty dynamics in core households had on the probability that a dynasty household would be a net receiver of remittances. The Wald chi2 values and their p-values indicate that both models were statistically significant in explaining the probability that a dynasty household would be a net receiver of remittances ($p<0.10$). These regression models correctly classified 61.9% of the dynasty households as being net remittance receivers. An increase in the size of the dynasty household would increase the probability of a household being a net receiver of remittances by about 2.3% (2.28% for Model 1 and 2.32% for Model 2) for every person added, this again supplying evidence of the importance of remittances to larger households ($p=0.055$). It is to be expected that dynasties from poor backgrounds (especially chronically poor backgrounds) will have a high probability of also being poor (as indicated in Chapter 3) – therefore resulting in their being net receivers rather than net senders of remittances. Yet one would expect dynasties from non-poor backgrounds rather to be net senders and not net receivers of remittances. The results, though only weakly significant in statistical terms (10%), confirm this hypothesis. Model 1 (Model 2) shows a dynasty household from a chronically poor background to be significantly

more likely to be a net receiver of remittances (26.98% for Model 1 and 27.0% for Model 2) than would a dynasty household from a non-poor background (p=0.058). A chronically poor background therefore increases the net inflow of remittances in corresponding dynasties.

Table 5.12: **Probit regression results for net remittance-receiving dynasty households, by poverty dynamics in core households**

2004 dynasty net remittance receiver (0/1)	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**
Dynasty household size	0.0228*	0.0232*
Dynasty dependency ratio	0.0344	0.0445
Core transitory out of poverty vs non-poor	0.1028	0.0224
Core transitory into poverty vs non-poor	-0.1147	
Core chronically poor vs non-poor	0.2698*	0.2700*
Sample size (n)	197	197
Wald chi2	12.14	7.94
Prob>chi2	0.0329	0.0936
Pseudo R2	0.0451	0.0290
% Correctly classified	61.93%	61.93%

Given the evidence that dynasties from chronically poor core households were approximately 27% more likely to be net receivers of remittances, coming from a chronically poor background was expected to have a positive influence on the value of net remittances in dynasty households. This argument is based on the hypothesis that dynasties from a chronically poor background (as indicated in Chapter 3) have a higher probability of being poor, and that they therefore rely on remittances as a source of income. Table 5.13 supports this claim in showing that net remittances in a dynasty household increased by about R193 per month for dynasties from chronically poor backgrounds, while those dynasties from non-poor backgrounds, did not. The difference, though very close (p=0.112), was not statistically significant at the ten per cent level of significance. Given the above hypothesis, one would further expect dynasties linked to cores that have moved into poverty to experience an increase in the value of net remittances received by dynasty households. The results in Model

1 do not support the latter hypothesis. The reported decrease of R38 per month in net remittances in dynasties from non-poor backgrounds is not statistically significantly different.

Table 5.13: **Linear regression results for the value of real net remittances in dynasty households, by poverty dynamics in core households**

2004 dynasty net remittances value	Model 1 (dF/dx)	Model 2 (dF/dx)
Dynasty household size	17.27	17.93
Dynasty dependency ratio	404.57	415.88
Core transitory out of poverty vs non-poor	170.51	92.40
Core transitory into poverty vs non-poor	-38.02	
Core chronically poor vs non-poor	192.74	193.19
Sample size (n)	197	197
F	4.05	3.49
Prob > F	0.0016	0.0088
R-squared	0.0464	0.0366

5.5.4 Effect of core remittances on poverty in dynasty households

Probit regression models were used to investigate the effect of core remittances on the headcount poverty experienced in dynasty households, while tobit regression models were employed to investigate the effect of core remittances on the depth and severity of poverty in dynasty households. All the models used clustered robust standard errors to adjust for heteroscedasticity and clustering.

Table 5.14 shows all five models to be statistically significant in explaining headcount poverty in dynasty households ($p<0.001$). Four of the five regression models in Table 5.14 correctly classify more than 80% of dynasty households as being poor, while Model 1 correctly classifies 78.7% of dynasties as being poor. As expected (and supported in Chapter 3), both the size of the dynasty household and the dependency ratio in a dynasty household significantly increase the prevalence (Table 5.14), depth (Table 5.15) and severity (Table 5.16) of poverty.

As regards analysing the effect of core remittances on headcount poverty in dynasty households, Table 5.14 shows that, when a 2004 core household sent remittances, the probability that their linked dynasty would be poor falls by 8.2% (Model 1). Model 2, Model 3 and Model 4 show no significant influence on the poverty headcount in dynasties either by the value of remittances sent by the 2004 core households, or the fact that a 2004 core household was a net sender of remittances, or even the value of net remittances by the 2004 core household. Model 5 investigates the influence that the presence of any remittance-sending by the core household (past or present) could have had on the probability that the dynasty household would be poor. In contrast to dynasties linked to never-remitting core households, being linked to core households that had ever sent remittances significantly decreased the probability, by 13.9%, that the dynasty household would be poor. It is evident from both Model 1 and Model 5 that remittances by core households, as expected, significantly reduces the probability that a dynasty household is poor.

Table 5.14: **Core remittances as determinant of headcount poverty in dynasty households**

2004 dynasty HEADCOUNT poverty (0/1)	Model 1 (dF/dx)	Model 2 (dF/dx)	Model 3 (dF/dx)	Model 4 (dF/dx)	Model 5 (dF/dx)
Dynasty household size	0.0462***	0.0391***	0.0443***	0.0444***	0.0436***
Dynasty dependency ratio	0.3626***	0.2040	0.2611*	0.2650**	0.3320***
2004 cores sending remittances (0/1)	-0.0817*				
Value of 2004 cores' outward remittances		-0.0001			
2004 core net remittance senders (0/1)			-0.0262		
2004 core net remittance value				0.0001	
Core never/ever sent (0/1) (1993–2004)					-0.1391***
Sample size (n)	446	97	196	196	465
Wald chi2	54.94	18.67	34.94	34.62	68.40
Prob>chi2	0.0000	0.0003	0.0000	0.0000	0.0000
Pseudo R2	0.1715	0.1895	0.1896	0.1959	0.1931
% Correctly classified	78.70%	81.44%	81.12%	81.12%	80.43%

Remittances in core households and poverty transitions were interacted to investigate the effect on headcount poverty in dynasties. The regression results indicated that remittances

from a 2004 core household with a non-poor background significantly decreased the probability that the dynasty household would be poor by about 11.2% (p=0.049). When outward remittance transitions were interacted with poverty dynamics in core households, the results also showed that any remittances from cores with non-poor backgrounds decreased the probability that their linked dynasty household would be poor by about 9.0% (p=0.094).

Similar results are shown in Table 5.15, which demonstrates the effect of core remittances on the depth of poverty in dynasty households. All models are shown to be statistically significant in terms of overall goodness-of-fit (i.e. explaining the variation in the value of inward remittances), given the F-values and associated p-values. Model 1 explains around 19.6% of the variation in the depth of dynasty poverty, while models 2 to 5 explain between 21.7% (Model 5) and 25.2% (Model 2) of the variation in the depth of poverty in dynasty households.

Table 5.15: **Core remittances as determinant of the depth of poverty in dynasty households**

2004 dynasty DEPTH of poverty – tobit	Model 1 (dF/dx)	Model 2 (dF/dx)	Model 3 (dF/dx)	Model 4 (dF/dx)	Model 5 (dF/dx)
Dynasty household size	0.0715***	0.0765***	0.0843***	0.0843***	0.0692***
Dynasty dependency ratio	0.4967***	0.4194	0.5881**	0.5882***	0.4691***
2004 cores sending remittances (0/1)	-0.1567**				
Value of 2004 cores' outward remittances		-0.0002			
2004 core net remittance senders (0/1)			-0.1010		
2004 core net remittance value				0.0002	
Core never/ever sent (0/1) (1993 – 2004)					-0.2324***
Sample size (n)	446	97	196	196	465
F	33.18	6.96	16.50	17.03	39.23
Prob>F	0.0000	0.0003	0.0000	0.0000	0.0000
Pseudo R2	0.1962	0.2518	0.2276	0.2411	0.2174

As in Table 5.14, the sending of remittances in 2004 by core households not only reduced the headcount poverty in dynasty households, but also significantly reduced the depth of poverty experienced by dynasties (0.157) compared with those dynasties linked to non-remitting 2004 cores (p=0.034). Remittance transitions in core households, separating those core households

that had ever sent remittances in the three years under consideration (1993, 1998, 2004) from those that had never sent remittances in any of the survey years, also significantly reduced the severity of poverty in dynasty households (0.2324) (p<0.001). Poverty dynamics and remittances in core households were interacted to determine the influence on the depth of poverty in dynasty households. The results indicate a statistically significant decrease of 0.260 in the depth of poverty in dynasties linked to 2004 remitting cores with non-poor backgrounds (p=0.008). The depth of poverty in dynasties linked to ever-remitting, non-poor core households was statistically lower (p=0.067).

Table 5.16 reflects both the severity of poverty by remittances and remittance transitions in core households. The severity of poverty experienced by dynasties linked to remitting 2004 cores are statistically significantly lower (-0.085) than that experienced by dynasties from non-remitting cores (p=0.042). The severity of poverty in dynasty households with ties to ever-remitting cores was also statistically significantly lower (-0.128) than that of dynasties from never-remitting cores (p=0.001). As expected, remittances from non-poor cores also significantly decreased the severity of poverty in dynasty households. Results indicate a statistically significant decrease in the severity of poverty of 0.155 in dynasties of non-poor cores that had sent remittances in 2004 (p=0.004). The poverty experienced by dynasties from ever-remitting, non-poor cores was also significantly less severe (-0.097: p=0.059).

Table 5.16: **Core remittances as determinant of the severity of poverty in dynasty households**

2004 dynasty SEVERITY of poverty – tobit	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**	**Model 3 (dF/dx)**	**Model 4 (dF/dx)**	**Model 5 (dF/dx)**
Dynasty household size	0.0403***	0.0436***	0.0466***	0.0466***	0.0390***
Dynasty dependency ratio	0.2719***	0.2765	0.3598**	0.3611***	0.2563***
2004 cores sending remittances (0/1)	-0.0852**				
Value of 2004 cores' outward remittances		-0.0001			
2004 core net remittance senders (0/1)			-0.0571		
2004 core net remittance value				0.0001*	
Core never/ever sent (0/1) (1993 – 2004)					-0.1278***
Sample size (n)	446	97	196	196	465
F	23.13	4.07	10.29	10.47	25.72
Prob>F	0.0000	0.0092	0.0000	0.0000	0.0000
Pseudo R2	0.2766	0.3466	0.3206	0.3427	0.3032

Table 5.14, Table 5.15 and Table 5.16 therefore lead to the conclusion that outward remittances from core households (especially non-poor cores), significantly reduce not only the headcount poverty in dynasty households, but also the depth and severity of poverty experienced by dynasties.

5.5.5 Effect of dynasty remittances on poverty in dynasty households

Table 5.17 indicates the influence that remittances in dynasties may have on headcount poverty in dynasty households. Table 5.17 reports all the marginal effects that particular remittance variables have on the probability of a dynasty household being poor. The regression models all use robust standard errors to adjust for heteroscedasticity. The Wald Chi^2 tests, together with their probability values, indicate that all the models perform adequately in terms of goodness-of-fit. Hence, at least some of the independent variables explain part of the probability that a dynasty household will be poor. The regression diagnostics indicate that at least 80% of dynasty households are correctly classified as being poor by the relevant regression models. All the regression models therefore have a relatively good fit with the data.

Household size was here once again associated with higher levels of headcount poverty. On average, an increase of one person in the dynasty household size increased headcount poverty by between 1.8% (Model 3) and 3.7% (Model 1). Only Model 1 showed a significant influence of the dependency ratio on headcount poverty in dynasty households, increasing the probability of being poor by 31.6% for a one percentage-point increase in the dependency ratio (p=0.001).

According to the risk diversification theory, it is expected that a remittance-receiving dynasty will have a significantly lower probability of being poor than dynasties not receiving remittances. Model 1 indicates that the probability of being poor was 5.0% lower for remittance-receiving dynasties than for non-remittance-receiving dynasties, although the effect was not statistically significant (p=0.245). According to regression Model 1 and Model 2, neither receiving remittances (Model 1), nor the value of remittances received (Model 2) significantly reduced the dynasties' probability of being poor (p=0.245 and p=0.208).

One would moreover have expected net remittance-receiving dynasties to have been significantly less likely to be poor. Although Model 3 shows that net-remittance-receiving dynasty households had a statistically significant association with poverty status ($p<0.001$), the effect was positive, not negative (i.e. receiving remittances increased the probability of being poor). If a dynasty therefore is a net receiver of remittances, the probability of being poor is 15.4% higher than that of dynasties that are net remittance senders. Also, an increase of R1000 in the value of net remittances increased the probability of being poor by 0.04% ($p=0.086$), again contrary to a priori expectations. A probable explanation is reverse causality, where levels of poverty in the dynasty household, rightly, are associated with an inflow of remittances.

Table 5.17: **Dynasty remittances as determinant of headcount poverty in dynasty households**

2004 dynasty HEADCOUNT poverty – probit	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**	**Model 3 (dF/dx)**	**Model 4 (dF/dx)**
Dynasty household size	0.0376***	0.0317***	0.0178***	0.0226***
Dynasty dependency ratio	0.3163***	0.0713	0.0002	0.0168
Dynasty receiving remittances (0/1)	-0.0502			
Value of 2004 dynasty inward remittances (R'000)		-0.100		
2004 dynasty net remittance receivers (0/1)			0.1543***	
2004 dynasty net remittance value (R'000)				0.04*
Sample size (n)	512	127	232	233
Wald chi2	47.00	11.00	23.13	20.39
Prob>chi2	0.0000	0.0117	0.0000	0.0001
Pseudo R2	0.1346	0.1170	0.2247	0.1314
% Correctly classified	80.66%	80.31%	88.79%	88.41%

As was expected, the results on the effect that remittances to dynasties has on the depth of poverty in dynasty households support similar conclusions to those following from Table 5.17. All models are statistically significant in explaining the variation in the depth of poverty in dynasty households (as reflected in the chi2 values and the accompanying p-values). All the

models, except Model 3, explain approximately 15% of the variation in the depth of poverty in dynasty households. Model 3 explains some 25% of the variation in the depth of poverty.

Since remittances are an important source of income for poor households, one expects remittances to result in a decrease in the depth of poverty. According to Model 1, the depth of poverty in dynasties receiving remittances has been found to be lower than in dynasties not receiving remittances, although the result is not statistical significant (p=0.252). In fact, both the net receiving of remittances (Model 3) and the value of net remittances (Model 5) are associated with a statistically significant increase in the depth of poverty in dynasty households. A probable explanation for this unexpected result is reverse causality, the depth of poverty in the dynasty household being associated with an inflow of remittances. The depth of poverty experienced by net remittance-receiving dynasties (0.559) is significantly higher (p<0.001) than for net senders of remittances, while the depth of poverty in dynasty households significantly increases (p=0.089) with the net real value of remittances.

Table 5.18: **Dynasty remittances as determinant of the depth of poverty in dynasty households**

2004 dynasty DEPTH of poverty – tobit	Model 1 (dF/dx)	Model 2 (dF/dx)	Model 3 (dF/dx)	Model 4 (dF/dx)
Dynasty household size	0.0667***	0.0670***	0.0666***	0.0731***
Dynasty dependency ratio	0.4509***	0.1660	0.0099	0.0640
Dynasty receiving remittances (0/1)	-0.0836			
Value of 2004 dynasty inward remittances (R'000)		-0.300		
2004 dynasty net remittance receivers (0/1)			0.5592***	
2004 dynasty net remittance value (R'000)				0.100*
Sample size (n)	512	127	232	233
Wald chi2	24.98	4.79	9.73	8.61
Prob>chi2	0.0000	0.0034	0.0000	0.0000
Pseudo R2	0.1579	0.1417	0.2574	0.1472

The regression models investigating the effect of dynasty remittances on the severity of poverty in dynasties are reported in Table 5.19. The fit of each model is statistically significant

(prob>chi2 <0.05) and explains between 20% (Model 4) and 35% (Model 3) of the variation in the severity of poverty experienced by dynasty households. The severity of poverty is, as expected, significantly influenced by the value of inward remittances and the receipts of net remittances by dynasty households. Model 2 shows the severity of poverty in dynasties to be lower by 0.2 for every R1000 increase in the value of inward remittances (p=0.087). Similar to Table 5.17 and Table 5.18, net remittance receipts increase the severity of poverty experienced in dynasty households by 0.28 (p=0.001).

Table 5.19: **Dynasty remittances as determinant of the severity of poverty in dynasty households**

2004 dynasty SEVERITY of poverty – tobit	**Model 1 (dF/dx)**	**Model 2 (dF/dx)**	**Model 3 (dF/dx)**	**Model 4 (dF/dx)**
Dynasty household size	0.0396***	0.0357***	0.0340***	0.0369***
Dynasty dependency ratio	0.2402***	0.0893	0.0052	0.0339
Dynasty receiving remittances (0/1)	-0.0527			
Value of 2004 dynasty inward remittances (R'000)		-0.200*		
2004 dynasty net remittance receivers (0/1)			0.2844***	
2004 dynasty net remittance value (R'000)				0.100
Sample size (n)	512	127	232	233
Wald chi2	17.75	3.36	5.63	5.00
Prob>chi2	0.0000	0.0210	0.0000	0.0022
Pseudo R2	0.2308	0.2098	0.3505	0.2008

5.6 Summary

The chapters' main conclusions can be summarised as follows:

- Remittances in 2004, on average, contributed 5.1% to total dynasty income and contributed on average 22.6% to total household income for dynasties receiving remittances.

- Dynasties linked to chronically poor backgrounds were more likely to and did actually receive higher average and median values of inward remittances than did dynasties from transitory or non-poor backgrounds.

- Dynasties linked to 2004 remitting cores or ever-remitting cores were significantly more likely to receive remittances than were dynasties from non-remitting 2004 cores or from never-remitting cores.

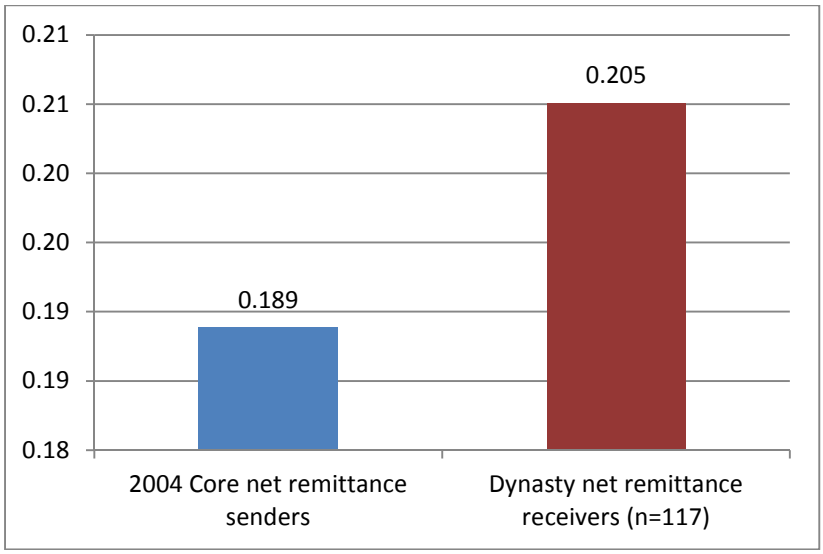
- The headcount poverty and the depth and severity of poverty in dynasty households were significantly lower for dynasties linked to 2004 remitting cores or ever-remitting cores.

- The headcount poverty and the depth and severity of poverty in dynasty households were significantly higher for net remittance-receiving dynasties.

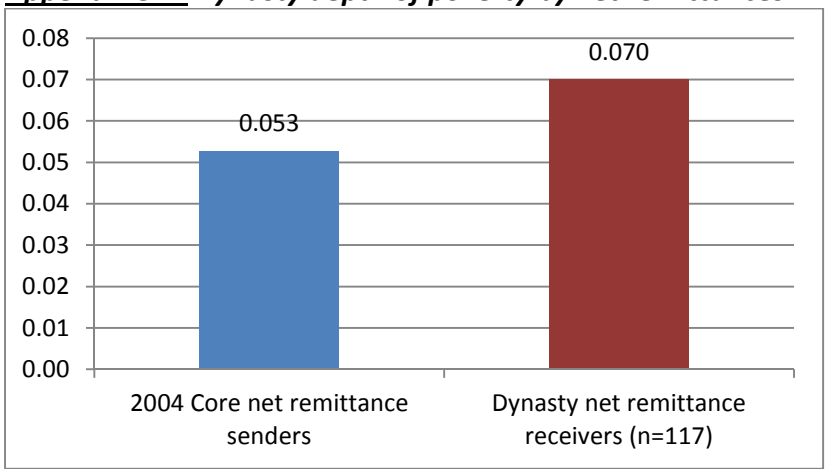
However, these results need to be interpreted with caution against the reality of the many methodological challenges in investigating the association between remittances and poverty. For example, dynasty households receiving remittances may be non-poor not necessarily because they receive remittances from core households, but because they originate from non-poor core households.

APPENDIX 5

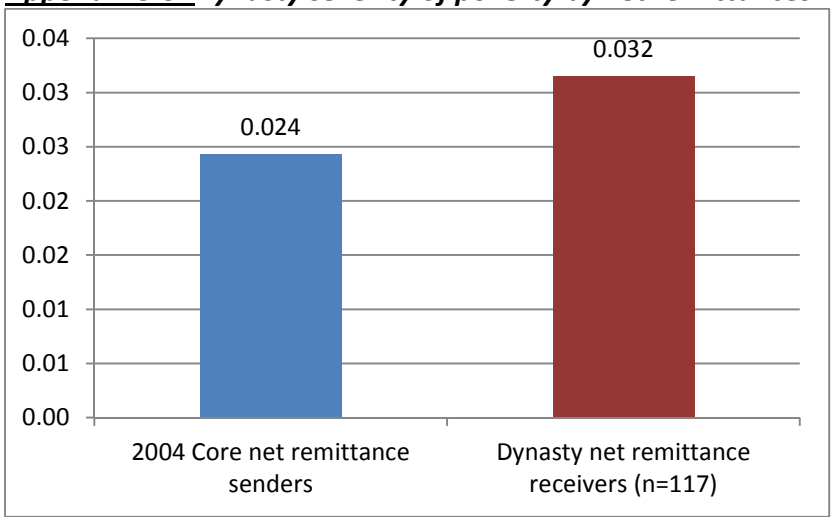
Appendix 5.1: ***Headcount poverty in Dynasties by net remittances - net senders/net receivers***



Appendix 5.2: ***Dynasty depth of poverty by net remittances - net senders/net receivers***



Appendix 5.3: ***Dynasty severity of poverty by net remittances - net senders/net receivers***



Appendix 5.4: **Two-step Heckman selection model: Core outward remittances**

Heckman twostep	Coefficient	Std. Err.	z	P>|z|
2004 Cores outward remittances value				
2004 Core household size	-53.8713	251.6088	-0.21	0.83
2004 Core dependency ratio	-978.4478	3942.9630	-0.25	0.804
Core transitory out of poverty vs non-poor	187.1167	997.9408	0.19	0.851
Core transitory into poverty vs non-poor	-1238.6600	5856.6490	-0.21	0.832
Core chronically poor vs non-poor	-1353.3870	5200.6880	-0.26	0.795
Constant	-1025.0970	7770.4930	-0.13	0.895
2004 Cores outward remittances dummy				
2004 Core household size	-0.0384	0.0269	-1.43	0.154
2004 Core dependency ratio	-0.6054	0.2916	-2.08	0.038
Core transitory out of poverty vs non-poor	0.1522	0.1818	0.84	0.403
Core transitory into poverty vs non-poor	-0.7919	0.2832	-2.8	0.005
Core chronically poor vs non-poor	-0.7353	0.3985	-1.85	0.065
Constant	-0.1449	0.1834	-0.79	0.429
Sample size (n)		324		
Censored obs		249		
Uncensored obs		75		
Wald chi2		0.18		
Prob> Chi2		0.9993		
Mills lambda		1696.944		
Prob> Mills lambda		0.847		

Appendix 5.4: **Two-step Heckman selection model: Dynasty inward remittances**

Heckman selection model: two-step	Coefficient	Std. Err.	z	P>|z|
2004 Dynasty inward remittances value				
2004 Dynasty household size	-976.3501	34040.7600	-0.03	0.977
2004 Dynasty dependency ratio	16664.3900	563961.9000	0.03	0.976
Core transitory out of poverty vs non-poor	-17834.6300	626767.6000	-0.03	0.977
Core transitory into poverty vs non-poor	10721.3700	375378.2000	0.03	0.977
Core chronically poor vs non-poor	-7585.7180	266675.1000	-0.03	0.977
Constant	127091.0000	4428963.0000	0.03	0.977
2004 Dynasty inward remittances dummy				
2004 Dynasty household size	0.0136	0.0208	0.66	0.512
2004 Dynasty dependency ratio	-0.2240	0.3163	-0.71	0.479
Core transitory out of poverty vs non-poor	0.2525	0.1578	1.6	0.11
Core transitory into poverty vs non-poor	-0.1456	0.1852	-0.79	0.432
Core chronically poor vs non-poor	0.1055	0.2421	0.44	0.663
Constant	-0.7784	0.1793	-4.34	0
Sample size (n)		446		
Censored obs		342		
Uncensored obs		104		
Wald chi2		0		
Prob> Chi2		1.0000		
Mills lambda		-93913.65		
Prob> Mills lambda		0.977		

Chapter 6

Intra-household dynamics and household welfare in dynasty households in KwaZulu-Natal, South Africa

Chapter 3 indicates that as many as 22.5 per cent of dynasty households live in poverty, while 51.2 per cent of dynasty households from a chronically poor background live in poverty. Chapter 4 indicates that 40.7 per cent of dynasty households overall migrated over the 1998 to 2004 period, while 58.5% of dynasties from a chronically poor background migrated over the same period. Twenty four per cent (24.4%) of dynasties from a chronically poor background received remittances, emphasizing the importance of remittances for household welfare. Chapter 6 employs the second approach of the two-pronged analytical strategy to investigate the complexity of intra-household dynamics in dynasty households. The analysis comprises two parts: first, to set the scene, an extensive overview and comparison of the characteristics of core and dynasty household members is provided to assess the nature of household formation and composition, including its relation to migration and poverty. Second, the analysis focuses on the causal impact of migration on household welfare in association with remittances, social transfers, social capital, and employment.

This chapter aims to investigate intra-household dynamics and their effect on dynasty-household welfare in KwaZulu-Natal during the post-apartheid political transition in South Africa. More specifically, this chapter aims to:

- Document the characteristics of core and non-core members of core and dynasty households
- Compare the household structures of core and dynasty households
- Examine the intra-household composition of dynasty households
- Explore the intra-household composition of poor and non-poor dynasty households
- Explore the intra-household composition of migratory and non-migratory dynasty households
- Investigate the influence of the characteristics of core and non-core members on household welfare in dynasty households

6.1 Characteristics of core and dynasty households

Table 6.1 summarises the age of individuals in core and dynasty households. As expected, the average (median) age of dynasty members is significantly lower at 22.3 years (18 years) compared with the average (median) age of 25.6 years (20 years) for core household members ($p<0.001$). The interquartile range for the average age is larger for core households, indicating a range of 10 to 39 years of age compared with the interquartile range for dynasty household members of nine to 33 years of age.

Comparison of the average age of the 1993 and 1998 household members in core households with the 1993 and 1998 core household members in dynasty households also reveals a significant age difference: in core households, the average age is 32.1 years, while in dynasty households, the average age is significantly lower at 24.2 years ($p<0.001$). This reveals that younger core members are more likely to have moved to dynasty households.

When comparing the average age of the core household members with those of non-core household members in dynasty households, Table 6.1 not surprisingly indicates that core household members are significantly older (24.2 years) than are non-core household members (21.3 years) ($p<0.001$).

Table 6.1: **Age in core and dynasty households**

Age (years)	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Mean	35.89	16.34	32.08	13.04	25.60	26.01	19.28	24.19	21.32	22.34	23.69
Median	30.00	10.00	26.00	7.00	20.00	26.00	12.00	23.00	16.00	18.00	19.00
IQR	19-51	8-18	15-47	3-19	10-39	16-34	8-27	13-33	6-32	9-33	9-34
Sample (n)	1083	262	1345	694	2039	760	283	1043	1862	2920	4944

Note: Refer to text for levels of significance

Table 6.2 depicts the levels of education in core and dynasty households by household composition. At first glance, it would appear that dynasty household members have higher levels of education than core households, but not all the differences are statistically significant. A total of 32.5% of core households have no education as against the 30.8% of

dynasty households (p=0.116), while 28.4% of core households and 26% of dynasty households have only primary schooling (p=0.034). As many as 28.5% of core households have some level of secondary education in comparison with 27.2% of dynasty households (p=0.163). In respect of the higher levels of education, it is clear from Table 6.2 that only 8.6% of core households have passed Grade 12 as opposed to 12.9% of dynasty households (p<0.001). As regards post-secondary education, only 2% of core household members have some form of post-secondary education compared with 3.1% of dynasty household members (p=0.015). If we combine the data for Grade 12 and post-secondary education in Table 6.2, only 10.6% of core household members have a Grade 12 or higher qualification as against the 16% of dynasty household members (p<0.001). Given the above, it is safe to assume that dynasty members have been better able to benefit in the post-apartheid dispensation in that they have more access to education.

A comparison of core members (1993 & 1998 members) in core and in dynasty households reveals that core members in dynasty households have significantly higher levels of education than core members in core households. In core households, 18.8% of the core members (1993 & 1998 members) have no education, 33.9% have only some form of primary education and as many as 34.9% have some form of secondary education. This is much higher than the 14.4% of core members in dynasty households with no education (p=0.003) or the 30.1% with only primary education (p=0.029) and the 34.3% with some form of secondary education (p=0.404). Comparison of individuals with a Grade 12 or a higher level of education (see Table 6.2) reveals that only 12.6% of core individuals in core households have a Grade 12 or higher level of education and that 21.2% of core members in dynasty households have attained a comparable level of education (p<0.001). This again confirms that, even by only comparing core individuals in core and dynasty households, the core individuals in dynasty households have significantly higher levels of education. It would thus appear that core household members with higher education have moved (“migrated”) to dynasty households.

It is to be expected that non-core (2004) members in dynasty households would have benefited in post-apartheid South Africa by having had access to education and therefore that they would have higher levels of education than core household members. According to Table 6.2, this is however not the case. While only 14.4% of core members in dynasty households

have no education, this was true of 40.1% of non-core dynasty members (p<0.001). When one compares individuals with Grade 12 or a higher level of education it is clear that 21.2% of core members in dynasty households have a Grade 12 or a higher level of education but that this is the case in only 13.1% of non-core dynasty members (p<0.001). It can therefore be concluded that, on average, dynasty households have higher levels of education than do core households but that these higher levels of education in dynasty households may be attributed to the significantly higher levels of education of core rather than non-core individuals in dynasty households.

Table 6.2: **Levels of education of individuals in core and dynasty households**

Level of education	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
No schooling	13.6%	39.6%	18.8%	59.2%	32.5%	5.2%	39.4%	14.4%	40.1%	30.8%	31.5%
Primary	31.9%	41.9%	33.9%	17.7%	28.4%	29.6%	31.4%	30.1%	23.6%	26.0%	27.0%
Secondary	39.4%	16.2%	34.9%	16.3%	28.5%	39.2%	20.9%	34.3%	23.2%	27.2%	27.7%
Matric	11.5%	1.9%	9.6%	6.6%	8.6%	21.5%	7.6%	17.7%	10.2%	12.9%	11.1%
Post-secondary	3.6%	0.4%	3.0%	0.3%	2.0%	4.5%	0.7%	3.5%	2.9%	3.1%	2.7%
Grade 12 and higher	15.1%	2.3%	12.6%	6.9%	10.6%	26.0%	8.3%	21.2%	13.1%	16.0%	13.8%
Total	115.1%	102.3%	112.6%	106.9%	110.6%	126.0%	108.3%	121.2%	113.1%	116.0%	113.8%
Sample (n)	1063	260	1323	683	2006	750	277	1027	1823	2850	4856

Note: Refer to text for levels of significance

Table 6.3 summarises the levels of education in core and dynasty households but only for individuals older than 23 years of age. The results mirror those in Table 6.2 above. Once again, dynasty households, on average, have higher levels of education than have individuals in core households. These higher levels of education are however due to the contribution that core individuals in the dynasty households make to the average level of education (rather than the contribution made by non-core individuals). While a total of 19.6% of individuals in core households have no education, this is true of only 12.0% of the individuals in dynasty households (p<0.001). Similarly, almost 30% of core household individuals have only a primary level of education as against the 25.9% of dynasty household members (p=0.001). There is no significant difference in the proportion of core household members or dynasty household members with some kind of secondary schooling (p=0.501). As regards members

with a Grade 12 education, it is evident that whereas 21.9% of dynasty household members have passed Grade 12, only 14.2% of core household members have done so ($p<0.001$). As for post-secondary education, a significantly larger proportion of dynasty household members (7.0%) has post-secondary education compared with only 4.3% of core household members ($p=0.007$). If these last two categories are combined, it becomes apparent that 28.9% of dynasty household members and only 18.5% of core household members have a Grade 12 or higher level of education ($p<0.001$).

According to Table 6.2 above, which examines the education of all age groups, core individuals (1993 & 1998) older than 23 years of age living within dynasty households have attained higher levels of education than have core individuals of a corresponding age in core households. Comparison in Table 6.3 only of core individuals who have a level of education of Grade 12 or higher, reveals that 37.4% of core individuals in dynasty households and only 17.0% of core individuals in core households have a level of education of Grade 12 or higher ($p<0.001$). It can therefore once again be concluded that, irrespective of age, dynasty households on average have higher levels of education than do core households. These higher levels of education within dynasty households are attained by core individuals rather than by non-core individuals. It therefore seems that greater numbers of educated cores migrate to dynasty households, that they contribute significantly to the levels of education in dynasty households and that the less educated individuals stay behind in the core households.

Table 6.3: **Education of individuals in core and dynasty households (individuals older than 23 years of age)**

Level of education	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
No schooling	20.0%	22.2%	20.1%	16.5%	19.6%	6.7%	11.4%	7.4%	15.5%	12.0%	15.2%
Primary	29.3%	42.2%	30.1%	21.5%	28.9%	16.6%	25.3%	18.0%	25.9%	22.4%	25.1%
Secondary	33.2%	26.7%	32.8%	34.7%	33.1%	36.6%	40.5%	37.2%	29.7%	33.0%	33.0%
Matric	12.5%	6.7%	12.1%	26.4%	14.2%	32.3%	20.3%	30.4%	21.9%	25.6%	20.8%
Post-secondary	5.1%	2.2%	4.9%	0.8%	4.3%	7.8%	2.5%	7.0%	7.1%	7.0%	5.9%
Grade 12 and higher	17.6%	8.9%	17.0%	27.3%	18.5%	40.1%	22.8%	37.4%	28.9%	32.6%	26.7%
Total	118%	109%	117%	127%	119%	140%	123%	137%	129%	133%	127%
Sample (n)	666	45	711	121	832	421	79	500	650	1150	1982

Note: Refer to text for levels of significance

Dynasty households would appear to be more likely than would core households to send remittances (Table 6.4). Though 5% of dynasty household members sent remittances in 2004, only 4.0% of core households did so (p=0.053). There is no significant difference in respect of receiving remittances between core and dynasty household members, with 3.9% of both core and dynasty household members having received remittances (p=0.528). Since a significantly higher percentage of dynasty household members send remittances, these lead to a significantly higher percentage of dynasty household members being involved in remittance flows. A total of 8.5% of dynasty households as against 7.5% of core household members are involved in either the sending or receiving of remittances. (p=0.102).

Core household members (1993 & 1998) in dynasty households (8.7%) send remittances more often than do core household members in core households (5.4%; p=0.001). Although the difference is not statistically significant, more core members in dynasty households receive remittances (6.3%) than do core members in core households (5.5%) (p=0.222). Consequently, a significantly larger proportion of core members in dynasty households (14.4%) than core members in core households (10.3%) is involved in any remittance exchange (p=0.002).

The senders of remittances are core individuals in dynasty households rather than non-core individuals. In 2004, 8.7% of core individuals in dynasty households sent remittances compared with only 3.0% of non-core individuals in dynasty households (p<0.001). Also, though core individuals in dynasty households were also more likely to receive remittances (6.3%), only 2.5% of the non-core individuals in dynasty households received remittances in 2004 (p<0.001). This significantly higher sending and receiving of remittances by core individuals in dynasty households result in 14.4% of them being active in remittance behaviour as against only 5.2% of non-core individuals in dynasty households (p<0.001). To conclude: Dynasty households are more likely to send or receive remittances mainly because of the remitting of core individuals rather than of non-core individuals in such households.

Table 6.4: **Remittance flows in core and dynasty households**

Remittances	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Sending	6.6%	0.8%	5.4%	1.3%	4.0%	10.7%	3.5%	8.7%	3.0%	5.0%	4.6%
Receiving	6.6%	1.2%	5.5%	0.7%	3.9%	6.8%	5.0%	6.3%	2.5%	3.9%	3.87%
Sending/receiving	12.5%	1.5%	10.3%	2.0%	7.5%	16.7%	8.1%	14.4%	5.2%	8.5%	8.09%
Sample (n)	1083	262	1345	695	2040	760	283	1043	1875	2918	4958

Note: As only 32 individuals sent and received remittances (20 core households and 12 dynasty households), they have been excluded from the table. Refer to text for levels of significance

Although the levels of social capital are surprisingly low, core household members have significantly higher levels of social capital than do dynasty household members (Table 6.5). Only 1.7% (2040) of core household members and only 0.9% of the 2918 dynasty household individuals have bonding social capital ($p=0.011$). Individuals are rather members of bridging social capital organisations than of bonding social capital organisations. In 2004, among core household members 11.2% had bridging social capital, compared with only 6.7% of dynasty household members ($p<0.001$). While almost 12% of core household members had some form of social capital, only 7.1% of dynasty household members had some form of social capital ($p<0.001$). One can therefore conclude that core household members are more likely than dynasty household members to have social capital.

Individuals in core households (1993 & 1998) also have more social capital than do core individuals in dynasty households. Although the difference as regards bonding social capital is not statistically significant ($p=0.140$), both differences in respect of bridging social capital or any form of social capital are significant. Though 16% of the core individuals in core households belong to a bridging social capital organisation, only 11.7% of core individuals in dynasty households do ($p=0.002$). Moreover, whereas 16.8% of the core individuals in core households have some form of social capital, the figure for core individuals in dynasty households is 12.4% ($p=0.001$).

Despite dynasty households having lower levels of social capital, the contribution in respect of social capital apparently comes from core individuals rather than from non-core individuals. Significantly larger proportions of core individuals belong to bonding (1.5%),

bridging (11.7%) or any other form of social capital (12.4%) organisations than do non-core individuals. The respective figures for the latter are: bonding organisations, 0.5%; bridging organisations, 4.0%; any other form of social capital organisation, 4.2% ($p=0.006$, $p<0.001$ & $p<0.001$, respectively). It can therefore be concluded that core households have significantly higher levels of social capital than do dynasty households and that the social capital in dynasty households is due to the contributions made by (older) core individuals rather than those made by (younger) non-core individuals. Similar intergenerational differences are reported for the United States (Putnam, 2001; Sobel, 2002).

Table 6.5: **Social capital in core and dynasty households**

Social capital	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Bonding social capital	2.7%	0.4%	2.2%	0.6%	1.7%	1.7%	1.1%	1.5%	0.5%	0.9%	1.2%
Bridging social capital	18.6%	5.3%	16.0%	1.9%	11.2%	13.6%	6.7%	11.7%	4.0%	6.7%	8.6%
Any social capital	19.6%	5.3%	16.8%	2.3%	11.9%	14.5%	6.7%	12.4%	4.2%	7.1%	9.1%
Sample (n)	1083	262	1345	695	2040	760	283	1043	1875	2918	4958

Note: Refer to text for levels of significance

Given the slightly higher average age of members in core households, one would expect core household members to be more likely to receive social transfers (especially old-age pensions). As expected, core household members are significantly more likely to receive an old-age pension (or any other form of social grant) than are dynasty household members. Whereas 7.7% of the members of core households received an old-age pension in 2004, only 1.1% of individuals in dynasty households received one ($p<0.001$). Similarly, whereas 10.1% of individuals in core households received other forms of social transfer, these were only received by 6.4% of the individuals in dynasty households ($p<0.001$). Combining the old-age pension with other forms of transfer results in the "any social transfer" category, which shows that a total of 17.6% of the individuals in core households received some form of social transfer from government compared with only 7.8% of the individuals in dynasty households ($p<0.001$).

Core individuals (1993 & 1998) in core households are most likely to receive an old-age pension. A total of 10.6% of core individuals in core households received an old-age pension, this being significantly higher than the 1.1% recorded for core members of dynasty households ($p<0.001$). A possible explanation is the significant difference in the average ages of core individuals in core households compared with those in dynasty households (as indicated in Table 6.1). Although a higher percentage of core individuals in core households also receive other forms of social transfer (10.6%) than do core individuals in dynasty households (9.8%), the difference is not statistically significant ($p=0.270$). If one combines the different sources of social transfer, one sees that a significantly larger proportion of the core individuals in core households (21.0%) than the core individuals in dynasty households (10.8%) receives social transfers ($p<0.001$).

It further seems that core individuals in dynasty households are more likely to receive social grants than are non-core individuals (except for the old-age pension). There is no significant difference between the proportion of core individuals (1.1%) and the proportion of non-core individuals (1.6%) in dynasty households who receive an old-age pension ($p=0.150$). Despite this, a significantly larger number of core individuals receive other forms of social grant (9.8%) than do the 4.5% of non-core individuals in dynasty households ($p<0.001$). The result is that, compared with non-core individuals (6.1%), a significantly larger proportion of core individuals (10.8%) in dynasty households receives some form of social government transfer ($p<0.001$). Again, it may be concluded that core household members are more likely to receive social transfers than are dynasty households, while core individuals in the dynasty households are also more likely to receive a government grant than are non-core individuals in dynasty households.

Table 6.6: **Social transfers (grants) in core and dynasty households**

Social transfers	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Old-age pension	12.7%	1.9%	10.6%	2.0%	7.7%	1.1%	1.1%	1.1%	1.6%	1.1%	4.0%
Other social transfers	11.4%	7.6%	10.6%	8.9%	10.1%	11.3%	5.7%	9.8%	4.5%	6.4%	7.9%
Any social transfer	23.7%	9.5%	21.0%	10.9%	17.6%	12.4%	6.7%	10.8%	6.1%	7.8%	11.8%
Sample (n)	1083	262	1345	695	2040	760	283	1043	1875	2918	4958

Note: Refer to text for levels of significance

At first glance, it would appear that more dynasty household members (37.4%) than core household members (35.8%) participate in the labour force (Table 6.7). These differences are however not statistically significant (p=0.138). Despite similar labour force participation rates by core and dynasty household members, individuals in core households have a significantly higher unemployment rate (59.4%) than do individuals in dynasty households (52.3%; p=0.002). This may in part be due to the fact that dynasty household members are enjoying the availability of more employment opportunities after the apartheid era or to the fact that they are slightly younger and better educated than core household members.

Table 6.7 compares core individuals (1993 & 1998) in core and dynasty households. It indicates similar labour-force participation rates for these individuals (44.2% and 46.9%, respectively: p=0.106). Despite similar participation rates, core individuals in dynasty households (48.3%) have a significantly lower unemployment rate than do core individuals in core households (57.8%: p=0.001). Again, this emphasises the lower unemployment rates experienced in dynasty households. It also emphasises the fact that core individuals in dynasty households are more likely to be employed than their counterparts in core households, probably due to their higher levels of education.

If one focuses only on dynasty households, it would once again seem that core individuals tend to outperform non-core individuals. A significantly higher percentage of core individuals (46.9%) than non-core individuals (32.1%) participate in the labour force (p<0.001). Although still high, 48.3% of the core individuals in dynasty households are unemployed – a significantly lower figure than the 55.6% of unemployed non-core individuals in dynasty households (p=0.009). Apparently, dynasty households on average experience significantly lower levels of unemployment than do core households and, within dynasty households, the core individuals again experience significantly lower levels of unemployment than non-core individuals (though levels of unemployment are nevertheless still very high). Apparently, employed core members are those most likely to have relocated to dynasty households.

Table 6.7: **Employment in core and dynasty households**

Employment status	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Average	
	1993	1998	Average	2004	Average	1993	1998	Average	2004		
Labour-force participation	51.5%	14.1%	44.2%	19.6%	35.8%	54.5%	26.5%	46.9%	32.1%	37.4%	36.7%
Not in labour force	48.5%	85.9%	55.8%	80.4%	64.2%	45.5%	73.5%	53.1%	67.9%	62.6%	63.3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unemployment rate	57.2%	67.6%	57.8%	66.2%	59.4%	49.0%	44.0%	48.3%	55.6%	52.3%	55.2%

Note: Only working age population included: 15-64 years of age. Refer to text for levels of significance.

6.2 Household structure in core and dynasty households

Table 6.8 depicts the distribution of household members by household type in terms of their relationship with the 1993 household head. According to Table 6.8, core households primarily host sons/daughters and grandchildren of the 1993 household head. On average, 28.4% of core households consist of sons/daughters of the 1993 household head as against 23.5% in the dynasty households ($p<0.001$). Core households also house more grandchildren (41.1%) of the 1993 heads of household than do dynasty households (32.2%; $p<0.001$). Conversely, dynasty households host more other relatives (21.8%) or non-relatives (22.4%) of the 1993 household head than do core households – 12.3% and 2.4%, respectively ($p<0.001$).

When one compares the movement of core individuals (1993 & 1998), it would seem that the 1993 household head and his/her wife/husband/partner are those who stay in the core household rather than move to a split dynasty household ($p<0.001$). Most core members in the core households are sons or daughters of the 1993 household head (36.4%). This figure is still significantly lower than the 44.2% of sons/daughters (core individuals) who live in the dynasty households. This is followed by the 32.6% of grandchildren of the 1993 household head who stay in a core household compared with the 37.2% ($p<0.001$) of grandchildren of the 1993 head who move to dynasty households. Dynasty households are therefore mostly represented by core individuals who are sons/daughters, grandchildren or other relatives of the 1993 household head.

Non-core individuals in dynasty households are mostly represented by non-relatives of the 1993 heads of household (34.6%), while only 0.6% of the core individuals in the dynasty

households are not related to the 1993 household head. It may therefore be concluded that, although dynasty households still comprise many core and non-core individuals who are related to the 1993 household head, a large proportion is not related to the 1993 household head but related to other core or non-core members of the dynasty households.

Table 6.8: **Relationship to the 1993 household head: non-relatives included**

Relationship to 1993 household head	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Head	16.5%		13.3%	0.3%	8.9%					0.0%	3.7%
Wife/husband/partner	12.1%	1.5%	10.0%	1.2%	7.0%	0.3%		0.2%	0.1%	0.1%	3.0%
Son/daughter	40.3%	20.6%	36.4%	12.8%	28.4%	51.7%	24.0%	44.2%	12.0%	23.5%	25.5%
Grandchild	26.1%	59.2%	32.6%	57.6%	41.1%	34.3%	44.9%	37.2%	29.4%	32.2%	35.9%
Other relatives	4.7%	18.3%	7.4%	21.9%	12.3%	13.3%	30.0%	17.8%	24.0%	21.8%	17.9%
Non-relatives	0.3%	0.4%	0.3%	6.3%	2.4%	0.4%	1.1%	0.6%	34.6%	22.4%	14.2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sample (n)	1083	262	1345	695	2040	760	283	1043	1875	2918	4958

Note: Refer to text for levels of significance

Since 22.4% of dynasty household members are not related to the original 1993 household head, Table 6.9 summarises the household composition of core and dynasty households, non-relatives excluded. About one-third of both core (29.1%) and dynasty (30.3%) households consist of sons/daughters of the 1993 household head (p=0.208). Most members in both core (42.1%) and dynasty households (45.0%) are grandchildren of the 1993 heads of household (p=0.370). There are no significant differences in any of the above between core and dynasty households. The only difference lies in the proportion of people in other ways related to the 1993 household head and who live in core and dynasty households. As is to be expected, dynasty households have a significantly larger proportion of people in other ways related to the 1993 household head (28.1%) than do core households (12.6%; p<0.001).

A comparison of core individuals (1993 & 1998) in core and in dynasty households reveals that most 1993 household heads are, as is to be expected, still members of these original core households (13.4%). Moreover, the wives/husbands or partners of the 1993 head live in core households (10.1%) rather than in dynasty households (0.2%; p<0.001). Also, whereas, significantly, the core individuals in dynasty households are preponderantly sons or daughters

(44.5%) and grandchildren (37.4%) of the 1993 household head, this pattern as regards core individuals in core households is less pronounced (respectively 36.5%; p<0.001 and 32.7%; p=0.009). In dynasty households a significantly larger proportion of core members are other relatives of the 1993 household head (17.9%) than is the case in core households (7.4%; p<0.001).

It is evident that compared with the sons or daughters of non-core individuals (18.3%), a significantly larger proportion of core individuals in dynasty households are the sons or daughters of the 1993 heads of household (44.5%; p<0.001. The majority of non-core individuals in dynasty households are either grandchildren (45.0%) or other relatives (36.6%) of the 1993 household head compared with the 37.4% and 17.9% respectively of core individuals (p<0.001). It can therefore be concluded, as is the case in table 6.8 above, that the majority of both the core and the dynasty households are sons or daughters or the grandchildren of the 1993 heads of household, while dynasty households also include a significantly high proportion of other relatives of the 1993 household head.

Table 6.9: **Relationship to the 1993 household head: non-relatives excluded**

Relationship to 1993 household head	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Head	16.6%		13.4%	0.3%	9.1%						4.3%
Wife/husband/partner	12.1%	1.5%	10.1%	1.2%	7.2%	0.3%		0.2%	0.2%	0.2%	3.5%
Son/daughter	40.4%	20.7%	36.5%	13.7%	29.1%	51.9%	24.3%	44.5%	18.3%	30.3%	29.7%
Grandchild	26.2%	59.4%	32.7%	61.4%	42.1%	34.5%	45.4%	37.4%	45.0%	41.5%	41.8%
Other relatives	4.7%	18.4%	7.4%	23.4%	12.6%	13.3%	30.4%	17.9%	36.6%	28.1%	20.8%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sample (n)	1080	261	1341	651	1992	757	280	1037	1227	2264	4256

Note: Refer to text for levels of significance

Given the low proportion of the 1993 household heads and/or their partners who are considered members of the households, Table 6.10 and Table 6.11 exclude these groups from the analysis. Analysis of this subsample reveals that core households have, on average, a significantly larger proportion of sons and daughters (33.7%) and grandchildren (48.8%) than do dynasty households (p<0.001) (respectively 23.5% and 32.3%. Conversely, dynasty households have a significantly larger proportion of other relatives (19.1%) than do core

households (14.6%; p<0.001). As indicated above, dynasty households mostly comprise of non-relatives of the 1993 household head (22.4% versus 2.8%; p<0.001). One may therefore conclude that dynasty households seem to have formed around the sons/daughters and grandchildren of the 1993 household head.

Core individuals in core households are mostly either the sons and/or daughters (47.5%) or the grandchildren of the 1993 household head (42.5%). These numbers are significantly higher than the proportion of core individuals in the dynasty households who are either sons and/or daughters (44.3%; p=0.075) or grandchildren (37.3%; p=0.009) of the 1993 household head. A significantly large proportion of core individuals in dynasty households is otherwise related to the 1993 head (17.9%) than is the case with core individuals (9.6%; p<0.001).

The majority of core individuals in dynasty households are either the sons or daughters (44.3%) or the grandchildren of the 1993 household head (37.3%). These proportions are significantly larger than the 12.0% of children of the 1993 household head who are non-core members (p<0.001) or the 29.5% non-core members who are grandchildren of the 1993 household head (p<0.001). Non-core members more often tend to represent other relatives (24.0%) or even non-relatives (34.6%) of the 1993 household head than is the case with the proportions of core individuals (17.9% & 0.6%; p<0.001). One may therefore conclude that while core households are composed mostly of either the sons and daughters or the grandchildren of the 1993 household head, dynasty households have significantly more other relatives and non-relatives as household members than do core households.

Table 6.10: **Relationship to the 1993 household head: non-relatives included**

Relationship to 1993 household head	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Son/daughter	56.4%	20.9%	47.5%	13.0%	33.7%	51.9%	24.0%	44.3%	12.0%	23.5%	27.3%
Grandchild	36.6%	60.1%	42.5%	58.4%	48.8%	34.4%	44.9%	37.3%	29.5%	32.3%	38.4%
Other relatives	6.6%	18.6%	9.6%	22.2%	14.6%	13.3%	30.0%	17.9%	24.0%	21.8%	19.1%
Non-relatives	0.4%	0.4%	0.4%	6.4%	2.8%	0.4%	1.1%	0.6%	34.6%	22.4%	15.2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sample (n)	773	258	1031	685	1716	758	283	1041	1873	2914	4630

Note: Refer to text for levels of significance

Table 6.11 below also excludes from the analysis the household members not related to the 1993 household head. This subgroup analysis indicates that core households have, on average, a significantly larger proportion of the sons and daughters of the 1993 household head (34.7%) than do dynasty households (30.3%; p=0.002). Grandchildren of the 1993 household head are also better represented in core households (50.2%) than in dynasty households (41.6%; p<0.001). A total of 28.1% of dynasty household members are other relatives of the 1993 household head. This is significantly higher (p<0.001) than the 15.1% of other relatives who live in core households.

A comparison of core individuals in core and dynasty households shows most core individuals in core households to be either the sons or daughters (47.7%) or the grandchildren (42.7%) of the 1993 household head, which is significantly higher than the 44.5% of sons or daughters or the 37.5% of grandchildren of the 1993 household head living in dynasty households (p=0.081 & p=0.009). In dynasty households, other relatives (18.0%) of the 1993 household head constitute a significantly larger proportion of core individuals than that of the proportion of core individuals living in core households (9.6%; p<0.001).

As in Table 6.9, non-core individuals in dynasty households are mostly grandchildren (45.1%) or other relatives (36.7%) of the 1993 household head. The proportions are however significantly smaller for grandchildren (37.5%) or other relatives (37.5%) when it comes to core individuals in dynasty households (p<0.001). As indicated above, many core and non-core individuals are grandchildren of the 1993 household head. Whereas core individuals living in dynasty households are mostly sons or daughters (44.5%) of the 1993 heads of household, only 18.3% of the non-core individuals living in dynasty households are sons or daughters of the 1993 household head (p<0.001). It may therefore be concluded that both core and dynasty households have many grandchildren of the 1993 household head living in these households and that especially dynasty households also include people otherwise related to the 1993 household head.

Table 6.11: **Relationship to the 1993 household head: non-relatives excluded**

Relationship to 1993 household head	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Son/daughter	56.6%	21.0%	47.7%	13.9%	34.7%	52.1%	24.3%	44.5%	18.3%	30.3%	32.2%
Grandchild	36.8%	60.3%	42.7%	62.4%	50.2%	34.6%	45.4%	37.5%	45.1%	41.6%	45.3%
Other relatives	6.6%	18.7%	9.6%	23.7%	15.1%	13.4%	30.4%	18.0%	36.7%	28.1%	22.6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sample (n)	770	257	1027	641	1668	755	280	1035	1225	2260	3928

Note: Refer to text for levels of significance

6.3 Intra-household composition

In what follows, I focus on household composition in respect of how the members are related to the 1993 household head. The purpose is to determine the intra-household structure given the levels of education, remittance flows, social transfers and employment of household members in terms of their relationship to the original household head.

Table 6.12 below indicates the mean, the median and the interquartile ranges of age by the relationship household members have with the 1993 heads of household. There is no significant difference in the average age of a wife/husband of the 1993 head of household, whether they live in a core or dynasty household ($p=0.184$). Sons or daughters of the 1993 household head seem to be younger in core households (29.3 years) than in dynasty households (32.5 years; $p<0.001$). This also seems to be the case as regards grandchildren (11.6 years), other relatives (20.1 years) and non-relatives (23.2 years) in core households. In dynasty households the respective ages are 12.5 years, 22.2 years and 25.7 years. Note however that only the difference between the average ages of household members otherwise related to the 1993 household head is statistically significant ($p=0.078$). This is unanticipated in that one would expect the average ages in core households to be higher than the average ages of individuals in dynasty households. Given this, one may conclude that older individuals are more likely to have migrated to dynasty households.

Comparison of core individuals in both core and dynasty households produce similar results. The average ages of core sons or daughters (31.8 years), grandchildren (16 years) and other

non-relatives (35.7 years) are higher in dynasty households than in core households, although only the age difference for sons and daughters is statistically significant (p=0.007). The average age of other core relatives is significantly higher for those living in core households (26.6 years) than for those living in dynasty households (21.7 years; p=0.009).

An investigation of the differences in average age between core individuals and non-core individuals reveals significant differences only in respect of sons or daughters and grandchildren. The average age of core individuals living in dynasty households and who are also a son or daughter of the 1993 household head is 31.8 years, which is significantly lower than the 34.2 years in the case of non-core individuals (p=0.006). The results for grandchildren of the 1993 heads of household are quite different in that the average age of 16 years for core individuals is significantly higher than the 10.1 years for non-core grandchildren (p<0.001).

Table 6.12: Age and relationship to the 1993 household head

Relationship to household head	Core households					Dynasty households					Total
						Core individuals			Non-core individuals	Total	
	1993	1998	Average	2004	Total	1993	1998	Average	2004		
Household head – mean	62.3	-		42.5	62.1	-	-	-	-	-	
Median	62.0	-		42.5	62.0	-	-	-	-	-	
IQR	54-72	-		30-55	54-72	-	-	-	-	-	
Wife/partner of head – mean	57.6	47.5	57.3	47.6	56.8	60.0	-	60.0	42.5	51.3	56.6
Median	56.0	39.0	56.0	43.5	56.0	60.0	-	60.0	42.5	56.0	56.0
IQR	49-66	37.5-57.5	49-66	39-57.5	49-65	56-64	-	56-64	29-56	42.5-60	49-65
Son/daughter – mean	30.8	23.2	29.9	25.9	29.3	31.1	32.5	31.8	34.2	32.5	31.1
Median	29.0	17.5	28.5	28.0	28.0	32.0	38.5	32.0	34.0	33.0	31.0
IQR	22-40	9-34	20-40	17-36	20-39	27-37	25-47	27-38	28-42.5	27-39	23-39
Grandchild – mean	18.2	11.1	15.7	7.2	11.6	18.6	10.7	16.0	10.1	12.5	12.1
Median	17.0	9.0	14.0	5.0	11.0	16.0	9.0	14.0	7.0	11.0	11.0
IQR	13-22	8-13	10-20	2-10	5-17	13-23	8-12	11-19.5	3-16	6-18	5-17
Other relatives	30.7	22.3	26.6	15.9	20.1	24.1	18.8	21.7	22.4	22.2	21.6
Median	21.0	13.5	19.0	9.0	14.0	18.0	15.0	17.0	15.0	16.0	15.0
IQR	16-41	8.5-29	13-36	3-21	5-28	14-32	9-25	11-29	6-35	8-32.5	7-31
Non-relative	16.3	53.0	25.5	23.0	23.2	44.7	26.7	35.7	25.6	25.7	25.5
Median	17.0	53.0	18.0	21.0	20.5	46.0	31.0	37.0	20.0	20.0	20.0
IQR	13-19	53-53	15-36	14.5-30	14.5-30	19-69	6-43	19-46	10-37	10-37	10-37

Note: Refer to text for levels of significance

Table 6.13 compares the levels of education of core and non-core individuals in dynasty households in terms of their relationship with the 1993 household head. The focus is only on dynasty households to determine how core and non-core members contribute to the average levels of education in the dynasty household. Table 6.2 has already indicated that in dynasty households, significantly more non-core individuals than core individuals, have no education. Table 6.13 elaborates on this conclusion by indicating that, of the 730 non-core individuals with no education, the majority are grandchildren (42.9%) of the 1993 household head. An even larger proportion of the 146 core individuals with no education is grandchildren (50.7%; $p<0.001$). A significantly larger proportion of the core individuals with no education is sons or daughters of the 1993 household head (19.2%) compared with the non-core members (4.7%; $p<0.001$). While 26.3% of the non-core individuals with no education are not related to the 1993 household head, this is true of only 1.4% of the core members ($p<0.001$). Although 31.4% of the core individuals with primary education are sons or daughters of the 1993 household head, the same can be said of only 9.3% of the non-core individuals ($p<0.001$). Almost half of the core individuals with only primary education (47.6%) are grandchildren of the 1993 household head, while only 23.5% of the non-core individuals are grandchildren of the 1993 household head ($p<0.001$). Again, compared with a mere 0.3% of core individuals, the majority of non-core individuals with only primary education (42.3%) are not related to the 1993 household head ($p<0.001$). In comparison with their non-core counterparts, a significantly larger proportion of core individuals than non-core individuals has secondary education (as indicated in Table 6.2 & Table 6.3). Core individuals with secondary education are significantly more often represented by sons and daughters of the 1993 household head (48.6%) than are non-core individuals with secondary education (16.6%; $p<0.001$). A higher percentage of core individuals with secondary education are grandchildren of the 1993 household head (33.8%) than is the case with non-core individuals (23.4%; $p<0.001$). The largest proportion of non-core household members with a secondary education is not related to the 1993 household head (35.2%), compared with only 0.6% of the core individuals ($p<0.001$).

Unexpectedly (as indicated in Table 6.2 & Table 6.3), core individuals are more likely to have a Grade 12 or higher level of education than non-core individuals. Of these core individuals, more than two-thirds (70.6%) are sons or daughters of the 1993 heads of household, which

is significantly more than the 31.5% of non-core individuals with Grade 12 or a higher level of education (p<0.001). A larger proportion of the better-educated core members is grandchildren (20.6%) than is the case with non-core members (12.6%; p<0.001). As with the other levels of education, non-core individuals with a Grade 12 or higher level of education are mostly represented by individuals not related to the 1993 household head so that 39.9% of non-core individuals and only 0.5% of core members are non-relatives of the 1993 household head (p<0.001). To summarise: Human capital in core households is concentrated in the sons and daughters and grandchildren of the 1993 heads of household, while human capital in non-core households mostly lies with non-relatives of the 1993 household head.

Table 6.13: **Dynasty household member education, by relationship to the 1993 household head**

Relationship to 1993 household head	No education		Primary		Secondary		Grade 12 and higher	
	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members
Son/daughter	19.2%	4.7%	31.4%	9.3%	48.6%	16.6%	70.6%	31.5%
Grandchild	50.7%	42.9%	47.6%	23.5%	33.8%	23.4%	20.6%	12.6%
Other relatives	28.8%	26.2%	20.7%	24.9%	17.1%	24.8%	8.3%	16.0%
Non-relatives	1.4%	26.3%	0.3%	42.3%	0.6%	35.2%	0.5%	39.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Sample (n)	146	730	309	430	352	423	218	238
Fisher's exact	0.000		0.000		0.000		0.000	

Note: Refer to text for levels of significance

Comparison of core and non-core household members older than 23 years of age by their relationship with the 1993 household head reveals similar results (Table 6.14). Whereas core individuals with no education are mainly sons or daughters of the 1993 household head (57.1%), only 17% of the non-core individuals are sons/daughters of the 1993 household head (p<0.001). Although the difference is not statistically significant (p>0.100), around 30% of both core and non-core individuals with no education constitute other types of relatives of the 1993 household head. Again, as regards non-core individuals, the majority of individuals with no education are not related to the 1993 household head (49.0%) – significantly higher than the 2.9% for core individuals (p<0.001).

As for individuals with only primary education, 72.2% of core individuals are either sons or daughters of the 1993 household head, while only 1.1% are not related to the 1993 household head. In the case of non-core individuals with only primary education, 19.8% are sons or daughters of the 1993 household head ($p<0.001$), while 46.1% ($p<0.001$) are not related to the 1993 household head.

As regards core individuals with secondary education, the majority are sons or daughters of the 1993 household head (74.2%), compared with only 19.8% in the case of the non-core individuals ($p<0.001$). More than a third (33.7%) of non-core individuals with a secondary education as against only 0.5% of the core individuals are not related to the 1993 household head ($p<0.001$).

Table 6.3 has already indicated a significantly larger proportion of core individuals with a Grade 12 or higher level of education (37.4%) as against the 28.9% of non-core individuals ($p<0.001$). Table 6.13 above indicates that the majority of core individuals with a Grade 12 or higher level of education are predominantly sons or daughters of the 1993 household head (78.1%). Conversely, this is the case in only 38.8% of non-core individuals ($p<0.001$). Of the core individuals with a Grade 12 or higher level of education, only 0.5% are not related to the 1993 household head, compared with 39.4% of non-core individuals ($p<0.001$). A conclusion, similar to the one made above, can be made here: Core human capital is dominated by the sons or daughters and grandchildren of the 1993 household head, while non-core human capital is embedded in the sons or daughters and non-relatives of the 1993 household head.

Table 6.14: **Dynasty household member education, by relationship to the 1993 household head (>23 years)**

Relationship to 1993 household head	No education		Primary		Secondary		Grade 12 and higher	
	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members
Son/daughter	57.1%	17.0%	72.2%	19.8%	74.2%	30.1%	78.1%	38.8%
Grandchild	8.6%	2.0%	10.0%	4.2%	13.4%	13.0%	15.5%	7.5%
Other relatives	31.4%	32.0%	16.7%	29.9%	11.8%	23.3%	5.9%	14.4%
Non-relatives	2.9%	49.0%	1.1%	46.1%	0.5%	33.7%	0.5%	39.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Sample (n)	35	100	90	167	186	193	187	188
Fisher's exact	0.000		0.000		0.000		0.000	

Note: Refer to text for levels of significance

Similar conclusions can be drawn in respect of remittances (Table 6.15). For both inward (72.7%) and outward remittances (80.2%), the core individuals are mostly the sons or daughters of the 1993 household head, which is significantly higher than is the case for non-core individuals (26.1% and 35.7%, respectively; $p<0.001$). As regards inward and outward remittances, the majority of core individuals are the sons/daughters of the 1993 household head. This is significantly higher than the 32.0% recorded for non-core individuals ($p<0.001$). In the case of non-core individuals, those sending or receiving remittances are predominantly neither related to nor otherwise related to the 1993 household head.

Table 6.15: Dynasty household remittances, by the relationship to the 1993 household head

Relationship to 1993 household head	Inward remittances		Outward remittances		Inward OR outward remittances		Inward & outward remittances	
	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members
Son/daughter	72.7%	26.1%	80.2%	35.7%	76.7%	32.0%	85.7%	20.0%
Grandchild	12.1%		14.3%	3.6%	13.3%	2.1%	14.3%	
Other relatives	15.2%	41.3%	5.5%	19.6%	10.0%	29.9%		20.0%
Non-relatives		32.6%		41.1%		36.1%		60.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Sample (n)	66	46	91	56	150	97	7	5
Fisher's exact	0.000		0.000		0.000		0.019	

Note: Refer to text for levels of significance

Core individuals who are related to the 1993 household head play a more significant role in the contribution of social capital to dynasty households than do non-core individuals (Table 6.16). The main contributors of social capital among non-core individuals are also sons/daughters followed by non-relatives of the 1993 household head. Since only a few individuals have bonding social capital, these differences are not discussed here. In respect of bridging social capital, core individuals are mainly the sons or daughters of the 1993 household head and they contribute 86.1% to the total bridging social capital of core individuals. This is significantly higher than the 37.8% of the non-core individuals who are also the sons/daughters of the 1993 household head ($p<0.001$). Similar results are obtained when bonding and bridging social capital are combined. Again, 85.3% of the total social capital of core individuals comes from the contribution of the sons/daughters of the 1993 household head and is significantly higher than that contributed by non-core sons/daughters (36.7%; $p<0.001$). The rest of the social capital of non-core individuals is contributed by non-relatives (27.9%), grandchildren (20.3%) and by other relatives (15.2%). It can thus be concluded that social capital in dynasty households is contributed by both core individuals and non-core individuals. Social capital, irrespective of core and non-core members, is concentrated mainly in one generation, namely the sons and daughters of the 1993 household head.

Table 6.16: **Dynasty household social capital, by the relationship to the 1993 household head**

Relationship to 1993 household head	Bonding social capital		Bridging social capital		Any social capital	
	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members
Son/daughter	87.5%	30.0%	86.1%	37.8%	85.3%	36.7%
Grandchild	12.5%	40.0%	13.9%	18.9%	14.7%	20.3%
Other relatives		20.0%		14.9%		15.2%
Non-relatives		10.0%		28.4%		27.9%
Total	100%	100%	100%	100%	100%	100%
Sample (n)	16	10	122	74	129	79
Fisher's exact	0.005		0.000		0.000	

Note: Refer to text for levels of significance

Table 6.17 summarises the social transfers received by core and non-core individuals in dynasty households in terms of their relationship with the 1993 household head. Although the proportion of individuals who receives the old-age pension is very low, one must

remember that the focus is on dynasty households, whose members are, on average, 22.34 years old (median: 18 years, IQR: 9–33 years). Few dynasty household members do thus receive the old-age pension (n=40). There is a much higher number of dynasty household members who receive other forms of social grant (n=186). Of these, the core household individuals are more likely to receive a social grant (n=102) than are the non-core individuals (n=84). In the case of core individuals, most are the sons/daughters (72.6%) or grandchildren (21.6%) of the 1993 household head. The proportion of core individuals who are sons or daughters of the 1993 household head (72.6%) is significantly larger than the 15.5% of the non-core individuals. The proportion of non-core grandchildren receiving other forms of social transfer (45.2%) is significantly larger than the 21.6% of core members ($p<0.001$).

Even if one combines all the social transfers received in one category, namely “any grant”, there are still relatively small numbers of individuals who receive a social transfer from the South African government. As indicated in Table 6.6 above, 7.8% of dynasty individuals (core and non-core individuals) receive some kind of social transfer from government. In the case of core individuals, most of them again are the sons or daughters of the 1993 household head (73.2%), which is significantly more than the 13.2% of the non-core members ($p<0.001$). This is followed by grandchildren (20.5%), which is significantly lower than the 33.3% of non-core individuals who receive social transfers. A substantial proportion of non-core individuals is not related to the 1993 household head (30.7%), which is significantly larger than the proportion of core members not related to the 1993 household head (1.8%; $p<0.001$). One may thus infer that core individuals who are the sons/daughters or grandchildren of the 1993 household head are the most prominent receivers of social transfers, while non-core individuals who receive social transfers are mainly grandchildren or non-relatives of the 1993 household head.

Table 6.17: **Social grants in dynasty households, by relationship to the 1993 household head**

Relationship to 1993 household head	Old-age pension		Other grants		Any grant		
	Core members	Non-core members	Core members	Non-core members	Core members	Non-core members	Total
Son/daughter	80.0%	6.7%	72.6%	15.5%	73.2%	13.2%	42.9%
Grandchild	10.0%		21.6%	45.2%	20.5%	33.3%	27.0%
Other relatives		30.0%	4.9%	20.2%	4.5%	22.8%	13.7%
Non-relatives	10.0%	63.3%	1.0%	19.1%	1.8%	30.7%	16.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Sample (n)	10	30	102	84	112	114	226
Fisher's exact	0.000		0.000		0.000		

Note: Refer to text for levels of significance

Table 6.18 indicates the levels of labour-force participation and unemployment for core and non-core individuals in dynasty households given their relationship with the 1993 household head. Among core members, the majority of individuals participating in the labour force are either the sons/daughters of the 1993 household head (67.9%) or the grandchildren (18.4%) of the 1993 household head. These numbers are significantly higher than the 26.7% of non-core members who are sons/daughters or the 13.6% who are grandchildren of the 1993 household head ($p<0.001$). The majority of non-core individuals in the labour force are not related to the 1993 household head (39.0%).

The largest proportion of unemployed core members in dynasty households is sons or daughters of the 1993 household head. Of the unemployed core members, 61.4% are sons or daughters of the household head – significantly more than the 18.2% of unemployed non-core sons/daughters ($p<0.001$). Though 45.4% of unemployed non-core individuals are not related to the 1993 household head, only 0.9% of the core members are not related to the 1993 household head ($p<0.001$). To sum up: Though core household members who are sons and daughters of the 1993 household head seem to have been more active in the labour force, they also seem to have made the biggest contribution to the unemployment rate for core members. Among non-core members, non-relatives of the 1993 household head make the highest contribution to the unemployment rate.

Table 6.18: **Employment in dynasty households, by relationship to the 1993 household head**

Relationship to head	Labour-force participation		Unemployment rate	
	Core members	Non-core individuals	Core members	Non-core individuals
Son/daughter	67.9%	26.7%	61.4%	18.2%
Grandchild	18.4%	13.6%	22.0%	17.6%
Other relatives	12.9%	20.6%	15.7%	18.8%
Non-relatives	0.8%	39.0%	0.9%	45.4%
Total	100%	100%	100%	100%
Sample (n)	489	602	236	335

Note: Only working age population included: 15-64 years of age. Refer to text for levels of significance.

6.4 Intra-household composition of poor and non-poor dynasty households

The following section analyses the poverty in dynasty households by focusing on the household structure of dynasty households. Table 6.19 indicates the poverty status in dynasty households by the levels of education of household members. Table 6.19 confirms that higher levels of education are associated with lower levels of poverty. Compared with the 33.5% of individuals with primary education, as high as 40.2% of individuals with no schooling live in poor households. As for individuals with secondary education, 27.7% live in poor households in comparison with only 14.7% of individuals with a Grade 12 level of education. Only 1.1% of individuals with post-secondary education live in poor households. It is thus safe to conclude that 98.9% of all individuals with a post-secondary education live in non-poor households. If one combines individuals with a Grade 12 level of education and individuals with a higher level of education, the results confirm this conclusion and indicate that whereas only 12.1% of these highly educated individuals live in poor households, 87.9% of them live in non-poor dynasty households ($p<0.001$). From the above it is therefore apparent that a significantly larger proportion of individuals with higher levels of education lives in non-poor households than do individuals with low levels of education who are primarily living in poor households.

Table 6.19, continuing the focus on poverty in dynasty households, splits poor and non-poor household individuals between core and non-core individuals in terms of levels of education. As indicated below, 40.2% of dynasty household members with no education live in poor households and 79.9% of these are non-core individuals in comparison with only 20.1% of

core individuals (p<0.001). Similarly, poor individuals with only primary education are significantly more represented by non-core members (56.1%) than by core members (44.0%; p<0.001). It seems that individuals in poor households with secondary, Grade 12 or higher levels of education are also more frequently represented by non-core individuals. The differences between core and non-core individuals are however not statistically significant (p>0.100).

In non-poor households, the individuals with no education are also significantly more likely to be non-core members (85.4%) rather than core members (14.6%; p<0.001). Similar results are shown for non-poor individuals with primary and secondary education. Of the non-poor individuals with primary education, 59.4% are non-core individuals, of those with secondary education, 54.3% are non-core individuals, while 40.7% with primary education and 45.7% with secondary education are core individuals (p<0.001). Combined, a marginally larger proportion of individuals who live in non-poor households and have obtained a Grade 12 or higher level of education is core members (50.4%) rather than non-core members (49.6%; p<0.001). To conclude: It would therefore seem that non-core members, even those with higher levels of education, are generally more likely to live in poorer households than are core members, while core members, especially those with higher levels of education, are more likely than non-core household members to live in non-poor households.

Table 6.19: **Education and poverty in dynasty households**

Education	Non-poor				Poor			
	Core members	Non-core individuals	Total	Sample (n)	Core members	Non-core individuals	Total	Sample (n)
No schooling	14.6%	85.4%	59.8%	526	20.1%	79.9%	40.2%	353
	0.000				0.000			
Primary schooling	40.7%	59.4%	66.5%	492	44.0%	56.1%	33.5%	248
	0.036				0.000			
Secondary schooling	45.7%	54.3%	72.3%	560	44.7%	55.4%	27.7%	215
	0.000				0.000			
Grade 12	52.9%	47.1%	85.3%	314	29.6%	70.4%	14.7%	54
	0.000				0.321			
Post-secondary schooling	41.4%	58.6%	98.9%	87		100.0%	1.1%	1
	0.233				0.665			
Grade 12 and more	50.37%	49.63%	87.9%	401	29.09%	70.91%	12.1%	55
	0.000				0.311			

Note: Refer to text for levels of significance

One would expect individuals who receive remittances to be less likely to live in poorer households than those who do not receive remittances. Table 6.20 confirms this a priori expectation in that it shows that 84.1% of individuals who receive remittances are living in non-poor households and only 15.9% are residing in poor households ($p<0.001$). This result contradicts the findings of Table 5.17 which analysed household-level remittances compared to Table 6.20 which looks at individuals receiving the remittances. One may therefore wonder whether (Table 5.17) poorer households are more likely to receive remittances (since remittances may be targeted at poor households). This emphasises the methodological challenges in investigating the links between remittances and poverty (including reverse causation). A total of 60% of the members in non-poor households who receive remittances are core household members, while 40% are non-core members ($p<0.001$). There is no statistically significant difference between the proportions of core and non-core individuals residing in poor households who receive remittances. ($p=0.101$).

As expected, individuals in non-poor households are more likely to send remittances (96.6%) than are individuals living in poor households (3.4%; $p>0.001$). This is due to the availability of funds in the household. While 62.7% of core individuals residing in non-poor households sent outward remittances, only 37.3% of non-core individuals did likewise ($p<0.001$). Given the limited number of individuals from poor households who send outward remittances, the differences are not statistically significant.

If inward and outward remittances are combined, 91.1% of those sending or receiving remittances are non-poor whereas 8.9% are from poor households ($p<0.001$). Again, core individuals are more likely to be involved in remittances (62.0%) than are non-core individuals (38.1%: $p<0.001$). The limited number of poor individuals involved in remittance behaviour has resulted in insignificant differences between the core and poor non-core individuals living in poor households. One may thus conclude that individuals from non-poor households are most likely to be involved in remittance behaviour (either inward or outward), while core individuals again are more likely than non-core individuals to be involved in remittance behaviour (inward or outward).

Table 6.20: **Remittances and poverty in dynasty households (core and non-core individuals)**

Remittances	Non-poor				Poor			
	Core members	Non-core individuals	Total	Sample (n)	Core members	Non-core individuals	Total	Sample (n)
Inward	60.0%	40.0%	84.1%	95	50.0%	50.0%	15.9%	18
	0.000				0.101			
Outward	62.7%	37.3%	96.6%	142	40.0%	60.0%	3.4%	5
	0.000				0.535			
Inward/outward	62.0%	38.1%	91.1%	226	45.5%	54.6%	8.9%	22
	0.000				0.153			
Inward & outward	54.6%	45.5%	91.7%	11	100.0%	-	8.3%	1
	0.182				0.331			

Note: Refer to text for levels of significance

Table 6.21 summarises social capital and poverty in dynasty households. Only a limited number of individuals in dynasty households have bonding social capital (n=26), which has resulted in insignificant differences between members in non-poor and those in poor households. It also has resulted in insignificant differences between core and non-core household members living in poor households. Of the 21 individuals with bonding social capital living in either non-poor or poor households, 66.7% and 40.0% respectively are core members and 33.3% and 60.0% respectively are non-core members (p=0.005 and p=0.535, respectively). Thus, bonding social capital in non-poor households are primarily hold by core members.

As far as bridging social capital is concerned, considerably more dynasty household members have bridging social capital. A total of 81.6% of the individuals with bridging social capital live in non-poor households, while 18.4% live in poor households (p<0.001). The question thus arises as to whether bridging social capital helps with the alleviation of poverty, since most individuals with bridging social capital live in non-poor households (always bearing in mind the possibility of endogeneity). Comparing core and non-core individuals, a significantly larger proportion of individuals living in both poor and non-poor households with bridging social capital is core members. Of the individuals who have bridging social capital and are living in non-poor households, 63.8% are core individuals and 36.2% are non-core individuals (p<0.001). Of the individuals with bridging social capital living in poor households, 55.6% are core members, while 44.4% are non-core individuals (p=0.004).

When bonding and bridging social capital are combined, it is evident that individuals with any type of social capital are more likely to be non-poor (81.3%) than poor (18.7%; p<0.001). Social capital therefore seems to have a significant impact on the probability of being poor. Of the individuals with social capital living in non-poor households, 63.9% are core individuals, compared with the only 36.1% who are non-core individuals (p<0.001). Similar results are shown for poor households: 53.9% are core individuals and 46.1% are non-core individuals (p=0.005). One may therefore conclude that social capital has a significant association with poverty alleviation (bearing in mind the possibility of endogeneity), while individuals with social capital living in non-poor households are mostly represented by core members.

Table 6.21: **Social capital and poverty in dynasty households (core and non-core individuals)**

Social capital	Non-poor				Poor			
	Core members	Non-core individuals	Total	Sample (n)	Core members	Non-core individuals	Total	Sample (n)
Bonding	66.7%	33.3%	80.8%	21	40.0%	60.0%	19.2%	5
	0.005				0.535			
Bridging	63.8%	36.2%	81.6%	160	55.6%	44.4%	18.4%	36
	0.000				0.004			
Any	63.9%	36.1%	81.3%	169	53.9%	46.1%	18.7%	39
	0.000				0.005			

Note: Refer to text for levels of significance

A relatively small number of individuals receive old-age pensions (Table 6.22). Although this is surprising, one must bear in mind that because only dynasty households are being analysed, they tend on average to be younger individuals who do not qualify for old-age pensions and are therefore unlikely to receive one. Individuals who receive old-age pensions are predominantly poor (56.1%) compared with the 43.9% who are non-poor (p=0.001). One would expect core members, who are on average a bit older than non-core members, to receive the old-age pension. This seems not to be the case in that significantly more non-core household members than core household members receive an old-age pension. This applies to both those living in non-poor households and those living in poor households (p=0.004).

Members of non-poor households are more likely to receive other forms of social grant (68.5%) than are individuals (31.5%) living in poor households (p=0.393). Those living in non-poor households and who receive other forms of social grant are predominantly core

individuals (53.1%) rather than non-core individuals (46.9%). The difference is however not statistically significant (p=0.1587). The dynasty household members living in poor households and who receive other forms of social transfer are mainly core individuals (57.6%) rather than non-core members (42.4%; p=0.049).

Combining the old-age pension with the other forms of social grant reveals that a significantly larger proportion of individuals living in non-poor households (64.0%) receives some kind of social grant than do individuals from poor households (36.0%; p=0.036). Surprisingly, non-core individuals (50.7%) rather than core individuals (49.3%) constitute a larger proportion of members of non-poor households who receive some form of social grant. The difference is however not statistically significant (p=0.593). There is no difference as regards the proportions of core and non-core individuals living in poor households who receive some form of social transfer (p=1.000). To sum up: It seems that it is mostly individuals from non-poor households who receive social transfers (the old-age pension excluded). One can therefore surmise that social transfers assist in alleviating poverty. Unexpectedly, the individuals who receive the old-age pension are predominantly non-core individuals.

Table 6.22: **Social transfers and poverty in dynasty households (core and non-core individuals)**

Social grants	Non-poor				Poor			
	Core members	Non-core individuals	Total	Sample (n)	Core members	Non-core individuals	Total	Sample (n)
Old-age pension	22.22%	77.78%	43.90%	18	30.43%	69.57%	56.10%	23
	0.000				0.004			
Other grants	53.13%	46.88%	68.45%	128	57.63%	42.37%	31.55%	59
	0.159				0.049			
Any grant	49.32%	50.68%	64.04%	146	50.00%	50.00%	35.96%	82
	0.593				1.000			

Note: Refer to text for levels of significance

Table 6.23 reveals that a significantly larger proportion of individuals from non-poor households participates in the labour force (39.5%) than do individuals from poor households (32.6%; p<0.001). In non-poor households, more core individuals (49.3%) than non-core individuals (33.8%) participate in the labour force (p<0.001). Also, significantly more core individuals from poor households participate in the labour force (40.8%) than do non-core

individuals (28.5%; p<0.001). In non-poor households, 66.2% of age-eligible individuals do not participate in the labour force. Similar results are shown for poor households: More than two-thirds (71.6%) of non-core individuals in poor households do not participate in the labour force.

As expected, the unemployment rate for individuals in poor households is significantly higher (76.5%) than the rate for individuals living in non-poor households (43.6%; p<0.001). In non-poor households, the unemployment rate for non-core individuals (46.4%) is significantly higher than the rate for core individuals (40.4%; p=0.050). Similarly, whereas the unemployment rate for non-core individuals in poor households is 79.3%, the unemployment rate for core individuals is 72.5%, a difference that is however not statistically significant (p=0.115). To conclude: As expected, the unemployment rate in poor households is significantly higher than in non-poor households. Non-core household members – in both poor and non-poor households – are more likely not to participate in the labour force than are core individuals. It also seems that core members are more likely to be employed in that non-core individuals generally bear a heavier burden of unemployment than do core individuals.

Table 6.23: **Employment and poverty in dynasty households (core and non-core individuals)**

Employment	Non-poor				Poor			
	Core individuals	Non-core individuals	Total	Sample (n)	Core individuals	Non-core individuals	Total	Sample (n)
Labour-force participation	49.3%	33.8%	39.5%	802	40.8%	28.5%	32.6%	289
Not in labour force	50.7%	66.2%	60.5%	1228	59.2%	71.6%	67.5%	599
Total	100.0%	100.0%	100.0%	2030	100.0%	100.0%	100.0%	888
Unemployment rate	40.4%	46.4%	43.6%	350	72.5%	79.3%	76.5%	221
Fisher's exact	0.050		i	i	0.115		i:p=0.00	i:p=0.000

Note: Refer to text for levels of significance

6.5 Intra-household composition of migratory and non-migratory dynasty households

Table 6.24 indicates the different levels of education of dynasty household members (all ages) by their household-migration status. Of individuals with no education, 63.6% live in households of which the members have not migrated and only 36.4% live in migratory households (p<0.001). Similar results were obtained in respect of individuals with only

primary or secondary education. Whereas 62.3% of the individuals with primary education live in non-migratory households, only 37.7% live in migratory households ($p<0.001$). Among the individuals with a secondary-level education, 62.7% live in non-migratory households and 37.3% live in migratory households. The same conclusion can be drawn in respect of individuals with Grade 12: 59.3% live in non-migratory households and 40.7% live in migratory households ($p<0.001$). It seems that a post-secondary education opens up opportunities for individuals with such a level of education, which results in households migrating. Of those individuals who have post-secondary education, 60.9% live in households that have migrated and only 39.1% live in households that have not done so ($p<0.001$).

The majority of the individuals living in non-migratory households (irrespective of their level of education) are non-core individuals. Among individuals with no schooling, 79.9% are non-core individuals as opposed to 20.1% who are core individuals ($p<0.001$). A total of 53.9% of non-core individuals compared with 46.1% of core individuals with primary education live in households that have not migrated ($p<0.001$). Similarly, of the 481 individuals who live in non-migratory households and who have a secondary education, 53.2% are non-core individuals, while 46.8% are core individuals ($p<0.001$). Somewhat more non-core individuals (50.9%) that core individuals (49.1%) with a Grade 12 education live in non-migratory households ($p<0.001$). There is no significant difference between the proportions of core and non-core individuals who have post-secondary education and are living in non-migratory households ($p=0.426$). Once again, if one combines the individuals with a Grade 12 and higher level of education, individuals from a non-migratory household are largely non-core individuals (52.0%) and only 48.0% are core individuals ($p<0.001$).

Similar conclusions are reached in respect of individuals (regardless of level of education) who are living in migratory households. A total of 88.7% of the 318 individuals living in a migratory household who have no education, are non-core individuals and only 11.3% are core individuals ($p<0.001$). Likewise, whereas 65.3% of individuals who have primary education and are living in migratory households are non-core individuals, only 34.7% are core individuals. This difference is not statistically significant ($p=0.160$). A significantly larger proportion of individuals who have some secondary education and who live in migratory households is non-core individuals (58.0%) while 42.0% are core individuals ($p<0.001$). As

regards individuals who live in a migratory household and have either Grade 12 or post-secondary education, the proportion of non-core individuals is also found to be larger than the proportion of core individuals (p<0.100). If one combines individuals with a Grade 12 or higher level of education, Table 6.24 indicates that individuals living in a migratory household are predominantly non-core individuals (52.7%) and that 47.3% are core individuals (p<0.001). This serves on to conclude that household members with higher levels of education are more likely to live in a migratory household than are individuals with lower levels of education.

Table 6.24: **Education and migration in dynasty households (core and non-core individuals) – all ages**

Education	Non-migratory				Migratory			
	Core individuals	Non-core individuals	Total	Sample (n)	Core individuals	Non-core individuals	Total	Sample (n)
No schooling	20.1%	79.9%	63.6%	556	11.3%	88.7%	36.4%	318
	0.000				0.000			
Primary schooling	46.1%	53.9%	62.3%	458	34.7%	65.3%	37.7%	277
	0.000				0.160			
Secondary schooling	46.8%	53.2%	62.7%	481	42.0%	58.0%	37.3%	286
	0.000				0.000			
Grade 12	49.1%	50.9%	59.3%	216	49.3%	50.7%	40.7%	148
	0.000				0.000			
Post-secondary schooling	41.2%	58.8%	39.1%	34	41.5%	58.5%	60.9%	53
	0.426				0.089			
Grade 12 and more	48.0%	52.0%	55.4%	250	47.3%	52.7%	44.6%	201
	0.000				0.000			

Note: Refer to text for levels of significance

Table 6.25 shows the remittance behaviour of individuals in dynasty households in terms of their household migration status. In total, only 4.2% of 1 788 individuals from non-migratory households receive inward remittances. Even fewer individuals in migratory households (3.4% of the 1 107 individuals) receive inward remittances (p=0.176). Of all the individuals who receive remittances, more (66.4%) as expected, live in non-migratory households and fewer (33.6%) live in migratory households. This difference is however not statistically significant (p>0.100). Whereas the individuals from non-migratory households who receive remittances are mostly core individuals (60.0%), 40.0% of the non-core individuals receive remittances (p<0.001). The proportion of remittance-receiving core individuals living in migratory

households (55.3%) is also significantly larger than the 44.7% of non-core remittance-receiving individuals (p=0.002). This emphasises the fact that in both migratory and non-migratory dynasties, remittances lie with core members.

Focusing on outward remittances, we also notice that a relatively small proportion of individuals send remittances. While only 3.9% of the 1 788 individuals living in non-migratory households send remittances, a significantly larger proportion (7.0%) of 1 107 individuals living in migratory households do so (p<0.001). Of all the individuals who send outward remittances, fewer live in non-migratory households (47.3%) than in migratory households (52.7%; p<0.001). This is to be expected in that individuals from migratory households are generally more likely to send remittances back home.

Combining the individuals involved either in the sending (outward) or the receiving (inward) of remittances, (and those without missing migratory status data), brings the total number of individuals involved in remittance behaviour to 8.5% (of the 2 895 individuals). A total of 7.7% of individuals (who live in non-migratory households), are involved in either the sending or the receiving of remittances, while 9.9% of individuals from migratory households either send or receive remittances (p=0.028). Of the individuals either sending or receiving remittances, a significant proportion comes from non-migratory households (55.9%), while 44.1% comes from migratory households. As regards non-migratory households, a significantly larger proportion of individuals either sending or receiving remittances is core individuals (58.7%), while 41.3% are non-core individuals (p<0.001). Similar results are shown for individuals in migratory households: 63.3% are core and 36.7% non-core individuals. Contrary to non-migratory households, this difference is however not statistically significant (p=0.291). To summarise: A significantly larger proportion of individuals living in non-migratory households receives remittances, while individuals in migratory households predominantly send remittances. It moreover seems that core individuals rather than non-core individuals are mostly involved in the sending or receiving of remittances.

Table 6.25: **Remittances and migration in dynasty households (core and non-core individuals)**

Remittances	Non-migratory				Migratory			
	Core individuals	Non-core individuals	Total	Sample (n)	Core individuals	Non-core individuals	Total	Sample (n)
Inward	60.00%	40.00%	66.37%	75	55.26%	44.74%	33.63%	38
	0.000		4.19%	1788	0.002		3.43%	1107
Outward	57.97%	42.03%	47.26%	69	66.23%	33.77%	52.74%	77
	0.000		3.86%		0.000		6.96%	
Inward/outward	58.70%	41.30%	55.87%	138	63.30%	36.70%	44.13%	109
	0.000		7.72%		0.000		9.85%	
Inward & outward	66.67%	33.33%	50.00%	6	50.00%	50.00%	50.00%	6
	0.151		0.34%		0.291		0.54%	

Note: Refer to text for levels of significance

Table 6.26 summarises the levels of social capital in dynasty households, given the migration status of both core and non-core individuals. The limited number of observations regarding bonding social capital makes it impossible to draw a meaningful conclusion and this will therefore not be discussed further. Focusing on bridging social capital, it seems that compared with migratory individuals (43.6%), a larger proportion of non-migratory individuals has bridging social capital (56.4%; p=0.066). As with remittances, core individuals in both migratory and non-migratory households have a significantly larger proportion of individuals with bridging social capital than do non-core individuals. Of the individuals with bridging social capital who live in non-migratory households, 61.8% are core individuals and 38.2% are non-core individuals (p<0.001). Likewise, of the individuals with bridging social capital who live in migratory households, 62.4% are core and 37.7% are non-core individuals (p<0.001).

If individuals with both bonding and bridging social capital are combined, we again find that a significantly larger proportion of individuals comes from non-migratory households (57.0%) rather than from migratory households (43.0%; p=0.083). A significantly larger proportion of individuals with any form of social capital, who also live in non-migratory households, is core individuals (61.0%) rather than non-core individuals (39.0%; p<0.001). The proportion of core individuals with any form of social capital and who moreover live in migratory households, is significantly larger (62.9%) than that of non-core individuals (37.1%; p<0.001). To summarise: Individuals from non-migratory households are more likely to have social capital than are

individuals from migratory households, while core individuals, on the other hand, are more likely than non-core individuals to contribute to the level of social capital in a household.

Table 6.26: **Social capital and migration in dynasty households (core and non-core individuals)**

Social capital	Non-migratory				Migratory			
	Core individuals	Non-core individuals	Total	Sample (n)	Core individuals	Non-core individuals	Total	Sample (n)
Bonding	55.0%	45.0%	76.9%	20	83.3%	16.7%	23.1%	6
	0.090				0.014			
Bridging	61.8%	38.2%	56.4%	110	62.4%	37.7%	43.6%	85
	0.000				0.000			
Any	61.0%	39.0%	57.0%	118	62.9%	37.1%	43.0%	89
	0.000				0.000			

Note: Refer to text for levels of significance

Social transfers have a significant impact on the level of well-being of both individuals and households (Table 6.27). Given the limited sample of dynasty households by their migration status, not many individuals receive social grants (especially old-age pensions). One must once again take the average age of these individuals into account. Of the dynasty household individuals who receive old-age pensions, who one expected to be less mobile, 61.0% live in non-migratory households and 39.0% live in migratory households. Given the limited number of observations, this difference is not statistically significant (p=0.518). As regards the individuals in non-migratory households – mostly non-core individuals – the difference is also not statistically significant (p=0.490). Although the recipients of old-age pensions in migratory households are significantly more likely to be non-core individuals, one must bear in mind the limited number of observations in this regard (p=0.018).

If we turn to other grant income, no significant difference is found between the proportions of individuals living in non-migratory households who receive other forms of grants and those living in migratory households (p=0.138). Of those receiving other grant income and living in non-migratory households, the majority are core individuals (55.6%) rather than non-core individuals (44.4%; p<0.001). The proportion of core individuals who live in migratory households (53.2%) while receiving another form of social grant is also significantly larger than the proportion of non-core individuals receiving other forms of social grant (46.8%; p<0.001).

The last row of Table 6.27 combines all types of social transfer. No significant difference is apparent between the recipients of some form of social transfer and who live in non-migratory households and those living in migratory households. The majority of grant recipients in non-migratory households are core individuals. Of those receiving some form of social transfer and living in non-migratory households, 52.6% are core individuals and 47.4% are non-core individuals ($p<0.001$). The opposite seems to apply in respect of individuals in migratory households. Whereas most of the individuals in migratory households (54.7%) are non-core individuals, 45.3% are core individuals ($p=0.003$). To summarise: There seem to be no significant differences between grant recipients in non-migratory households and grant recipients in migratory households. In non-migratory households, the majority of grant recipients are core individuals, while the majority of grant recipients in migratory households are non-core individuals.

Table 6.27: **Social transfers and migration in dynasty households (core and non-core individuals)**

Social grants	Non-migratory				Migratory			
	Core individuals	Non-core individuals	Total	Sample (n)	Core individuals	Non-core individuals	Total	Sample (n)
Old-age pension	40.0%	60.0%	61.0%	25	6.3%	93.8%	39.0%	16
	0.490				0.018			
Other grants	55.6%	44.4%	57.8%	108	53.2%	46.8%	42.3%	79
	0.000				0.000			
Any grant	52.6%	47.4%	58.3%	133	45.3%	54.7%	41.7%	95
	0.000				0.003			

Note: Refer to text for levels of significance

There is no significant difference as regards the labour-force participation of the individuals living in non-migratory households and those living in migratory households ($p=0.128$) (Table 6.28). In non-migratory households, a significantly larger proportion of labour-force participants is core individuals (44.8%) rather than non-core individuals (31.5%; $p<0.001$). Similarly, whereas a significantly larger proportion of core individuals from migratory households participates in the labour force (50.7%) only 33.2% of non-core individuals participate ($p<0.001$).

Migration seems to be a risk-diversification strategy in that the unemployment rate for individuals from migratory households (44.5%) is significantly lower than that for individuals from non-migratory households (57.8%; p<0.001). There is no significant difference between the unemployment rate of core and non-core individuals from non-migratory households (p=0.204). Compared with individuals from migratory households, non-core individuals have a significantly higher unemployment rate (50.8%) than do core individuals (35.8%; p=0.001). To summarise: It would seem that migration helps to reduce the unemployment rate and that core individuals from migratory households will be more likely to be employed than non-core individuals.

Table 6.28: **Employment and migration in dynasty households (core and non-core individuals)**

	Non-migratory				Migratory			
	Core individuals	Non-core individuals	Total	Sample (n)	Core individuals	Non-core individuals	Total	Sample (n)
Labour-force participation	44.8%	31.5%	36.6%	654	50.7%	33.2%	38.8%	429
Not in labour force	55.2%	68.5%	63.4%	1134	49.3%	66.8%	61.3%	678
Total	100.0%	100.0%	100.0%	1788	100.0%	100.0%	100.0%	1107
Unemployment rate	55.9%	59.4%	57.8%	378	35.8%	50.8%	44.5%	191
Fisher's exact	0.204		i		0.001		i:p=0.000	

Note: Refer to text for levels of significance

To summarise, the descriptive analysis, in terms of household formation and composition, suggests that core dynasty household members contribute relatively more resources to dynasty households than non-core dynasty members.

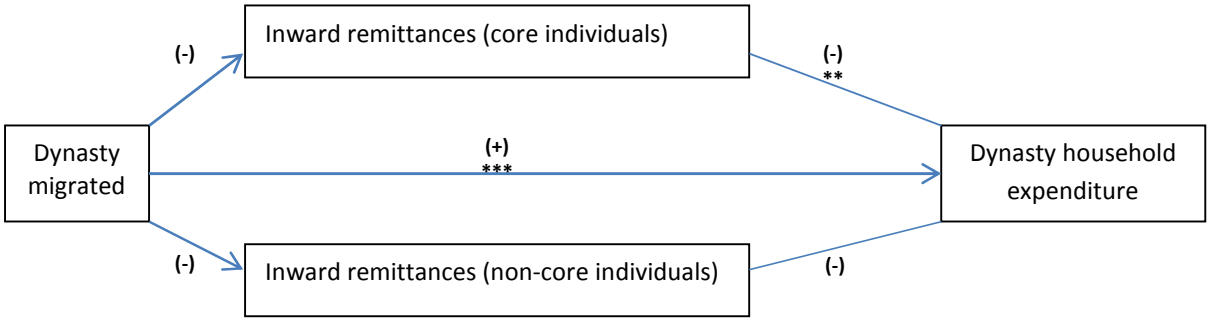
6.6 Household welfare and the characteristics of core and non-core members

The following section summarises the structural equation models (SEM) and the ordinary least squares (OLS) regression analyses for household poverty. The SEM models indicate not only the causal effect of migration on household welfare but also the positive or negative associations between the observed variables and household welfare. Only the SEM graphs are reported below, while the full SEM regression results are included in the appendix 6 to this chapter. The OLS regression results on household poverty are also indicated below. The OLS results are based on robust standard errors.

6.6.1 Inward remittances

As expected, migration has a significantly positive causal effect on the level of welfare in dynasty households (Figure 6.1). Inward remittances by core individuals in dynasty households are significantly negatively associated with household expenditure, albeit that the *apriori* expectation is positive. Non-core individuals in the dynasty households who receive remittances also have a negative association with household expenditure. This effect is however not statistically significant. Though only remittances received by the core individuals has a significant association with household expenditure, the difference between the core and non-core individuals is not statistically significant (p=0.596). Essentially, there is a good fit between the SEM model and the data (see the appendix).

Figure 6.1: **Inward remittances SEM, by core and non-core dynasty household members**



From Table 6.29, which indicates the ordinary least squares results, similar conclusions as above can be drawn. As the size of dynasty households increases with one additional member (irrespective of whether it be a core or non-core member), the average increase in household expenditure (remittances excluded) is around 3.2% (average of models 1 to 5). The number of dependants in a dynasty household has a significant impact on household expenditure (remittances excluded). An increase in the dependency ratio will lead to an average decrease in household expenditure of around 64.5% (average of models 1 to 5). As indicated in the SEM results above, the migration status of a household also has a significant impact on household expenditure. On average, dynasty households who migrated spend about 40.1% more than non-migratory households (Model 1).

Comparison of inward remittances received by core and non-core individuals reveals results similar to those of the structural equation modelling (SEM). In Model 1, when an additional core household member in a dynasty households receives an inward remittance, it is associated with a significant decrease in average household expenditure (remittances excluded) of about 17.9%. Inward remittances received by additional non-core members are not found to have a significant association with household expenditure (remittances excluded). This may reflect that remittances are targeted at core members in poorer households with lower average levels of household expenditure.

Models 2 to 5 show the partial effects of migration on core and dynasty household members. Model 2 indicates the effects of remittances received by non-core household members, the partial effect of remittances received by core household members and the partial effect of migration given inward remittances by core household members. Unfortunately, none of these seem to be statistically significant, except for the highly significant direct effect migration still has on household welfare. As in Model 2, Model 3 shows the partial effects of migration and inward remittances by non-core members. Again, none of the partial effects are statistically significant. In Model 3, remittances received by core household members are weakly significant and reflect a decrease in average household welfare for every additional core household member who receives inward remittances. Model 4 reports the partial effects of migration and also of the partial effects of remittances received by both core and non-core household members. Neither coefficient is statistically significant, which thus indicates only the highly significant effect of migration on average household expenditure (excluding remittances). The focus of Model 5 is to indicate the partial effect of migration given remittances received by both core and dynasty household members. Household migration seems to exert a significantly positive influence on household expenditure. However, as the number of core household members receiving inward remittances increases, the partial effect of migration seems to decrease (although only statistically significant at a 10% level of significance). Table 6.29 reveals that all the models are overall significant (F prob <0.001) in terms of explaining household expenditure and, on average, explain only about 8.22% of the variation in monthly household expenditure.

Table 6.29: **Household expenditure, by migration and inward remittances: core vs non-core members**

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	0.031**	0.033**	0.031**	0.033**	0.034**
Dynasty dependency ratio	-0.636***	-0.651***	-0.631***	-0.646***	-0.663***
Dynasty migration	0.401***	0.432***	0.383***	0.415***	0.444***
Inward remittances (number of individuals)					
Core members	-0.179*	-0.092	-0.180*	-0.099	
Non-core members	-0.081	-0.078	-0.152	-0.139	
Interactions					
Migration * Inward rem (core members)		-0.259		-0.243	-0.343*
Migration * Inward rem (non-core members)			0.202	0.171	0.033
Constant	7.805***	7.79***	7.810***	7.795***	7.768***
Obs	507	507	507	507	507
F (prob)	10.12 (0.000)	8.53 (0.000)	8.99 (0.000)	7.80 (0.000)	9.17 (0.000)
R-squared	0.081	0.083	0.0817	0.0835	0.0816

Figure 6.2 differentiates between the associations of inward remittances received by core family members, remittances received by non-core family and also by non-core non-family members with household expenditure (exclusive of remittances). Again, migration has a positive and significant causal effect on household expenditure. Core members, who also have family ties with the household head in dynasty households and who also receive inward remittances, have a negative association with household expenditure. Neither non-core family members nor non-core non-family members who receive inward remittances have a significant association with household expenditure. Given the significantly negative association between core family members who receive remittances and household expenditure, one may conclude that core members in poorer households generally receive remittances, which again may reflect the targeting of remittances at poorer households.

Figure 6.2: **Inward remittances SEM, by core and non-core family and non-family household members**

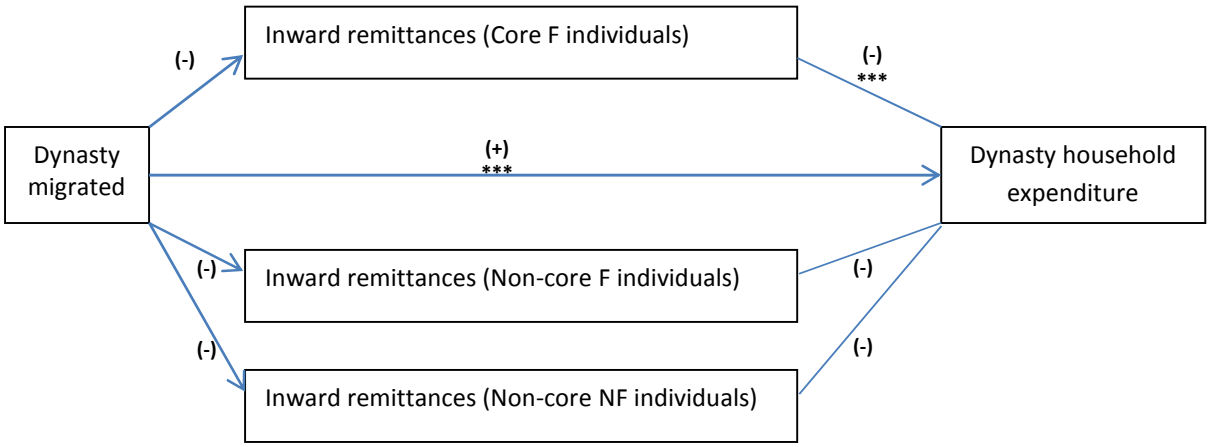


Table 6.30 shows the OLS regression results for the corresponding SEM model. All the OLS regressions in Table 6.30 attempt to differentiate between family and non-family members who received inward remittances. All the models in Table 6.30 are generally significant in terms of explaining household expenditure (F test; $p<0.001$). As in Table 6.29 above, the size of the dynasty household seems to have a significantly positive effect on average household monthly expenditure, while the dependency ratio significantly decreases the average household expenditure (models 1 to 5). Comparison of family and non-family members who receive remittances, reveals that while core family members seem to have a significantly

negative effect on monthly household expenditure (Model 1), none of the non-core household members receiving inward remittances (irrespective of whether they be family or non-family) have a significant influence on average monthly household expenditure ($p>0.100$: Model 1). Though Model 2 estimates the partial effects of both migration and remittances received by core family, neither of these are statistically significant. In all cases, migration has a significantly positive effect on household expenditure, irrespective of the number of household members (core or non-core, family or non-family) who receive remittances. In Model 3, the partial effect of migration by inward remittances received by non-core family members proves to be insignificant. The number of core family members receiving remittances has a weak significantly negative effect on household expenditure. Similarly, in Model 4, the partial effect of migration given the number of non-core non-family members also seems to be insignificant and only the number of core family members receiving remittances has a weak significantly negative effect on household expenditure. Model 5 estimates the partial effects of migration and also the effects of core and non-core household members given their relationship to the 1993 household head. Apparently, none of the partial effects by the number of remittance receivers (irrespective of relationship or status) are statistically significant. Migration still has a strong positive and significant effect on household expenditure, with no influence by core or non-core family or non-family members (Model 5). Model 6 shows only the partial slope coefficient of migration by the family members of the 1993 household head. This reveals, as in Table 6.29 above, that migration is positive and significantly associated with higher levels of household expenditure, but as the number of core family members who receive remittances increases, the considerable positive effect of migration seems to decrease. Again, all the models are overall statistically significant in respect of explaining the variation in average household expenditure (logged). All models have an R^2 value in excess of 0.081.

Table 6.30: Household expenditure, by migration and inward remittances: family vs non-family members

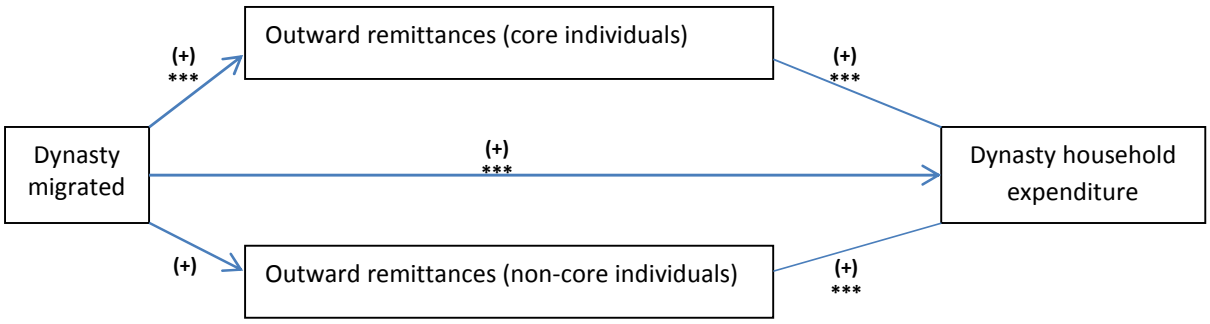
Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dynasty household size	0.031**	0.033**	0.031**	0.031**	0.032**	0.033**
Dynasty dependency ratio	-0.635***	-0.650***	-0.629***	-0.636***	-0.644***	-0.661***
Dynasty migration	0.402***	0.432***	0.389***	0.397***	0.415***	0.444***
Number of individuals receiving inward remittances						
Core members (family)	-0.179*	-0.092	-0.180*	-0.179*	-0.098	
Non-core members (family)	-0.037	-0.034	-0.110	-0.037	-0.098	
Non-core members (non-family)	-0.162	-0.160	-0.162	-0.221	-0.2145	
Interactions						
Migration * Inward rem (core members: fam)		-0.259			-0.243	-0.343*
Migration * Inward rem (non-core members: fam)			0.209		0.182	0.083
Migration * Inward rem (non-core members: non-fam)				0.170	0.154	-0.059
Constant	7.805***	7.789***	7.807***	7.806***	7.794***	7.768***
Obs	507	507	507	507	507	507
F (prob)	8.43 (0.000)	7.31 (0.000)	7.89 (0.000)	7.28 (0.000)	6.26 (0.000)	7.97 (0.000)
R-squared	0.0811	0.0832	0.0818	0.0814	0.0839	0.0818

It can therefore be concluded that migration results in an increase in average household welfare, but that the effect is lessened by the number of core family household members who receive remittances. An increase in the number of core family members receiving remittances is therefore associated with lower levels of household welfare.

6.6.2 Outward remittances

Figure 6.4 depicts an SEM model for outward remittances, by core and non-core members in dynasty households. Migration has a significantly positive causal effect on average household expenditure (excluding remittances). As expected, the sending of outward remittances also has a significantly positive association with average monthly household expenditure (excluding remittances), irrespective of whether the individual be a core or a non-core household member. This is to be expected in that wealthier households tend to be net-remittance senders. There is no significant difference between the positive association of core and non-core household members (p=0.662).

Figure 6.4: **Outward remittances SEM, by core and non-core dynasty household members**



Given the OLS results of the effects that outward remittances may have on average household expenditure, Table 6.31 again shows the significant influence that migration has on household welfare (Model 1). Table 6.31 further confirms the significant influence on household expenditure (excluding remittances) of outward remittances sent by both core and non-core members as indicated in the SEM model above. In Model 1, every additional core household member who sends outward remittances results in a large and significant increase in average household expenditure (excluding remittances). The same obtains in the case of outward remittances sent by every additional non-core household member. A possible explanation

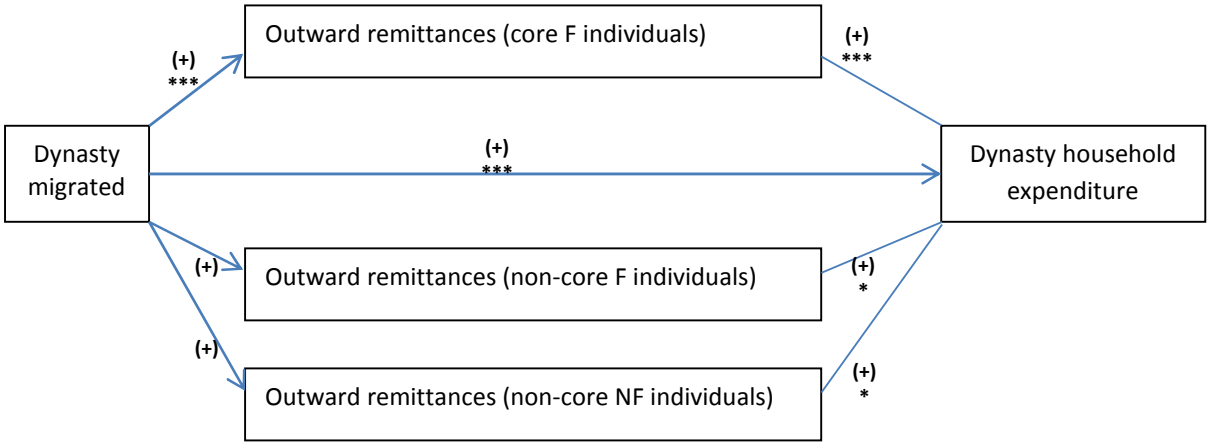
may be that wealthier households can afford to remit more. There is no significant difference between the influence of core and non-core members ($p>0.100$). In Model 2, the partial effects of migration and the remittances sent by core members are reported. The results reveal that, while the migration of core members results in a significant increase in household expenditure (remittances excluded), this is not the case in non-migratory households. However, as more core members in the household send remittances, so the considerable positive effect of migration (0.783) seems to decrease (-0.491). Model 3 reveals that the remittances sent by non-core members do not have any significant partial effect on the impact that migration has on average household expenditure (remittances excluded). Model 4 confirms the results of both Model 2 and Model 3 in indicating that migration has less of an effect on average household expenditure (remittances excluded) when the number of remittance-sending core individuals increases (-0.491). In migratory households, the considerable influence of migration on household welfare decreases (-0.491) with each additional remittance-sending core individual (0.784). The same cannot be said of non-migratory households. The last model (Model 5) focuses only on the partial effect of migration relative to the number of core and non-core remittance senders. By indicating that a smaller basic increase in average household expenditure (0.280) results when individuals migrate, the results reveal that when more additional core and non-core individuals send remittances, this increases the migratory effect on average household welfare. Although there is no significant difference between the migratory effects of core and non-core individuals, Model 5 indicates that as the number of remittance-sending core or non-core individuals increases, so the effect of migration on average household expenditure (remittances excluded) also increases significantly. This does not apply to non-migratory households. All the models are overall statistically significant (F prob <0.001) and models 1 to 4 all explain more than 15% of the variation in average monthly household expenditure (logged).

Table 6.31: **Household expenditure, by migration and outward remittances: core vs non-core members**

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	0.035***	0.032***	0.035***	0.032***	0.034***
Dynasty dependency ratio	-0.562***	-0.547***	-0.561***	-0.546***	-0.632***
Dynasty migration	0.344***	0.432***	0.351***	0.438***	0.280***
Outward remittances (number of individuals)					
Core members	0.503***	0.783***	0.505***	0.784***	
Non-core members	0.497***	0.520***	0.528***	0.550***	
Interactions					
Migration * Outward rem (core members)		-0.491***		-0.491***	0.293**
Migration * Outward rem (non-core members)			-0.063	-0.062	0.487***
Constant	7.603***	7.569***	7.600***	7.566***	7.750***
Obs	507	507	507	507	507
F (prob)?	17.99 (0.000)	18.83 (0.000)	15.31 (0.000)	16.21 (0.000)	13.34 (0.000)
R-squared	0.1502	0.1608	0.1503	0.1609	0.0996

The presence of remitting family members and non-family members has a positive association with household expenditure (excluding remittances). Figure 6.5 shows the strong significantly positive association of remittance sending by core family household members. Both family and non-family non-core members also have a significantly positive association with average household expenditure. Despite these positive associations, there are no significant differences, neither between core and non-core household members nor between family and non-family household members ($p>0.100$). Again, migration has a strong positive causal effect on household welfare (measured by household expenditure).

Figure 6.5: **Outward remittances SEM, by core and non-core family and non-family household members**



The regression results regarding the association between the size of the household and the household dependency ratio with household welfare are similar to those of inward remittances (Table 6.32). Increases in household size are associated with significantly higher levels of household expenditure, while a higher dependency ratio results in lower levels of household expenditure (remittances excluded). In Model 1, migration results in a 34.5% increase in average monthly household expenditure. Both core and non-core household members (irrespective of family status), have a positive and significant effect on average monthly household expenditure. On average (Model 1), the outward remittances sent by one additional core family member result in a 50.4% increase in average monthly household expenditure, while a remittance sent by one additional non-core family member results in a

53.7% increase in average monthly expenditure. An additional non-core non-family member remitter is associated with higher household expenditure of 43.7%. All these effects are highly significant, although there is no significant difference between the influence on average household expenditure (excluding remittances: $p>0.100$) of core family, non-core family and non-core non-family remittances.

Model 2 reveals the partial effects of migration on average household expenditure given the number of core family remittance-sending individuals. The results show that, while migration has a large positive and significant influence on household expenditure, the large positive effect (0.432) decreases as the number of remittance-sending core family members increases (-0.489). Similarly, the positive effect that an additional core family remitter has on the average household expenditure (0.783) decreases in magnitude if the remitter lives in a migratory household (-0.489). Non-core family or non-family remitters still have a large and significant positive association with average household expenditure (remittances excluded: 0.556 and 0.465, respectively). Models 3 and 4 both show no significant influence of the partial coefficient for the sending of remittances by either non-core family members or non-core non-family members living in migratory households. In Model 4, as in Model 5, the positive effect of non-core non-family remitters on average household expenditure (remittances excluded) also becomes insignificant. Model 5 again emphasises the decreasing effect of the number of core family remitters (-0.496) living in migratory households on the positive influence by migration on average household expenditure. Model 6 shows only the partial effects that the number of remitters (core and non-core members; family and non-family members) living in a migratory household have on average monthly household expenditure. The results reveal that though the sending of remittances by members living in a migratory household (irrespective of the type of remitter) increases the average household expenditure, this is not true of non-migratory households. Migration therefore has a large positive net effect on average household expenditure, an effect that is significantly increased as the number of remitters living in the migratory household increases. There are no significant differences between the influence exerted by the type of remitter (whether core or non-core members, or family or non-family: $p>0.100$). All the models are overall significant in explaining the variation in average household expenditure (logged) (F-test; $p<0.001$).

Table 6.32: Household expenditure, by migration and outward remittances: family vs non-family members

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dynasty household size	0.035***	0.033***	0.035***	0.035***	0.033***	0.035***
Dynasty dependency ratio	-0.561***	-0.546***	-0.555***	-0.562***	-0.541***	-0.631***
Dynasty migration	0.345***	0.432***	0.361***	0.333***	0.439***	0.280***
Number of individuals sending outward remittances						
Core members (family)	0.504***	0.783***	0.508***	0.501***	0.787***	
Non-core members (family)	0.537***	0.556***	0.662***	0.537***	0.683***	
Non-core members (non-family)	0.437**	0.465**	0.435**	0.308	0.332	
Interactions						
Migration * Outward remittances (core members: fam)		-0.489***			-0.496***	0.290**
Migration * Outward remittances (non-core members: fam)			-0.265		-0.269	0.414**
Migration * Outward remittances (non-core members: non-fam)				0.251	0.256	0.586**
Constant	7.602***	7.568***	7.591***	7.606***	7.560***	7.748***
Obs	507	507	507	507	507	507
F (prob)	15.82 (0.000)	16.59 (0.000)	14.08 (0.000)	13.32 (0.000)	13.26 (0.000)	11.24 (0.000)
R-squared	0.1505	0.1610	0.1518	0.1513	0.1632	0.1001

It can therefore be concluded that migration and outward remittances result in an increase in average household welfare and that the addition of remitters in migrating households further increases household welfare regardless of the household status (core vs non-core) and family (family vs non-family) of the remitters. One explanation for this finding may be that more remitters imply more earners and hence greater household welfare.

6.6.3 Social transfers

Figure 6.6 depicts an SEM model for household expenditure, migration and the number of individuals who receive any kind of social transfer. Migration has a positive and significant effect on household welfare. An increase in the number of core and non-core household members with social grants is significantly negatively associated with household expenditure. This negative association is only to be expected if we assume that social grants effectively target the poor.

Figure 6.6: **Grant income SEM, by core and non-core dynasty household members**

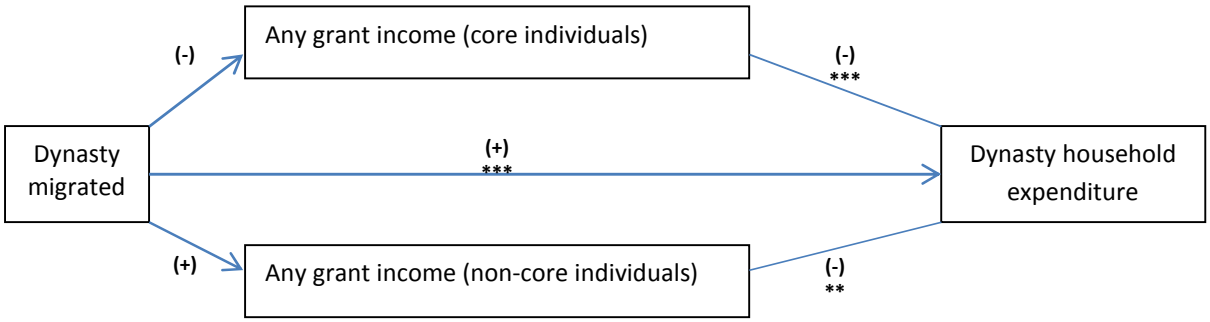


Table 6.33 shows the ordinary least squares results for the above structural equation model (SEM). All the models are overall significant in terms of explaining household expenditure (logged) (F test; $p<0.001$). Model 1 indicates, as above, a significantly positive effect of household size on average monthly household expenditure, in that it increases by 4.7% for each additional household member. As above, the dependency ratio has a strong significantly negative effect on household expenditure. Migration, as is to be expected and as has been demonstrated elsewhere, significantly increases average household expenditure levels. Migratory households (Model 1) have an average household expenditure level of 42.1% higher than non-migratory households. Table 6.33 also shows the significantly negative

association of social transfers on household expenditure (irrespective of whether received by core members or non-core members). For every additional household member who receives a social transfer, average household expenditure decreases by 37.0%. The decrease is only 18.0% if the transfer is received by an additional non-core household member. The results reveal a significantly larger negative effect on household expenditure if the additional social transfer is received by a core household member rather than by a non-core household member (p=0.049). Model 2 indicates the two partial effects of migration on average household welfare. The results show that the average household expenditure of migratory households increases, but that as the number of core household members receiving a social transfer increases, the large positive effect of migration (0.493) on household expenditure decreases (-0.342). The significantly negative effect of grant income received by an additional core household member on household expenditure (-0.247) increases even further (i.e., the effect is more negative) when this additional core household member lives in a migratory household (-0.342). As in Model 1, an additional non-core household member receiving a social transfer is associated with a lower level of household expenditure. Model 3 shows that no significant influence is exerted on household expenditure by the partial coefficient of migration and non-core social grants. While migration still has a strong and significantly positive effect on average household expenditure, social transfers received by both additional core or non-core household members will result in a decrease in average household expenditure. The negative effect on household expenditure of social transfers received by additional core household members is still larger than that of additional non-core household members (p=0.050). Model 4 confirms the results of Model 2. Average household expenditure of migratory households is significantly higher than that of non-migratory households, but this considerable effect is decreased with each additional core household member who receives a social transfer. This also applies to Model 5, and by extension also to additional social transfers received by non-core members. There is also a significant difference between the two interaction partial effects (p=0.003). The positive migratory effect is reduced for each additional non-core member who receives a social transfer (-0.177), and it is even further reduced if the additional social transfer is received by a core rather than a non-core household member (-0.586).

Table 6.33: **Household expenditure, by migration and grant income: core vs non-core members**

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	0.047***	0.044***	0.047***	0.044***	0.035***
Dynasty dependency ratio	-0.545***	-0.554***	-0.545***	-0.554***	-0.601***
Dynasty migration	0.421***	0.493***	0.433***	0.498***	0.580***
Any grant income received					
Core members	-0.370***	-0.247***	-0.369***	-0.248***	
Non-core members	-0.180**	-0.174***	-0.155**	-0.161**	
Interactions					
Migration * Any grant income (core members)		-0.342**		-0.339**	-0.586***
Migration * Any grant income (non-core members)			-0.055	-0.027	-0.177**
Constant	7.761***	7.750***	7.757***	7.748***	7.731***
Obs	507	507	507	507	507
F (prob)	15.34 (0.000)	13.55 (0.000)	12.77 (0.000)	11.64 (0.000)	13.30 (0.000)
R-squared	0.1245	0.1316	0.1248	0.1316	0.1160

Figure 6.7 extends the SEM model as indicated in Figure 6.6 above by differentiating between the social grants received by core family household members, the social grants received by non-core family members and the social grants received by non-core non-family members. Figure 6.7 confirms the significantly positive effect of migration on average household expenditure, confirming the effective targeting of social transfers. As in the case above, grant income (social transfers) received by core family members is negatively associated with household expenditure, as are social transfers received by non-core family members. Even though social transfers received by non-core non-family members also have a negative association with household expenditure, the result is not statistically significant at a 10% level of significance.

Figure 6.7: **Grant income SEM, by core and non-core family and non-family household members**

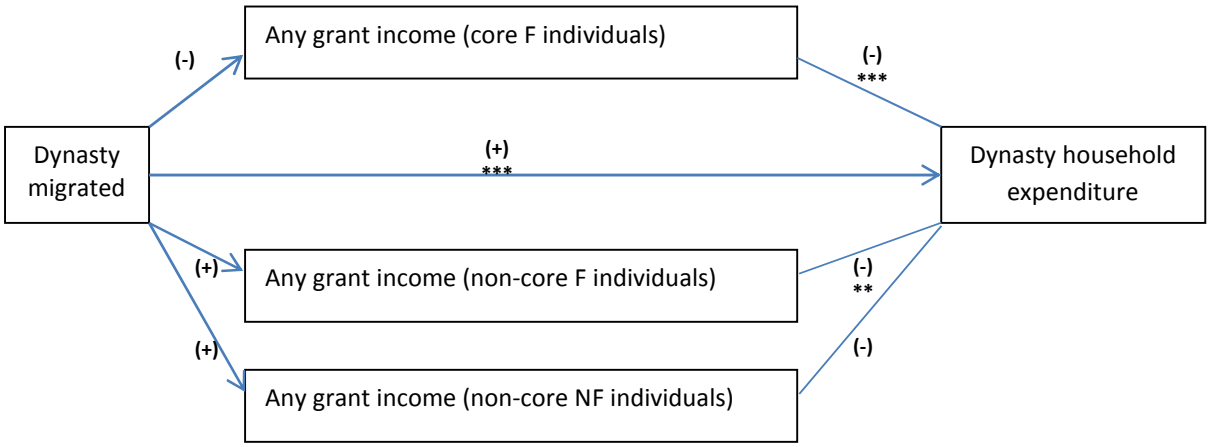


Table 6.34 summarises the OLS regression results for household expenditure and social transfers received by core family, non-core family and non-core non-family members. Model 1 reveals similar results regarding the association of household size and the dependency ratio with average household expenditure. Once again, migration has a strong and significantly positive effect on average household expenditure. An additional core family member receiving a social transfer reduces the average household expenditure by 38.6%. The addition of household members who receive social grants (irrespective of whether core, non-core, family or non-family) reduces the average household welfare. This is a significantly larger decrease than in the case of either an additional non-core family member receiving a social

transfer (p=0.059) or of an additional non-core non-family member receiving a social transfer (p=0.064). Even though the difference between the different additional transfers is significant, any addition of grantees is negatively associated with average household expenditure.

Model 2 confirms the above results by indicating a smaller effect of migration on average household expenditure (0.490) for each additional core family member receiving a social transfer (-0.326). In Model 2, additional non-core non-family members receiving social transfers have no significant effect on average household expenditure. Model 3 shows that additional non-core migratory family members receiving a social transfer have no significant partial effect. Also, the effect of additional non-core family members receiving a social transfer is insignificant. According to Model 4, no significant partial effect is moreover apparent of additional non-core, migratory, non-family members receiving a social transfer, even though the direct effect of an additional non-core non-family member receiving a social transfer is, in this case, significant at a 5% level of significance. Model 5 confirms the results of Model 2 by indicating that the effect of migration on average household expenditure decreases with each additional core family member who receives a social transfer. The last model (Model 6) confirms the large and significantly positive effect migration has on average household expenditure. However, the partial interaction effects indicate a significant decrease in the effect of migration on average household expenditure for each additional household member receiving a social transfer, irrespective of whether they be core family members (-0.607), non-core family members (-0.257) or non-core non-family members (-0.036). Again, the negative effect of additional core family members is significantly more pronounced than the effect of either non-core family members (p=0.006) or non-core non-family members (p=0.008). There is no significant difference between family and non-family members' partial effects on average household expenditure. Again, all the models are overall significant in respect of explaining the variation in average household expenditure (logged) (prob F<0.001).

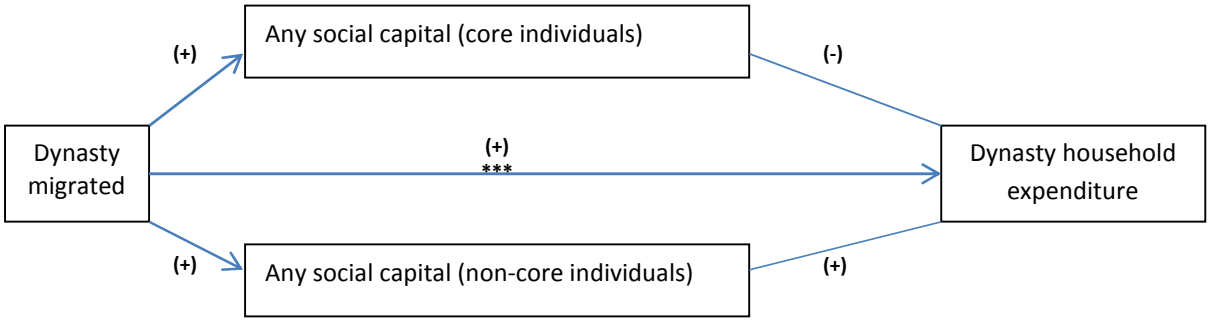
Table 6.34: Household expenditure, by migration and grant income: family vs non-family members

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dynasty household size	0.047***	0.044***	0.047***	0.047***	0.044***	0.034**
Dynasty dependency ratio	-0.553***	-0.556***	-0.552***	-0.554***	-0.558***	-0.598***
Dynasty migration	0.422***	0.490***	0.441***	0.418***	0.501***	0.585***
Number of individuals receiving a grant income						
Core members (family)	-0.386***	-0.269***	-0.387***	-0.387***	-0.268***	
Non-core members (family)	-0.193***	-0.196***	-0.139	-0.194***	-0.144	
Non-core members (non-family)	-0.157*	-0.132	-0.155*	-0.188**	-0.192***	
Interactions						
Migration * Any grant income (core members: fam)		-0.326***			-0.337**	-0.607***
Migration * Any grant income (non-core members: fam)			-0.120		-0.117	-0.257***
Migration * Any grant income (non-core members: non-fam)				0.063	0.131	-0.036***
Constant	7.765***	7.757***	7.760***	7.767***	7.755***	7.739***
Obs	507	507	507	507	507	507
F (prob)	13.70 (0.000)	12.25 (0.000)	11.67 (0.000)	12.43 (0.000)	10.10 (0.000)	11.02 (0.000)
R-squared	0.1273	0.1336	0.1281	0.1274	0.1349	0.1177

6.6.4 Social capital

Figure 6.8 depicts an SEM model for household expenditure, migration and social capital. Migration has a significantly positive causal effect on household expenditure. Individuals receiving social capital have conflicting associations with household expenditure. The number of core individuals with social capital is negatively associated with household expenditure, while the number of non-core individuals with social capital reflects a positive association (as expected). However, the effects of neither are statistically significant.

Figure 6.8: **Social capital SEM, by core and non-core dynasty household members**



The OLS regression results differ somewhat from the SEM results (Table 6.35). Model 1 still indicates a significantly positive association between household size and the log of average household expenditure. The negative and significant association with the dependency ratio is also confirmed. Similarly, in Model 1, a migratory household's average monthly household expenditure will be 40.7% higher than that of non-migratory households. However, though still not statistically significant ($p>0.100$), core individuals' negative association with social capital as indicated in the SEM model above, is now positive in the OLS regression below (Model 1). Model 1 shows a relatively strong positive and significant association between social capital in non-core members and average household expenditure. An additional non-core household member who gains access to social capital will increase average household expenditure by 15.2%. According to Model 2, there is no significant effect on the social capital of a core migratory household member. Only the social capital of non-core household members (and not that of core household members) has a significant association with average household expenditure. Model 3 is similar in that it too shows that an additional non-core migratory household member with social capital has no significant influence on household

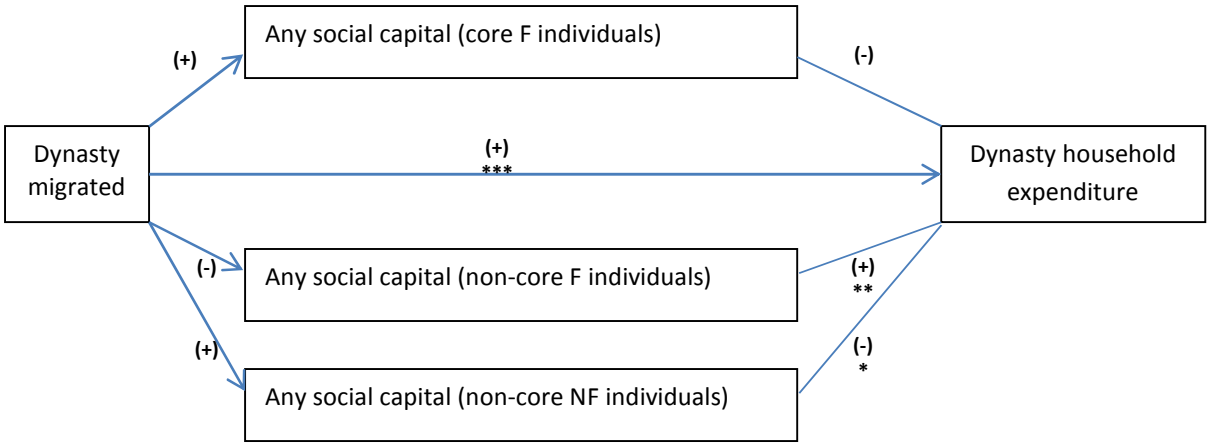
expenditure. Model 4 confirms the conclusions drawn from Model 2 and Model 3, with no significant partial effects in terms of the interaction. The same conclusion is drawn from Model 5, which also indicates no significant partial effects of either an additional core migratory household member with social capital or of an additional non-core migratory household member with social capital. One may therefore conclude that, despite an insignificant association, social capital by non-core household members has a significant and positive influence on household expenditure. Despite core members holding more social capital, non-core members it appears hold anti-poverty social capital. All the models are overall significant in explaining the variation in average household expenditure (logged) and all have R^2 values in excess of 0.079.

Table 6.35: **Household expenditure, by migration and social capital: core vs non-core members**

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	0.028**	0.028**	0.028**	0.028**	0.032**
Dynasty dependency ratio	-0.622***	-0.622***	-0.623***	-0.622***	-0.644***
Dynasty migration	0.407***	0.401***	0.404***	0.400***	0.364***
Any social capital					
Core members	0.067	0.061	0.067	0.062	
Non-core members	0.152**	0.152**	0.145*	0.146*	
Interactions					
Migration * Any social capital (core members)		0.020		0.018	0.080
Migration * Any social capital (non-core members)			0.018	0.014	0.158
Constant	7.744***	7.746***	7.745***	7.746***	7.771***
Obs	507	507	507	507	507
F (prob)	11.08 (0.000)	9.29 (0.000)	9.20 (0.000)	7.93 (0.000)	9.98 (0.000)
R-squared	0.0843	0.0843	0.0843	0.0843	0.0797

Figure 6.9 further investigates the influence of non-core household members by drawing a distinction between family and non-family. Migration still has a strong positive and significant causal effect on household expenditure. Similar results as in Figure 6.8 above (negative and insignificant) are shown for core family members but not for non-core household members (positive and insignificant). The social capital of core family members has no significant association with household expenditure. An interesting characteristic of social capital in non-core household members is revealed: As expected, social capital by non-core family members has a positive and significant association with household expenditure, but social capital by non-core non-family members is negatively associated with household expenditure (though the association is weak in statistical terms). There is also a significant difference between the positive causal effect of non-core family members and the negative causal effect of non-core non-family members (p=0.003).

Figure 6.9: **Social capital SEM, by core and non-core family and non-family household members**



Model 1 in the OLS regression results below confirms the above SEM conclusions (Table 6.36). Social capital contributed by non-core family members has a significantly positive association with average household expenditure, while social capital contributed by non-core non-family members has a significantly negative association with average household expenditure. Having an additional non-core family member with social capital will lead to a significant increase in average household expenditure of 32.3%, while having an additional non-core non-family

member with social capital will result in a significant 32.3% decrease in average household expenditure (the difference is also statistically significant at a 1% level of significance: $p<0.001$). The largely significant influence of migration on average household expenditure is also confirmed by Model 1. Since the association by core family member is not statistically significant, no significant influence by the partial coefficient on migration is noticed in Model 2. Model 3 shows a significant partial coefficient by the interaction term. The average household expenditure by a migratory household is significantly higher than that of a non-migratory household, and this significantly positive effect is even increased for every additional non-core family member with social capital (0.370). Model 4 shows similar results as Model 1, with no significant influence by the partial slope coefficient as indicated by the interaction term, while Model 5 confirms all the conclusions drawn from Model 1 to Model 4 above. Again, the positive effect that migration has on average household expenditure is even more pronounced when an additional non-core family member obtains some form of social capital. Model 6 focuses only on the interactions in migratory households by social capital in respect of core family, non-core family and non-core non-family members. The positive effect of migration in migratory households increases when an additional non-core family member obtains social capital (0.591), while an additional non-core non-family member with social capital will decrease the positive effect of migration (-0.365). All the models are overall significant in explaining the variation in average household expenditure (logged) and all have R^2 values in excess of 0.093.

Table 6.36: Household expenditure, by migration and social capital: family vs non-family members

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dynasty household size	0.028**	0.028**	0.030**	0.028**	0.030**	0.034***
Dynasty dependency ratio	-0.595***	-0.596***	-0.602***	-0.597***	-0.603***	-0.633***
Dynasty migration	0.428***	0.407***	0.392***	0.422***	0.381***	0.355***
Number of individuals with social capital						
Core members (family)	0.059	0.036	0.061	0.058	0.048	
Non-core members (family)	0.323***	0.324***	0.232**	0.319***	0.234**	
Non-core members (non-family)	-0.323***	-0.333***	-0.379***	-0.407**	-0.418**	
Interactions						
Migration * Any social capital (core members: family)		0.079			0.040	0.090
Migration * Any social capital (non-core members: family)			0.370**		0.357**	0.591***
Migration * Any social capital (non-core members: non-family)				0.141	0.060	-0.365**
Constant	7.727***	7.731***	7.729***	7.731***	7.733***	7.750***
Obs	507	507	507	507	507	507
F (prob)	11.64 (0.000)	10.19 (0.000)	13.27 (0.000)	10.58 (0.000)	10.75 (0.000)	12.92 (0.000)
R-squared	0.1018	0.1022	0.1062	0.1021	0.1064	0.0930

One can therefore conclude that social capital contributed by non-core family members and non-core non-family members, has opposing but significant associations with household welfare. Having additional non-core family members with social capital will lead to an increase in average household expenditure (i.e. poverty alleviation). Conversely, having additional non-core non-family members with social capital will lead to a decrease in average household expenditure. The two outcomes have opposing effects on the positive influence of migration on average household expenditure. Additional non-core family members with social capital will increase the already positive effect of migration on average household expenditure, while additional non-core non-family members with social capital will lead to a decrease in the positive effect of migration on average household expenditure.

6.6.5 Employment

Figure 6.10 depicts a structural equation model (SEM) for household welfare, migration and the number of core and non-core household members employed. All three have a highly significant and positive association with household expenditure in dynasty households. There are however no significant differences between the positive associations for core individuals and non-core individuals (p=0.119). Therefore, as expected, any addition of employed members impacts positively on the welfare of dynasty households.

Figure 6.10: **Employment SEM, by core and non-core dynasty household members**

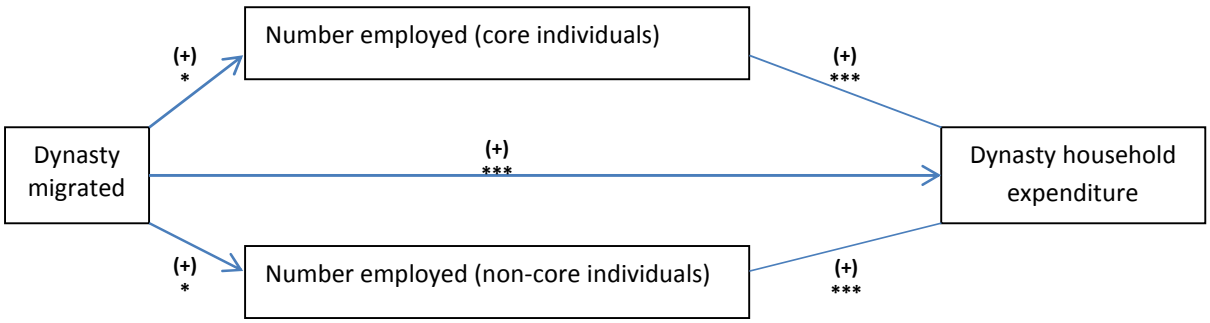


Table 6.37 below shows the OLS regression results for the SEM model above. Not surprisingly, the inclusion in the model of employment eliminates the significant associations of the size of the household and the dependency ratio with average household expenditure. The

addition to the household of employed members is likely to lower the dependency ratio and be correlated with household size, thus offering some control for household composition. In Model 1, migration still has a largely positive and significant influence on average household expenditure (logged). Model 1 also confirms the conclusions of the SEM model above, thereby indicating the significant and largely positive association of both the employment by core and non-core household members with household expenditure. Even though an additional employed core member will increase average household expenditure by 44.8%, an additional employed non-core member will increase average household expenditure by 48.3%. The difference is however not statistically significant (p=0.648). Model 2 confirms the conclusions from Model 1, namely that the partial effect of migration has no significant association with average household expenditure, which is also true for models 3 and 4. Model 5 shows surprising results regarding migration.

Table 6.37: **Household expenditure, by migration and employment: core vs non-core members**

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5
Dynasty household size	0.005	0.006	0.005	0.006	0.026**
Dynasty dependency ratio	-0.213	-0.210	-0.222	-0.220	-0.471***
Dynasty migration	0.301***	0.230**	0.237***	0.158	-0.198**
Number of individuals employed					
Core members	0.448***	0.393***	0.443***	0.385***	
Non-core members	0.483***	0.479***	0.438***	0.431***	
Interactions					
Migration * Employed (core members)		0.140		0.148	0.528***
Migration * Employed (non-core members)			0.117	0.125	0.534***
Constant	7.313***	7.332***	7.338***	7.360***	7.732***
Obs	507	507	507	507	507
	44.26	36.15	37.16	31.14	23.66
F (prob)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.2851	0.2873	0.2871	0.2896	0.1928

In Model 5 above, migration has a negative and significant effect on household welfare, but this negative is counteracted by the positive and significant partial effects of employment. Additional employed core or non-core household members from migratory households have a positive and significant effect on the influence that migration has on average household expenditure. There is no significant difference between the partial coefficients of additional employed core or non-core individuals (p=0.968). One can therefore conclude that

employment has a significant and positive association with household welfare, and that the effect is more pronounced in migrating households. All the models are overall significant in explaining the variation in average household expenditure (logged) and the R^2 values are all more than 0.192.

Figure 6.11 extends the SEM model above by drawing a distinction between the family and non-family relations of non-core household members. Migration has a significantly positive causal effect on average household expenditure, as reported in all the other SEM models. Irrespective of whether it be a core or a non-core individual who is employed, or a family or non-family household member who is employed, employment has a strong and significantly positive association with dynasty household expenditure, and there are no significant differences between the individual effects. This confirms that employment is the main contributor to household welfare.

Figure 6.11: **Employment SEM, by core and non-core family and non-family household members**

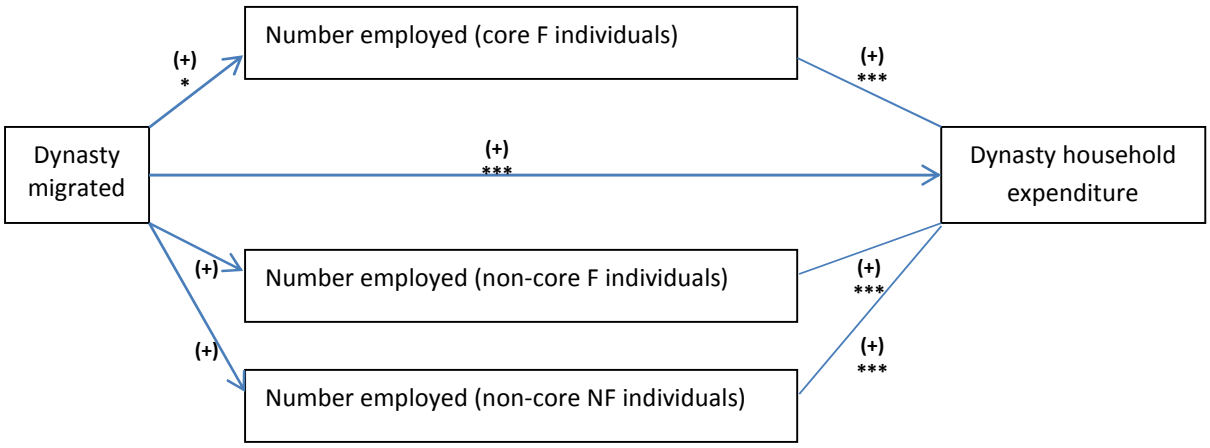


Table 6.38 summarises the OLS regression results, given the further distinction between family and non-family non-core members. Again, the significant associations for household size and the dependency ratio are eliminated in models 1 to 5. Model 1 reflects the large and significant impact of migration on average household expenditure. Each additional employed individual, irrespective of their core or family relationship status, has a large and significantly positive association with average household expenditure. There are no significant differences

between the effects of additional employed core family, non-core family or non-core non-family members on average household expenditure (p>0.100). Models 2, 3, 4 and 5 confirm the results of Model 1 with none of the partial effects of the interactions being significant. Model 6 shows the opposite (though it is similar to the SEM model) by indicating a negative partial effect of migration on average household expenditure. This negative effect is again counteracted by the positive influence of employment in migratory households. Model 6 shows that an additional employed core family member, non-core family member or non-core non-family member will have a positive association with household welfare if the employed individual lives in a migratory household. This may, as indicated in the literature, emphasise migration as a possibility in respect of employment and poverty alleviation.

Table 6.38: **Household expenditure, by migration and employment: family vs non-family members**

Log (household expenditure)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dynasty household size	0.005	0.006	0.005	0.006	0.007	0.026**
Dynasty dependency ratio	-0.226	-0.222	-0.229	-0.230	-0.232	-0.478***
Dynasty migration	0.300***	0.228**	0.269***	0.281***	0.160	-0.197**
Number of individuals employed						
Core members (family)	0.450***	0.395***	0.449***	0.447***	0.385***	
Non-core members (family)	0.476***	0.472***	0.443***	0.477***	0.434***	
Non-core members (non-family)	0.502***	0.494***	0.505***	0.451***	0.431***	
Interactions						
Migration * Employed (core members: fam)		0.144			0.155	0.536***
Migration * Employed (non-core members: fam)			0.084		0.100	0.510***
Migration * Employed (non-core members: non-fam)				0.117	0.154	0.567***
Constant	7.318***	7.337***	7.331***	7.326***	7.363***	7.732***
Obs	507	507	507	507	507	507
F (prob)	36.66 (0.000)	30.75 (0.000)	31.31 (0.000)	32.46 (0.000)	24.53 (0.000)	20.67 (0.000)
R-squared	0.2851	0.2874	0.2859	0.2859	0.2896	0.1932

It may be concluded that employment enhances the positive effect of migration on average household expenditure and may thus be seen as one of the major determinants of household welfare.

6.7 Summary

The chapters' main conclusions can be summarised as follows:

Comparison of core and non-core members of dynasty households reveals the following:

- The high levels of education, remittance flows (inward and outward), social capital, the receiving of social grants, and also the levels of labour-force participation and employment in dynasty households are mainly found among core individuals rather than non-core individuals.
- Education, remittances, social capital, social transfers and employment in dynasty households are mainly found among the sons and daughters and, in some cases, the grandchildren of the 1993 household heads.

The following are key conclusions regarding intra-household dynamics in poor and non-poor dynasty households:

- Non-core individuals with high levels of education are more likely to live in poor households, while core individuals with higher levels of education live in non-poor households.
- Individuals sending and receiving remittances predominantly live in non-poor households. The majority of individuals sending and receiving remittances are core individuals rather than non-core individuals.
- The majority of individuals with social capital live in non-poor households and are mostly core individuals rather than non-core individuals.
- The majority of employed individuals live in non-poor households, while non-core individuals are more likely to be unemployed than core individuals.

One may therefore conclude that core members contribute more to poverty alleviation in dynasty households than do non-core household members.

The following are key conclusions regarding intra-household dynamics in migratory and non-migratory dynasty households:

- Within migratory households, non-core individuals are more likely to have attained a higher level of education than core individuals.
- Non-migratory households hold more social capital than migratory households, while core individuals are more likely to contribute to the levels of social capital in both migratory and non-migratory households than their non-core counterparts.
- Though the majority of grant recipients in non-migratory households are core individuals, the majority of grant recipients in migratory households are non-core individuals.
- Within migratory households, core individuals are more likely to be employed than are their non-core counterparts.

One may therefore conclude that characteristics of both core and non-core members of dynasty households are associated with migration.

The main conclusions from the regression analysis are as follows:

- In all instances, migration is positively and significantly associated with higher levels of household welfare.
- Inward remittances by core individuals are negatively associated with household welfare. Inward remittances by additional core family members decrease the positive effect of migration on household welfare.
- Social capital has conflicting associations with household welfare. The social capital provided by additional non-core family members is associated with an increase in household welfare, while the social capital provided by additional non-core non-family members is associated with a decrease in household welfare. The social capital provided by core members has no significant association with household welfare.

APPENDIX 6

Appendix 6.1: SEM results: migration and inward remittances in core and non-core individuals

Outcome	Direct effect		Direct effect		Indirect effect	
Household welfare	Non-standardised	Standardised	Core individuals Standardised	Non-core individuals Standardised	Non-standardised	Standardised
Migration	1569.91***	0.177***	-0.067	-0.030	70.79	0.008
Inward remittances – core individuals	-1132.50**	-0.092**				
Inward remittances – non-core individuals	-895.72	-0.061				
Chi^2		6.98				
Prob Chi2 (degrees of freedom)		0.6396 (9)				
CFI		1.000				
RMSEA		0.000				
R 2		0.037				

Appendix 6.2: SEM results: migration and inward remittances in core and non-core individuals (family vs non-family members)

Outcome	Direct effect		Direct effect			Indirect effect	
			Core family	Non-core family	Non-core non-family		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Standardised	Non-standardised	Standardised
Migration	1569.44***	0.177***	-0.067	-0.034	-0.003	71.25	0.008
Inward remittances – core family	-1132.80**	-0.092***					
Inward remittances – non-core family	-926.04	-0.051					
Inward remittances – non-core non-family	-839.51	-0.035					
Chi^2			7.93				
Prob Chi2 (degrees of freedom)			0.8931 (14)				
CFI			1.000				
RMSEA			0.000				
R 2			0.037				

Appendix 6.3: SEM results: migration and outward remittances in core and non-core individuals

Outcome	Direct effect		Direct effect		Indirect effect	
Household welfare	Non-standardised	Standardised	Core individuals Standardised	Non-core individuals Standardised	Non-standardised	Standardised
Migration	1420.30***	0.160***	0.137***	0.044	218.00**	0.025***
Outward remittances – core individuals	1547.57***	0.143***				
Outward remittances – non-core individuals	1541.09***	0.113***				
Chi^2		0.05				
Prob Chi2 (degrees of freedom)		1.000 (9)				
CFI		1.000				
RMSEA		0.000				
CD		0.046				
R 2		0.046				

Appendix 6.4: SEM results: migration and outward remittances in core and non-core individuals (family vs non-family members)

Outcome	Direct effect		Direct effect			Indirect effect	
Household welfare	Non-standardised	Standardised	Core family Standardised	Non-core family Standardised	Non-core non-family Standardised	Non-standardised	Standardised
Migration	1418.28***	0.160***	0.137***	0.014	0.050	220.35**	0.025**
Outward remittances – core family	1541.81***	0.142***					
Outward remittances – non-core family	1412.06*	0.082*					
Outward remittances – non-core non-family	1741.72*	0.083*					
Chi^2			2.5				
Prob Chi2 (degrees of freedom)			0.9997 (14)				
CFI			1.000				
RMSEA			0.000				
R 2			0.047				

Appendix 6.5: SEM results: migration and social grant income in core and non-core individuals

Outcome	Direct effect		Direct effect		Indirect effect	
	Household welfare		Core individuals	Non-core individuals		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Non-standardised	Standardised
Migration	1638.06***	0.185***	-0.026	0.036	2.74	<0.001
Any grant – core individuals	-1384.25***	-0.154***				
Any grant – non-core individuals	-798.04**	-0.102**				
Chi^2		5.08				
Prob Chi2 (degrees of freedom)		0.8275 (9)				
CFI		1.000				
RMSEA		0.000				
R 2		0.0372				

Appendix 6.6: SEM results: migration and social grant income in core and non-core individuals (family vs non-family members)

Outcome	Direct effect		Direct effect			Indirect effect	
	Household welfare		Core family	Non-core family	Non-core non-family		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Standardised	Unstandardized	Standardized
Migration	1635.73***	0.184***	-0.019	0.012	0.045	5.048	<0.001
Social transfers – core family	-1476.49***	-0.164***					
Social transfers – non-core family	-1017.65**	0.103**					
Social transfers – non-core non-family	-394.91	-0.030					
Chi^2			7.79 (14)				
Prob Chi2 (degrees of freedom)			0.900				
CFI			1.000				
RMSEA			0.000				
R 2			0.0377				

Appendix 6.7: SEM results: migration and social capital in core and non-core individuals

Outcome	Direct effect		Direct effect		Indirect effect	
	Household welfare		Core individuals	Non-core individuals		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Non-standardized	Standardized
Migration	1640***	0.185***	0.028	0.006	0.7885	<0.001
Social capital – core individuals	-73.97	-0.009				
Social capital – non-core individuals	508.34	0.056				
Chi^2		16.74				
Prob Chi2 (degrees of freedom)		0.053 (9)				
CFI		0.745				
RMSEA		0.041				
R 2		0.0349				

Appendix 6.8: SEM results: migration and social capital in core and non-core individuals (family vs non-family members)

Outcome	Direct effect		Direct effect			Indirect effect	
	Household welfare		Core family	Non-core family	Non-core non-family		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Standardised	Unstandardized	Standardized
Migration	1722.59***	0.194***	0.028	-0.033	0.070	-81.576	-0.009
Social capital – core family	-106.95	-0.128					
Social capital – non-core family	1201.88**	0.111**					
Social capital – non-core non-family	-1422.37*	-0.075*					
Chi^2			20.38				
Prob Chi2 (degrees of freedom)			0.1185 (14)				
CFI			0.841				
RMSEA			0.03				
R 2			0.0443				

Appendix 6.9: SEM results: migration and employment in core and non-core individuals

Outcome	Direct effect		Direct effect		Indirect effect	
	Household welfare		Core individuals	Non-core individuals		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Non-standardised	Standardized
Migration	1195.17***	0.134***	0.084*	0.079*	449.15**	0.05**
Employment – core individuals	1777.15***	0.266***				
Employment – non-core individuals	2046.17***	0.352***				
Chi^2		3.26				
Prob Chi2 (degrees of freedom)		0.8597 (7)				
CFI		1.000				
RMSEA		0.000				
R 2		0.0352				

Appendix 6.10: SEM results: migration and employment in core and non-core individuals (family vs non-family members)

Outcome	Direct effect		Direct effect			Indirect effect	
	Household welfare		Core family	Non-core family	Non-core non-family		
Household welfare	Non-standardised	Standardised	Standardised	Standardised	Standardised	Unstandardized	Standardized
Migration	1190.30***	0.132***	0.084*	0.055	0.052	453.57**	0.05**
Employed – core family	1812.03***	0.268***					
Employed – non-core family	1961.80***	0.285***					
Employed – non-core non-family	2241.69***	0.238***					
Chi^2			13.33				
Prob Chi2 (degrees of freedom)			0.3456 (12)				
CFI			0.990				
RMSEA			0.015				
R 2			0.034				

Conclusion

A coping strategy for dealing with poverty – one of central importance in this study – is migration. Since migration is a complex and multifaceted phenomenon, there are a great number of migration theories (Boyle et al., 1998; Arango, 2000; Kok et al., 2003). In terms of the New Economics of Migration theory, migration is a household decision rather than an individual decision, it is part of a risk-management strategy aimed at income diversification and moreover a coping mechanism for dealing with poverty via remittance flows (Bilsborrow et al., 1987; Greenwood, 1988; Lauby & Stark, 1988; Junming, 1997; Arango, 2000; Zachariah et al., 2001; Kok et al., 2003; Posel, 2003; Adams, 2005; World Bank, 2005).

Given the multifaceted and complex nature of migration, remittances and poverty, the aim of this study was to investigate the dynamics of poverty, migration and remittances in the context of the social transformation of South Africa. To this end, the study employed the data of the 1993 Project for Statistics on Living Standards and Development (PSLSD), together with the follow-up 1998 and 2004 data of the KwaZulu-Natal Income Dynamics Study (KIDS). A two-pronged approach was followed in respect of investigating poverty, migration, remittances and the intergenerational transfer of poverty in dynasty households. The first approach (Chapters 3–5) investigated inter-household dynamics in core and dynasty households by using household-level data. For this purpose, *core* and *dynasty* households were identified. A panel data set was created by linking the 1993 core households, the 1998 core households and the 2004 core households to the cross-sectional data for the 2004 dynasty households. For the inter-household analysis, the focus was on core dynamics and their link with outcomes in dynasty households. The second intra-household approach (Chapter 6) employed intra-dynasty household dynamics to investigate their effects on poverty in dynasty households. For this analysis, core and non-core members and also family and non-family members of dynasty households were identified. Individual-level data were combined with household-level data to examine intra-household composition and poverty in dynasty households.

The main results of the first part of the study can be summarized as follows:

- Chapter 3, employing household-level data, investigated the intergenerational transfer (IGT) of poverty from core households to dynasty households. The IGT of headcount poverty, and the depth and the severity of poverty were analysed, while poverty dominance in dynasty households was compared across poverty dynamics in core households. The results revealed that dynasty households had higher average and median levels of household expenditure, and experienced lower levels in respect of headcount poverty and of the depth and the severity of poverty than did their core counterparts. The poverty dominance analysis revealed that, irrespective of the levels of income and the poverty measure employed in the process of analysis, dynasty households in the post-apartheid era were found to have been better off than their core counterparts.

  The significant influence of the IGT of poverty from core households to dynasty households was also confirmed. The reduced-form regression results indicated that the post-apartheid dynasty households who were linked to either a transitory or chronically poor core household were not only more likely to be poor but also lay farther below the poverty line and experienced poverty more severely than did dynasties linked to non-poor cores. The regression results indicated that the probability of being poor was 40.3% higher in dynasty households linked to a chronically poor core than in dynasty households linked to non-poor core households. The probability of being poor was also 14.5% higher if the said dynasty household was linked to a transitory poor core household than in the case of a dynasty household who was linked to a non-poor core household. The analysis supported the existence of the IGT of poverty for households living in KwaZulu-Natal. This result confirmed findings by Carter and May (1999) and Roberts (2000) who had indicated that 22.3% of the African population in KwaZulu-Natal had been chronically poor in 1998, 86% of whom had been trapped in poverty. Finn and Leibbrandt (2013) likewise indicated that in 2012, 85% of the poor people in South Africa happened to be chronically poor.

- Chapter 4 investigated household migration and its determinants in both core and dynasty households. It also empirically investigated the effects of migration and of migratory transitions on poverty in dynasty households. The results indicate the mobility of core households to be relatively higher in the post-apartheid era than in the late-apartheid era.

  While Massey et al. (1993) suggested that earlier migration might facilitate continuous or future movements, results failed to confirm this. Dynasty households linked to non-mobile cores were found to be most mobile. There is thus little evidence of strong intergenerational migration histories. Despite this, results seem to offer some evidence of joint migration: 24 of the 25 dynasty households who had migrated were found to have been linked to cores who had migrated in the same period.

  Migration may represent an important strategy for dealing with the remnants of post-apartheid poverty. Bivariate analysis, poverty dominance analysis and the regression analysis revealed that dynasties from a chronically poor background were more likely to migrate than were either dynasties from a transitory-poor or never-poor background. This implies that dynasty households from a chronically poor core household, as the literature suggests, use migration as a risk-diversification strategy in an attempt to escape from poverty. The results also revealed significantly lower levels of headcount poverty, and of the depth and the severity of poverty in migratory dynasty households than in non-migratory dynasties. One may therefore conclude that the New Economics of Migration theory hold for dynasty households, since the headcount poverty and the depth and the severity of poverty are statistically significantly lower for migratory dynasties than for non-migratory dynasties. Regression analyses however indicate that, even though migration by a household may decrease the probability that the household is poor, the dominant determinant of dynasty poverty remains the existence of the intergenerational transfer of poverty.

- Chapter 5 was the last chapter that employed the first analytical approach. Chapter 5 examined the remittance behaviour of core households and dynasty households. In this chapter, both inward and outward remittances and their determinants were analysed. The effects of remittances and of remittance transitions on household poverty in dynasty households were empirically determined. Results indicated that in 2004, 38.6% of all core households had ever sent remittances, while almost 25% (24.8%) of all dynasty households had received remittances. On average, in 2004, inward remittances contributed 5.1% to total dynasty income and 22.6% of the total household income of dynasties receiving remittances.

  Poverty in core households is a barrier to remittances. Results indicated that 46.5% of cores who had never been poor had ever sent remittances over the 1993 to 2004 period, while 23.3% of the chronically poor cores had ever sent remittances. The mean and the median value of remittances sent by core households were also significantly lower for chronically poor cores than for either transitory- or never-poor cores. Remittances as a co-insurance motive for remitting also seem evident, as dynasties linked to a chronically poor background were more likely to and actually did receive higher average and median values of inward remittances than did dynasties from transitory- or non-poor backgrounds. As regards poverty in dynasty households, the results indicated that the headcount poverty, and the depth and the severity of poverty were significantly lower for dynasties receiving remittances. This suggests that remittances decrease poverty by increasing household income.

The second analytical approach was employed in investigating intra-dynasty household dynamics by comparing core and non-core members in dynasty households. This approach first identified core and non-core members in dynasty households. Individuals were identified as core members if they had been interviewed as part of a core household for the first time in either 1993 or 1998. Non-core individuals were those individuals who had first been interviewed in 2004. The individual-level data were combined with household level data. This was followed by an examination of the intra-household composition of dynasty households. Core and non-core individuals were also described

and compared in accordance with the predictors of poverty such as education, remittances, social capital, social transfers and employment status. Dynasty household members were further disaggregated into family and non-family to investigate possible differences in the role of family status. The intra-dynasty household characteristics of these core and non-core members was compared in terms of whether they were members of poor/non-poor households or of migratory/non-migratory households. The individual-level analysis was followed by an aggregation of the data for household-level analysis on migration and on household welfare in dynasty households.

The main results of the second part of the study can be summarised as follows:

- Intra-household comparisons suggested that core individuals were crucial for the survival of dynasty households. Education, remittance flows (inward and outward), social capital, social grants and also labour-force participation and employment in dynasty households were mainly found among core individuals rather than among non-core individuals.

- Core members also stands to contributed more to poverty alleviation in dynasty households than did non-core household members in the sense that they seem to have enjoyed higher levels of education, they were involved in remittance flows, they had social capital and they had been more likely to be employed than non-core individuals.

- Characteristics of both core and non-core members of dynasty households were found to be associated with migration. In migratory households, non-core individuals were more likely to have attained a higher level of education than their core counterparts. Surprisingly, non-migratory households held more social capital than did migratory households, while core individuals had been more likely to contribute to the levels of social capital in both migratory and non-migratory households than their non-core counterparts. The majority of grant recipients in

non-migratory households were core individuals, whereas the majority of grant recipients in migratory households were non-core individuals. Within migratory households, core individuals were more likely to have been employed than their non-core counterparts.

- Social capital provided by additional non-core family members was associated with an increase in household welfare, while the social capital provided by additional non-core non-family members was associated with a decrease in household welfare. One may thus conclude that the social capital provided by family members is important in respect of poverty alleviation.

Limitations

The study has the following limitations:

The 1998 and 2004 KIDS surveys only included African and Indian households. It therefore limits our understanding of migration, remittances and poverty experienced by the other populations in South African.

With a view to investigating the household dynamics of dynasty households, this study included only those core households with split-off dynasty households who were interviewed. A total of 512 dynasty households were linked to 324 core households, since some core households had multiple dynasties. Because of selection, this may however have produced biased results.

The sub-group analyses in this study were based on limited sample sizes because of the relatively small total interviews, thus constraining the statistical power of the analysis.

Dynasty households, as defined in this study, were only interviewed in 2004. This resulted in a lack of long-term dynamic views of the characteristics of such households.

This study also lacks household head data, which may exert significant influence on explaining household migration, remittances and poverty. The problem originates from the fact that all household members interviewed in 2004 explained how they had been related to the original 1993 household head, but did not identify the 2004 head of the household, nor the relation of core members to the 2004 head. This would have allowed a more complete picture of intra-household dynamics.

Although we recognise the possibility of spatial differences between households in urban and rural areas, data on urban and rural locality is not available in all the data sets employed.

The reduced form regression models employed in this study may be susceptible to omitted variables bias. While it is therefore acknowledged that this may be the case, I do however believe that the simplicity of the model's specification has helped to shed light on the links between poverty, migration and remittances.

Any study employing panel (longitudinal) data must acknowledge the fact that there may be substantial, non-random attrition (see May, Carter, Haddad & Maluccio (1999) and Maluccio (2000) for discussions regarding attrition in the KIDS panel data sets). Since panel data ensure a dynamic overview of households, one believes that the positive contribution made by the dynamic nature of the analysis overshadows the negative contribution of possible attrition.

Another limitation worth mentioning is the period covered by the panel data set. The period – although it spanned 11 years – may still have been too short to have enabled one to study intergenerational shifts in poverty.

Regards the effect of remittances on poverty, it is important to note that the effects may be overestimated due to the "variance method" being employed in this study. Additional methods such as the instrumental variable (IV) approach or the counterfactual method (all discussed in Chapter 1) may result in different conclusions.

Another important point worth emphasizing is the problem of causation. Only migration, which was observed prior to the other variables employed, may yield conclusions regarding causation. Reverse causality between observed variables at the same point in time may influence results and must only be interpreted as associations.

Finally yet importantly, a study employing survey data must acknowledge the possibility of survey problems and of inconsistency as regards questions and various interviewers over the survey periods. Among others, this study acknowledges that data on migration and social capital and non-labour income (including social grants) may, in the following instances, have yielded biased results:

- As regards migration: Migratory transitions in core households and their effect on migration and poverty in dynasty households could only be determined for the 1993 to 1998 period and the 1998 to 2004 period because a similar question on household migration had not been asked in the original 1993 PSLSD study, thus failing to provide evidence regarding apartheid migration before 1993. Also, the fact that the specific year in which the household migrated was not asked, served to limit more specific analysis. Another limitation regarding migration analysis lay in the nature of the question itself. The question only asked, “Is this household in the same community as [in] 1993/1998?”, and did not define specific borders, which may have compromised the correctness (over-state) of the migratory results in that moves within the immediate community may not necessarily represent true migratory moves.

- As regards social capital: The 2004 KIDS questionnaire only made provision for completion by four household members. Although the option of “all” household members could be applied, it limited the specific and individual information of the individuals regarding their levels of social capital. More than four household members (though not the whole household) may have social capital, which may result in missing data and – by extension – to an understating of the true levels of social capital in the household. Data on social capital in 1993 also reflected significantly lower levels, which may have been the result of underestimation because the original 1993 PSLSD

had not included questions on social capital. Individuals were asked in the 1998 follow-up survey to recall their participation in organisations in 1993.

- As regards non-labour income (social grants): The 2004 KIDS questionnaire only made provision for completion by three household members. This may result in an underestimation of the impact social grants may have on dynasty household welfare.

Contribution

To the best of our knowledge, this study is the first to use the core-dynasty inter-household perspective, together with the core and non-core intra-household analysis of the household members of the KIDS data to investigate migration, remittances and poverty dynamics. This research is unique and contributes to the poverty literature insofar as it investigates the linkages between poverty and poverty dynamics, on the one hand, and migration and remittances, on the other. This study also adds to the knowledge on household formation and composition. This study also contributes to the literature on migration and remittance flows and adds to our understanding of how migration relates to poverty dynamics in South African households.

Avenues for further research include employing alternative methods, such as the instrumental variable (IV) or counterfactual method to test the robustness of results and investigating the link between outward remittances by dynasty households and poverty in core households.

References

Abdelali-Martini, M. & Hamza, R. (2014) How do migration remittances affect rural livelihoods in drylands? Journal of international development, Volume 26, pp.454-470.

Abdelali-Martini, M; Goldey, P.; Jones, G. & Bailey, E. (2003) Towards a Feminization of Agricultural Labour in Northwest Syria. Journal of Peasant Studies, Volume 30(2), pp.71-94.

Acharya, C. & Leon-Gonzalez, R. (2014) How do migration and remittances affect human and capital investment? The effects of relaxing information and liquidity constraints. The Journal of Development Studies, Volume 50 (3), pp.444-460.

Acock, A. (2013) Discovering structural equation modelling using Stata. Stata Press books.

Acosta, P.; Calderon, C.; Fajnzylber, P. & Lopez, H. (2006) Remittances and development in Latin America. The World Economy, Volume 10, pp.957-987.

Acosta, P.; Calderon, C.; Fajnzylber, P. & Lopez, H. (2008) What is the impact of international remittances on poverty and inequality in Latin America. World Development, Volume 36 (1), pp.89-114.

Adaawen, S. & Owusu, B. (2013) North-South migration and remittances in Ghana. African review of economics and finance, Volume 5 (1), pp.1-37.

Adams, R. & Cuecuecha, A. (2013) The impact of remittances on investment and poverty in Ghana. World Development, Volume 50, pp.24-40.

Adams, R. & Page, J. (2005) Do international migration and remittances reduce poverty in developing countries? World Development, Volume 33(10), pp.1645-1669.

Adams, R. & Page, J. (2005) The Impact of International Migration and Remittances on Poverty. Chapter 14 in Remittances: Development Impact and Future prospects. Edited by Maimbo, S & Ratha, D. The World Bank.

Adams, R. (1989) Worker remittances and inequality in rural Egypt. Economic Development: Cultural Change, Volume 38(1), pp.45-71.

Adams, R. (1992) The effects of Migration and Remittances on Inequality in Rural Pakistan. The Pakistan Development Review, Volume 31(4), pp.1189-1206.

Adams, R. (2005) Remittances, Household Expenditure and Investment in Guatemala. World Bank – Development Research Group. World Bank Policy Research, Working Paper 3532.

Adams, R. (2006) Remittances and poverty in Ghana. World Bank Policy Research, Working Paper 3838, pp.1-41.

Adams, R. (2011) Evaluating the economic impact of international remittances on developing countries using household surveys: A literature review. Journal of Development Studies, Volume 47 (6), pp.809-828.

Addison, E. (2004) The macroeconomic impact of remittances in Ghana. Paper presented at Conference on Migration and development in Ghana, September.

Agarwal, R. & Horowitz, A. (2002) Are international remittances altruism or insurance? Evidence from Guyana using multiple-migrant households. World Development, Volume 30 (11), pp. 2033-2044.

Ahlburg, D. & Brown, R. (1998) Migrants' intentions to return home and capital transfers: A study of Tongans and Samoans in Australia. The Journal of Development Studies, Volume 35(2), pp.125-151.

Akay, A.; Giuletti, C.; Robalino, J. & Zimmerman, K. (2012) Remittances and well-being among rural-to-urban migrants in China. Leibniz Information Centre for Economics, Working Paper 6631, pp.1-34.

Ali, A. & Khan, R. (2014) Do remittances contribute to the agricultural investment among small scale farmers? Humanities and Social Sciences, Volume 21 (2), pp.143-151.

Amuedo-Dorantes, C. & Pozo, S. (2002) Remittance as insurance: Evidence from Mexican migrants. North American winter meetings of the Econometric Society, pp.1-38.

Amuedo-Dorantes, C. & Pozo, S. (2006) Remittances as insurance: evidence from Mexican immigrants. Journal of Population Economics, Volume 19, pp.227-254.

Anyanwu, J. & Erhijakpor, A. (2010) Do international remittances affect poverty in Africa? African Development Review, Volume 22, pp. 51-91.

Arango, J. (2000) Explaining migration: A critical view. International Social Science, Volume 52 (165), pp.283-296.

Ardington, C.; Barnighausen, T.; Case, A. & Menendez, A. (2013) Social protection and labour market outcomes of youth in South Africa. A Southern Africa Labour and Development Research Unit, Working Paper 96, Cape Town: SALDRU, University of Cape Town.

Arellano, M. & Bover, O. Another look at the instrumental variable estimation of error-components models. Journal of Econometrics, Volume 68(1), pp.29-51.

Banerjee, B. (1984) The probability, size and uses of remittances from urban to rural areas in India. Journal of Development Economics, Volume 16 (3), pp. 293-311.

Barro, R. (1974) Are government bonds net wealth? Journal of Political Economy, Volume 82(6), pp.1095-1117.

Becker, G. (1974) A theory of social interactions. Journal of political economy, Volume 82, pp1063-1093.

Betti, G. & Lundgren, L. (2012) The impact of remittances and equivalence scales on poverty in Tajikistan. Central Asian survey, Volume 31 (4), pp.395-408.

Beyene, B. (2014) The effects of international remittances on poverty and inequality in Ethiopia. The Journal of Development Studies, Volume 50 (10), pp.1380-1396.

Bilsborrow, R.; McDevitt, T.; Kossoudji, S. & Fuller, R. (1987) The impact of origin community characteristics on rural-urban out-migration in a developing country. Demography, Volume 24 (2), pp.191-210.

Biyase, M. (2012) The relationship between poverty and remittances in South Africa. Conference paper: Strategies to Overcome Poverty & Inequality. University of Cape Town. 3-7 September.

Biyase, M. (2014) Poverty and remittances in South Africa: an instrumental variables analysis. Environmental Economics, Volume 5 (4), pp.61-67.

Bouoiyour, J. & Miftah, A. (2014) The impact of migrant workers' remittances on the living standards in Morocco: A propensity score matching approach. Migration letters, Volume 12 (1), pp.13-27.

Boyle, P.; Halfacree, K. & Robinson, V. (1998) Exploring Contemporary Migration. Longman Harlow. Book

Brown, R. & Ahlburh, D. (1999) Remittances in the South Pacific. International Journal of Social Economics, Volume 26 (1), pp.325-344.

Brown, R. & Jimenez, E. (2008) Estimating the net effects of migration and remittances on poverty and inequality: Comparison of Fiji and Tonga. Journal of International Development, Volume 20, pp.547-571.

Brown, R. & Jimenez, E. (2011) Subjectively-assessed welfare and international remittances: Evidence from Tonga. Journal of Development Studies, Volume 47 (6), pp.829-845.

Brown, R. (1997) "Estimating remittance functions for Pacific Island migrants". World Development, Volume 25 (4), pp.613-626.

Browne, M. & Cudeck, R. (1993) Alternative ways of assessing model fit. In K.A. Bollen and J.S. Long (Eds.), Testing Structural Equation Models, pp. 136-162. Beverly Hills: Sage.

Brummer, D. (2002) Labour migration and HIV/AIDS in Southern Africa. IOM South Africa, pp.1-26.

Cadwallader, M. (1992) Migration and residential mobility: Macro and micro approaches. The University of Wisconsin press, United States of America.

Cai, Q. (2003) Migrant remittances and family ties: a case study in China. International Journal of Population Geography, Volume 9(6), pp.471-183.

Caliendo, M. & Kopeinig, S. (2008) Some Practical Guidance for the implementations of Propensity Score Matching. Journal of Economic Surveys, Volume 22(1), pp.31-72.

Carter, M. & May, J. (1999) Poverty, livelihood and class in rural South Africa. World Development, Volume 27(1), pp.1-20.

Chand, R. (2013) Labour migration as a livelihood strategy in Far East Bhutan: a case study of a marginal Bhutanese community. Hrvatski geografski glasnik, Volume 75 (2), pp.41-57.

Chimhowu, A.; Piesse, J. & Pinder, C. (2003) Assessing the impact of migrant workers' remittances on poverty. New Directions in Impact Assessment for Development: Methods and Practice. Conference, November. Institute for Development Policy and Management, University of Manchester and Women in Sustainable Enterprise Development Ltd.

Chimhowu, A.; Piesse, J. & Pinder, C. (2005) The Socioeconomic Impact of Remittances on Poverty Reduction. Chapter 3 Remittances: Development impact and Future Prospects. Edited by Maimbo, S. & Ratha, D. Book.

Chiodi, V.; Jaimovich, E. & Montes-Rojas, G. (2012) Migration, remittances and capital accumulation: Evidence from rural Mexico. Journal of Development Studies, Volume 48 (8), pp.1139-1155.

Chronic Poverty Research Centre. (2005) The chronic poverty report 2004-05. Chronic Poverty Research, pp.1-138.

Chronic Poverty Research Centre. (2010) Escaping poverty traps. Chronic Poverty Research, The Chronic Poverty Report 2008-09, pp.9-141.

Chukwuone, N.; Amaechina, E.; Iyoko, E.; Enebeli-Uzor, S. & Okpukpara, B. (2008) Analysis of Impact of remittances on poverty and inequality in Nigeria. Poverty and Economic Policy PMMA Network, pp. 1-34.

Clark, D. (1986) A cognitive approach to panic. Behaviour Research and Therapy, Volume 24 (4), pp.461-470.

Clarke, R. & Eyal, K. (2014) Microeconomic determinants of spatial mobility in post-apartheid South Africa: Longitudinal evidence from the National Income Dynamics Study. Development Southern Africa, Volume 31(1), pp.168-194.

Coffe, H. & Geys, B. (2007) Toward an empirical characterization of bridging and bonding social capital. Non-profit and voluntary sector quarterly, Volume 36 (1), pp.121-139.

Cohen, J. (2005) Remittance Outcomes and Migration: Theoretical Contests, Real Opportunities. Studies in Comparative International Development, Volume 40(1), pp.88-112.

Collinson, M.; Tollman, S.; Kahn, K. & Clark, S. (2009). Highly prevalent circular migration: Households, mobility and economic status in rural South Africa. Conference paper: African Migration in Comparative Perspective, Johannesburg, South Africa.

Conway, D.; Potter, R. & St. Bernard, G. (2012) Diaspora return of transnational migrants to Trinidad and Tobago: the additional contributions of social remittances. International Development Planning Review, Volume 34 (2), pp.189-209.

Cox, D. (1987) Motives for private income transfers. Journal of Political Economy, Volume 95 (3), pp.508-546.

Cox, D.; Eser, Z. & Jimenez, E. (1998) Motives for private transfers over the life cycle: An analytical framework and evidence for Peru. Journal of Development Economics, Volume 55 (1), pp.57-80.

Cox, D.; Hansen, B. & Jimenez, E. (2004) How responsive are private transfers to income? Evidence from a laissez-faire economy. Journal of Public Economics, Volume 88(9-10), pp.2193-2219.

Cox-Edwards, A. & Ureta, M. (2003) International migration, remittances, and schooling: evidence from El Salvador. Journal of Development Economics, Volume 72 (2), pp.429-461.

Crush, J.; Williams, B.; Gouws, E. & Lurie, M. (2005) Migration and HIV/AIDS in South Africa. Development Southern Africa, Volume 22 (3), pp.293-318.

Crush, J.; Williams, V. & Peberdy, S. (2005) Migration in South Africa. Global Commissions on International Migration, pp.1-39.

Cushing, B. (1999) Migration and persistent poverty in rural America. Migration and Restructuring in the U.S.A: Geographic Perspective, Rowman & Littlefield, pp. 15-36.

Daniels, R.; Partridge, A.; Kekana, D. & Musundwa, S. (2013) Rural Livelihoods in South Africa. Southern Africa Labour and Development Research Unit, Working Paper Series Number 122 / NIDS Discussion Paper Number 2013/4.

De Haan, A. (1999) Livelihoods and poverty: The role of migration – A critical review of the migration literature. Journal of Development Studies, Volume 36 (2), pp.1-47.

De Haas, H. (2005) International migration, remittances and development: myths and facts. The World Quarterly, Volume 26 (8), pp.1269-1284.

De Jong, G. & Fawcett, J. (1981) Motivations for migration: an assessment and a value-expectancy research model. Migration decision making, New York, Pergamon, pp.13-58.

De Jong, G. (2000) Expectations, gender and norms in migration decision-making. Population Studies, Volume 54(3), pp.307-319.

De la Briere, B.; Sadoulet, E.; de Janvry, A. & Lamberts, S. (2002) The roles of destination, gender and household composition in explaining remittances: an analysis for the Dominican Sierra. Journal of Development Economics, Volume 68 (2), pp.309-328.

De la Fuente, A. (2010) Remittances and vulnerability to poverty in rural Mexico. World Development, Volume 38 (6), pp.828-839.

DFID (2007) Department for International Development. Moving out of poverty-making migration work better for poor people. Published by the Department for International Development.

Driskell, R. & Embry, E. (2007) Poverty and migration in the black belt: means of escape? Michigan Sociology Review, Volume 21, pp79-108.

Du, Y.; Park, A. & Wang, S. (2005) Migration and rural poverty in China. Journal of Comparative Economics, Volume 33, pp.688-709.

Esquivel, G. & Huerta-Pineda, A. (2007) Remittances and poverty in Mexico: a propensity score matching approach. Integration & Trade Journal, Volume 27, pp.45-71.

Evans, P. (2000) Fighting Marginalization with Transnational Networks: Counter-Hegemonic Globalization. Contemporary Sociology, Volume 29(1), pp.230-241.

Faist, T. (2008) Migrants as Transnational Development Agents: An Inquiry into the Newest Round of the Migration-Development Nexus. Population, Space and Place, Volume 14, pp. 21-42.

Fajnzylber, P. & Lopez, J. (2008) Remittances and Development: Lessons from Latin America. The World Bank, Washington, D.C.

Finn, A.; Leibbrandt, M. & Levinsohn, J. (2012) Income Mobility in South Africa: Evidence from the First Two Waves of the National Income Dynamics Study. SALDRU Working Paper 82 / NIDS Discussion Paper 2012/5. Cape Town: SALDRU, University of Cape Town.

Fitchen, J. (1995) Poverty in rural America: A case study. Waveland Pr Inc, pp.1-20.

Fitchen, J. (1995) Spatial redistribution of poverty through migration of poor people to depressed rural communities. Rural Sociology, Volume 60 (2), pp.181-201.

FitzGerald, D. (2000) Negotiating Extra-Territorial Citizenship: Mexican Migration and the Transnational Politics of Community. Monograph No. 2. Centre for Comparative Immigration Studies, University of California, San Diego. Book.

Fonta, W.; Ayuk, E.; Chukwa, J.; Onyukwu, O. & Agu, C. (2015) Dynamics of remittance utilization by Nigerian households. Progress in Development Studies, Volume 15 (4), pp.343-357.

Foulkes, M. & Newbold, K. (2008) Using alternative data sources to study rural migration: examples of Illinois. Population, Space and Place, Volume 14, pp.177-188.

Foulkes, M. & Schafft, K. (2010) The impact of migration on poverty concentrations in the United States, 1995-2000. Rural Sociology, Volume 75 (1), pp.90-110.

Frank, R. & Hummer, R. (2002) The other side of the paradox: The risk of low birth weight among infants of migrant and non-migrant households in Mexico. International Migration Review, Volume 36 (3), pp.746-765.

Frankel, J. (2011) Are bilateral remittances countercyclical? Open Economics Review, Volume 22, pp.1-16.

Frederick, J. (1976) Class, Race, and Gold: A Study of Class Relations and Racial Discrimination in South Africa. Routledge. Book.

Gaaliche, M. & Zayati, M. (2014) The causal relationship between remittances and poverty reduction in developing country: using a non-stationary dynamic panel data. Atlantic Review of Economics, Volume 1, pp. 1-12.

Gardner, R. (1981) Macrolevel influences on the migration decision process. Migration decision making: multidisciplinary approaches to microlevel studies in developed and developing countries. Pergamon Policy Studies on International Development. New York, Pergamon, pp.59-89.

Garip, F. (2012) Discovering diverse mechanisms of migration: The Mexico-US stream 1970-2000. Population and Development Review, Volume 38 (3), pp.393-433.

Garip, F. (2014) The impact of migration and remittances on wealth accumulation and distribution in rural Thailand. Demography, Volume 51, pp.673-698.

Gelderblom, D. & Kok, P. (1994) Urbanisation: South Africa's Challenge. Volume 1. Book

Giannetti, M.; Federici, D. & Raitanco, M. (2009) Migrant remittances and inequality in Central-Eastern Europe. International Review of Applied Economics, Volume 23 (3), pp.289-307.

Goldring, L. (1998) The Power of Status in Transnational Social Fields. Comparative Urban and Community Research, Volume 6, pp.165-195.

Goldring, L. (2002) The Mexican State and Transmigrant Organizations: Negotiating the Boundaries of Membership and Participation. Latin American Research Review, Volume 37(3), pp. 55-99.

Goldring, L. (2004) Family and collective remittances to Mexico: A multi-dimensional typology. Development and Change, Volume 35 (4), pp.799-840.

Governor-General. (1920) The Native Affairs Act of 1920.

Grasmuck, S. & Pessar, P. (1991) Between Two Islands. Dominican International Migration. University of California Press. Berkeley Los Angeles London. Book.

Greenwood, M. (1975) Research on international migration in the United States: A survey. Journal of Economic Literature, Volume 13 (2), pp.397-433.

Greenwood, M. (1985) Human Migration: Theory, Models, and Empirical studies, Journal of Regional Science, Volume 25(4), pp. 521-544.

Greenwood, M. (1988) Changing patterns of migration and regional economic growth in the US: a demographic perspective. Growth and Change, Volume 19(4), pp.68-86.

Gubert, F. (2002) Do migrants insure those who stay behind? Evidence from the Kayes area (Western Mali). Oxford Development Studies, Volume 30 (3), pp.267-287.

Gustafsson, b. & Makonnen, N. (1993) Poverty and remittances in Lesotho. Journal of African Economies, Volume 2 (1), pp.49-73.

Harper, C.; Marcus, R. & Moore, K. (2003) Enduring poverty and the conditions of childhood: life course and intergenerational poverty transmissions. World Development, Volume 31 (3), pp.535-554.

Harris, J. & Todaro, M. (1970) Migration, Unemployment and development: A two sector analysis. The American Economic Review, Volume 60 (1), pp.126-142.

Hicks, J. (1932) The Theory of Wages. London: Macmillan. Book

Hobbs, A. & Jameson, K. (2012) Measuring the effect of bi-directional migration remittances on poverty and inequality in Nicaragua. Applied Economics, Volume 44, pp.2451-2460.

Hoddinott, J. (1994) "A model of migration and remittances applied to Western Kenya". Oxford Economic Papers, Volume 46 (3), pp.459-476.

Hosegood, V. & Ford, K. (2003) The impact of HIV/AIDS on children's living arrangements and migration in rural South Africa. African Migration in Comparative Perspective, Johannesburg, South Africa, pp.1-48.

IMF (2005) Sending Money Home: Trends in Migrant Remittances. Finance and Development: A quarterly magazine of the IMF, Volume 42(4).

IMF (2007) Making Remittances Work for Africa. Finance and Development; A quarterly magazine of the IMF, Volume 44(2). Gupta, S.; Pattillo, C & Wagh, S.

IMF. (2006) Remittances statistics. International Monetary Fund, pp.1-4.

Jimenez, E. & Brown, R. (2012) How responsive are remittances to recipients' welfare? Evidence from Fiji. International Migration, Volume 52, pp. 179-201.

Jimenez-Soto, E. & Brown, R. (2012) Assessing the poverty impacts of migrants' remittances using propensity score matching: The case of Tonga. The Economic Record, Volume 88 (282), pp.425-439.

Johnson, G. & Whitelaw, W. (1974) Urban-rural income transfers in Kenya: An estimated-remittances function. Economic Development and Cultural Change, Volume 22 (3), pp.473-479.

Junming, Z. (1997) Multilevel analysis of rural outmigration in Guandong, China. Harvard Center for Population and Development Studies, Working Paper 97/03, pp.1-30.

Kageyama, A. (2008) Extent of poverty alleviation by migrant remittances in Sri Lanka. South Asia Research, Volume 28 (1), pp.89-108.

Kanaiaupuni, S. & Donato, K. (1999) Migradollars and Mortality: The effects of Migration on Infant Survival in Mexico. Demography, Volume 36, pp.339-353.

Khatri, S. (2007) Labor Migration, Employment, and Poverty Alleviation in South Asia. Promoting Economic Cooperation in South Asia: Beyond SAFTA. Edited by Ahmed, S.; Kelegama, S & Ghani, E. The World Bank. SAGE, India.

KIDS Overview (2005) Kwazulu-Natal Income Dynamics Study (KIDS) Third Wave, 2004. Public Release Version 1.1.

King, R. (2012) Theories and typologies of migration: An overview and a primer. Malmo Institute for Studies of Migration, Diversity and Welfare, working paper 3/12, pp.1-43.

King, R. (2013) Theories and typologies of migration: an overview and a primer. Willy Brandt Series of working papers in: International Migration and Ethnic Relations, paper 3/12, pp.1-43.

Kline, R. (1998) Principles and practice of structural equation modelling. New York: Guilford. Book.

Kok, P.; Gelderblom, D.; Oucho, J. & van Zyl, J. (2003) Migration in South and Southern Africa. Dynamics and determinants. HSRC Press, Cape Town. Book

Koska, O.; Saygin, P.; Cagatay, S. & Artal-Tur, A. (2013) International migration, remittances, and the human capital formation of Egyptian children. International Review of Economics and Finance, Volume 28, pp.38-50.

La Rovere, R.; Aw-Hassan, A.; Turkelboom, F. & Thomas, R. (2006) Targeting Research for Poverty Reduction in Marginal Areas of Rural Syria. Development and Change, Volume 37(3), pp. 627-648.

La Rovere, R.; Bruggeman, A.; Turkelboom, F.; Aw-Hassan, A.; Thomas, R. & Al-Ahmad, K. (2009) Options to Improve Livelihoods and Protect Natural Resources in Dry Environments: The Case of the Khanasser Valley in Syria. Journal of Environment and Development, Volume 18(2), pp.107-129.

Lauby, J. & Stark, O. (1988) Individual Migration as a Family Strategy: Young Women in the Philippines. Population Studies, Volume 42, pp.473-486.

Lee, E. (1960) A Theory of Migration. Journal of Regional Science, Volume 1, pp. 1-26.

Lee, E. (1966) A Theory of Migration. Demography, Volume 3 (1), pp.47-57

Leibbrandt, M.; Woolard, I.; Finn, A. & Argent, J. (2010) Trends in South African distribution and poverty since the fall of apartheid. Southern Africa Labour and Development Research Unit, School of economics, University of Cape Town, working paper 101, pp.1-92.

Levitt, P. (1998) Social remittances: Migration driven local-level forms of cultural diffusion. International Migration Review, Volume 32 (4), pp.926-948.

Lewis, D. (1987) Capital, the Trade unions, and the national liberation struggle. Monthly Review. Academic OneFile.

Lewis, W. (1954) Economic Development with Unlimited Supplies of Labor. The Manchester School, Volume 22, pp.139-191.

Lianos, T. & Pseiridis, A. (2011) Remittances of immigrants in Greece. Review Development Economics, Volume 15, pp.340-355.

Lillard, L. & Willis, R. (1997) Motives for intergenerational transfers: Evidence from Malaysia. Demography, Volume 34 (1), pp.115-134.

Lim, S. & Morshed, A. (2015) International migration, migrant stock, and remittances: Re-examining the motivations to remit. Quarterly Review of Economics and Finance, Volume 57, pp.101-115.

Lodge, T. (1983) Black Politics in South Africa since 1945. Johannesburg. Raven Press. Book.

Lokshin, M.; Bontch-Osmolovski, M. & Glinskaya, E. (2010) Work-related migration and poverty reduction in Nepal. Review of Development Economics, Volume 14 (2), pp.323-332.

Lopez-Cordoba, E. (2004) Globalization, Migration and Development: The Role of Mexican Migrant Remittances. Inter- American Development Bank, Washington, D.C. Book.

Lopez-Cordova, E. (2005) Globalization, Migration and Development: The Role of Mexican Migrant Remittances. Mimeo, Inter-American Development Bank. – Cited in Acosta, P; Calderon, C; Fajnzylber, P. & Lopez, H. (2006) Remittances and Development in Latin America. The World Economy: The World Bank.

Lu, Y. (2011) Migration, remittances and educational stratification among blacks in Apartheid and post-Apartheid South Africa. Social Forces, Volume 89 (4), pp.1119-1144.

Lu, Y. (2012) Household migration, remittances and their impact on health in Indonesia. International Migration, Volume 51, pp.202-215.

Lucas, R. & Stark, O. (1985) Motivations to remit: Evidence from Botswana. Journal of Political Economy, Volume 93 (5), pp.901-918.

Lucas, R. (1997) Internal Migration in Developing Countries. In Rosenzweig, M. and Stark, O. (eds.) Handbook of Population and Family Economics, Volume 1B, Amsterdam: Elsevier Science Publishing. Book.

Luneknight (2011) International migration of highly educated workers. WorldPress. Volume 1.

Maimbo, S. & Ratha, D. (2005) Remittances: Development Impact and Future Prospects. Washington, DC; World Bank. Book.

Makina, D. & Masenge, A. (2015) The Time Pattern of Remittances and the Decay Hypothesis: Evidence from Migrants in South Africa. Migration Letters. Volume 12(1).

Maluccio, J. (2000) Attrition in the KwaZulu-Natal Income Dynamics Study, 1993-1998. IFPRI Paper number 95.

Maphosa, F. (2007) Remittances and development: the impact of migration to South Africa on rural livelihoods in southern Zimbabwe. Development Southern Africa, Volume 24(1), pp.123-136.

Martinez, J. (2004) Workers' Remittances to Developing Countries: A survey with Central Banks on Selected Public Policy Issues. World Bank Policy Research, Working Paper number 3638.

Massey, D. & Basem, L. (1992) Determinants of Savings, Remittances, and Spending Patterns among U.S. Migrants in Four Mexican Communities. Sociological Inquiry, Volume 62(2), pp.185-207.

Massey, D. & Parrado, E. (1998) International migration and business formation in Mexico. Social Science Quarterly, Volume 79 (1), pp.1-20.

Massey, D. (1999) International Migration at the Dawn of the Twenty-First Century: The Role of the State. Population and Development Review, Volume 25(2), pp.303-322.

Massey, D.; Arango, J.; Hugo, G. & Kouaouci, A. (1993) Theories of International Migration: A Review and Appraisal. Population and Development Review, Volume 19(3), pp. 431-466.

Massey, D.; Arango, J.; Hugo, G.; Kouaouci, A.; Pellegrino, A. & Taylor, J. (1993) Theories of international migration: A review and appraisal. Population and Development Review, Volume 19 (3), pp.431-466.

May, J.; Carter, M.; Haddad, L. & Maluccio, J. (1999) KwaZulu-Natal income dynamics study (KIDS) 1993-1998: A longitudinal household data set for South African policy analysis. CSDS, Working Paper 21.

May, J.; Agüero, J.; Carter, M. & Timaeus, I. (2007) The KwaZulu-Natal Income Dynamics Study (KIDS) third wave: methods, first findings and an agenda for future research. Development Southern Africa, Volume 24(5), pp. 629-648.

Mazid, A. & Aw-Hassan, A. (2002) An integrated approach to sustainable land management in dry areas: the Khanasser Valley integrated research site. Socioeconomic component: Communities Characterization. The International Center for Agricultural Research in the Dry Areas, Allepo, Syria, pp.1-53.

Mbatha, C. & Roodt, J. (2014) Recent internal migration and labour market outcomes: Exploring the 2008 and 2010 national income dynamics study (NIDS) panel data in South Africa. South African Journal of Economic and Management Sciences, Volume 17(5), pp.653-672.

McConnell, C.; Brue, S. & Macpherson, D. (2006) Contemporary Labor Economics; Seventh Edition. McGraw-Hill Irwin International Edition. New York. Book.

Mills, C. (1999) The power elite. Oxford University Press, New York. Book.

Mimura, Y. & Mauldin, T. (2005) American young adults' rural-to-urban migration and timing of exits from poverty spells. Journal of Family and Economic Issues, Volume 26 (1), pp.55-76.

Mines, R. & de Janvry, A. (1982) Migration to the United States and Mexican rural development: A case study. American Journal of Agricultural Economics, Volume 64 (3), pp.444-454.

Moore, K. (2001) Frameworks for understanding the intergenerational transmission of poverty and well-being in developing countries. Chronic Poverty Research Centre, University of Birmingham, UK, Working Paper 8, pp1-20.

Moore, K. (2004) Chronic, life-course and intergenerational poverty, and South-East Asian youth. Chronic poverty Research Centre, The University of Manchester, pp.1-35.

Mueller, V. & Shariff, A. (2011) Preliminary evidence on international migration, remittances, and teen schooling in India. Contemporary Economic Policy, Volume 29 (2), pp.207-217.

Naatus, M. (2014) Remittances and poverty: A complex relationship, evidence from El Salvador. Advances in Management & Applied Economics, Volume 4 (2), pp.1-8.

Newton, I. (1729) Anxioms or Laws of Motion. "Principia", Volume 1. Book.

Nguyen, C.; Van den Berg, M. & Lensink, R. (2011) The impact of work and non-work migration on household poverty welfare, poverty and inequality. New evidence from Vietnam. Economics of Transition, Volume 19 (4), pp.771-799.

Nguyen, L.; Raabe, K. & Grote, U. (2013) Rural-urban migration, household vulnerability, and welfare in Vietnam. World Development, Volume 71, pp.79-93.

Nichols, S. (2002) Another Kind of Remittance: transfer of agricultural innovations by migrants to their communities of origin. Presented at the "Second Colloquium on International Migration, Mexico-California. University of California, Berkeley, March.

NIDS (2010) National Income Dynamics Study data – Wave 1 and Wave 2. Review and Data. Available online.

Nielsen, M. & Olinto, P. (2007) Do conditional cash transfers crowd out private transfers? Evidence from randomized trials in Honduras and Nicaragua. Unpublished manuscript, Princeton.

Niimi, Y.; Pham, T. & Reily, B. (2009) Determinants of remittances: Recent evidence using data on internal migrants in Vietnam. Asian Economic Journal, Volume 23 (1), pp.1-19.

Nord, M. (1995) Migration and the Spatial Concentration of Poverty. Rural Sociology, Volume 60 (3), pp.399-415.

Nord, M. (1998) Poor people on the move: Country-to-country migration and the spatial concentration of poverty. Journal of Regional Science, Volume 38 (2), pp.329-351.

O'Malley, P. (2015) Writing based on 1945 Native Urban Areas Consolidated Act No.25. O'Malley, The heart of Hope. Resource base. Online.

Odozi, J.; Awoyemi, T. & Omonona, B. (2010) Household poverty and inequality: The implication of migrant's remittances in Nigeria. Journal of Economic Policy Reform, Volume 13 (2), pp.191-199.

OECD. (2010) Trends in South African income distribution and poverty since the fall of Apartheid. OECD Social, Employment and Migration, Working Paper 101.

Oruc, N. (2011) Remittances and development: The case of Bosnia. NetZwerk Migration, Europa.

Page, J. & Plaza, S. (2005) Migration, Remittances, and Development: A Review of Global Evidence. Mimeo, World Bank.

Pampallis, J. (1991) Foundations of the new South Africa. London: Zed Books Ltd.

Papademetriou, D. & Martin, P. (1991) The Unsettled Relationship: Labor Migration and Economic Development. Greenwood, New York.

Pfau, W. & Giang, L. (2010) Determinants and impacts of international remittances on household welfare in Vietnam. International Social Science Journal, Volume 1, pp.431-443.

Poirine, B. (1997) A theory of remittances as an implicit family loan arrangement. World Development, Volume 25 (4), pp. 589-611.

Posel, D. & Casale, D. (2003) What has been happening to international labour migration in South Africa, 1993-1999? South African Journal of Economics, Volume 71 (3), pp.455-479.

Posel, D. (2009) Migration: Analysis of the NIDS Wave 1 Dataset. National Income Dynamics Study. Discussion Paper No. 1.

Posel, D. (2010) Households and labour migration in post-apartheid South Africa. Studies in Economics and Econometrics, Volume 34 (3), pp129-141.

Posel, D.; Fairburn, J. & Lund, F. (2006) Labour migration and households: A reconsideration of the effects of the social pension on labour supply in South Africa. Economic Modelling, Volume 23, pp.836-853.

Prins, E. (2009) Examining interpersonal dynamics among learners through the lens of place. International Journal of Lifelong Education, Volume 28(1), pp.91-106.

Putnam, R. (2001) Social Capital: Measurement and Consequences. Canadian Journal of Policy Research, Volume 2 (1).

Putnam, R. & Goss, K. (2002) Introduction. In R. Putnam (Ed.), Democracies in flux. The evolution of social capital in contemporary society, pp.1-19. Oxford, UK: Oxford University Press. Book.

Quantec. (2006) Easy Data. RSA Standardised Industry Indicators. Electronic Database.

Quinn, M. (2005) Remittances, Savings, and Relative Rates of Return. Journal of Developing Areas, Volume 38(2), pp.1-23.

Quisumbing, A. & McNiven, S. (2010) Moving forward, looking back: the impact of migration and remittances on assets, consumption, and credit constraints in the rural Philippines. Journal of Development Studies, Volume 46 (1), pp.91-113.

Rajan, R. & Subramanian, A. (2005) What undermines Aid's impact on growth. National Bureau of Economic Research, Working Paper 11957, pp.1-20.

Randell, H. & VanWey, L. (2014) Networks versus need: Drivers of urban out-migration in the Brazilian Amazon. Population Resolution Policy Review, Volume 33 (6), pp.915-936.

Rapoport, H. & Docquier, F. (2006) The economics of migrants' remittances. In: Kolm, S. & Ythier, J. (eds) Handbook of the economics of giving, altruism and reciprocity: applications, pp.1135-1198.

Ratha, D. (2005) Workers' remittances: An important and stable source of external development finance. Economic Seminar Series, paper 9, pp.156-175.

Ravallion, M. (1994) Poverty comparisons. Fundamentals of Pure Applied Economics, Volume 56, pp.1-145.

Ravenstein, E. (1885) The laws of migration. Journal of Statistical Society of London, Volume 48 (2), pp.167-235.

Ravenstein, E. (1889) The Laws of Migration. Journal of the Royal Statistical Society, Volume 52(2), pp.241-305.

Reichert, J. (1981) The migrant syndrome: Seasonal U.S. Wage labor and rural development in central Mexico. Human Organization, Volume 40 (1), pp.56-66.

Rempel, H. & Lobdell, R. (1978) The role of urban-to-rural remittances in rural development. Journal of Development Studies, Volume 14 (3), pp.324-341.

Roberts, B. (2000) Chronic and Transitory Poverty in Post-Apartheid South Africa. Journal of Poverty, Volume 5(4), pp. 1-28.

Rodriquez, E. & Tiongson, E. (2001) Temporary Migration Overseas and Household Labor Supply: Evidence from Urban Philippines. International Migration Review, Volume 35, pp.1185-1204.

Rosenzweig, M. (1988) Risk, implicit contracts and the family in rural areas of low-income countries. Economic Journal, Volume 98(393), pp.1148-1170.

Ruiz, I. & Vargas-Silva, C. (2009) To send, or not to send: that is the question. A review of the literature on workers' remittances. Journal Business Strategies, Volume 26, pp.65-90.

Ruiz-Arranz, M. & Giuliano, P. (2005) Remittances, Financial Development, and Growth. IMF Working Paper, Volume 5, pp.234.

Russel, S. (1992) Migrant remittances and development. International Migration, Volume 30(3-4), pp.267-287.

Sana, M. (2005) Buying membership in the transnational community: migrant remittances, social status and assimilation. Population Research and Policy Review, Volume 24, pp.231-261.

Sander, C. & Maimbo, S. (2003) Migrant Labor Remittances in Africa. Africa Region Working Paper Series: 2003.

Sander, C. (2003) Migrant remittances to developing countries. Department for International Development, London, United Kingdom, pp.1-17.

Schafft, K. (2006) Poverty, residential mobility and student transiency within a rural New York school district. Rural Sociology, Volume 71(2), pp.212-231.

Schiel, R.; Leibbrandt, M. & Lam, D. (2014) Assessing the Impact of Social Grants on Inequality: A South African Case Study. National Income Dynamics Study. NIDS.

Schiff, M. (2008) On the underestimation of migration's income and poverty impact. Review of Economics of the Household, Volume 6, pp.267-284.

Secondi, G. (1997) Private monetary transfers in rural China: Are families altruistic? Journal of Development Studies, Volume 33 (4), pp.487-511.

Seddon, D. (2004) South Asian remittances: implications for development. Contemporary South Asia, Volume 13(4), pp.403-420.

Semyonov, M. & Gorodzeisky, A. (2008) Labor migration, remittances and economic well-being of households in the Philippines. Population Research and Policy Review, Volume 27, pp.619-637.

Shimada, A. (2012) Migration decisions, expected remittances, and altruism. International Review Economics, Volume 59, pp.285-296.

Sienaert, A. (2007) Migration, remittances and public transfers: Evidence from South Africa. University of Oxford, Department of Economics Discussion paper series, no 351, pp.1-40.

Singh, R.; Haacker, M. & Lee, K. (2009) Determinants and macroeconomic impact of remittances in sub-Saharan Africa. IMF Working Paper 09/216.

Sjaastad, L. (1962) The costs and returns of human migration. Journal of Political Economy, Volume 70 (5), pp.80-93.

Sobel, J. (2002) Can We Trust Social Capital? Journal of Economic Literature, Volume 40 (1), pp. 139-154.

Solimano, A. (2003) Remittances by emigrants: Issues and evidence. The millennium goals: Raising the resources to tackle world poverty, pp.73-96.

Stapleton, C. (2015) The Migrant Network Effect: An empirical analysis of rural-to urban migration in South Africa. National Income Dynamics Study, NIDS, Paper 504.

Stark, O. & Bloom, D. (1985) The new economics of labor migration. The American Economic Review: Papers of the ninety seventh annual meeting of the American economic association, Volume 75 (2), pp.173-178.

Stark, O. & Levhari, D. (1982) On Migration and risk in LDC's. Economic Development and Cultural Change, Volume 31, pp. 191-196.

Stark, O. & Lucas, R. (1988) Migration, remittances and the family. Economic Development and Cultural Change, Volume 36 (3), pp.465-481.

Stark, O. (1991) The migration of labor. Blackwell, Oxford. Book.

Stark, O. (1995) Altruism and beyond. Cambridge University press, Cambridge. Book.

Taylor, J. (1992) Remittances and Inequality Reconsidered: Direct, Indirect, and Intertemporal Effects. Journal of Policy Modeling, Volume 14, pp.187-208.

Taylor, J. (1999) The new economics of labour migration and the role of remittances in the migration process. International Migration, Volume 37 (1), pp. 63-88.

Taylor, J.; Mora, J.; Adams, R. & Lopez-Feidman, A. (2005) Remittances, inequality and poverty: Evidence from rural Mexico. Department of Agricultural and Resource Economics, Working Paper 05-003, pp.1-39.

Taylor, J.; Mora, J.; Adams, R. & Lopez-Feldman, A. (2008) Remittances, Inequality and Poverty: Evidence from Rural Mexico. In J.De Wind & J.Holdaway (Eds), Migration and development within and across borders: Research and policy perspectives on internal and international migration. Geneva, Switzerland, and New York: International Organization for Migration and The Social Science Research Council, pp.103-130.

The World Bank (2005) Remittances: Development Impact and Future Prospects. Edited by Maimbo, S. & Ratha, D. Washington, DC. Book.

Thieme, S. & Wyss, S. (2005) Migration patterns and remittance transfer in Nepal: A case study of Sainik Basti in Western Nepal. International Migration, Volume 43 (5), pp.59-96.

Todaro, M. (1969) A model of labor migration and urban unemployment in less developed countries. American Economic Review, Volume 59 (1), pp.138-148.

Tong, Y. & Piotrowski, M. (2005) The effect of remittances on return migration and its relation to household wealth: The case of rural Thailand. Asia-Pacific Journal, Volume 25 (2), pp. 53-96.

Ullman, J. (2006) Structural Equation Modeling: Reviewing the Basics and Moving Forward. Journal of Personality Assessment, Volume 87(1), pp. 35-50.

Urzua, R. (2000) International Migration, Social Science and Public Policy. International Social Science Journal, Volume 52(165), pp.421-429.

Van Hear, N. (2010) Theories of migration and social change. Journal of Ethnic and Migration Studies, Volume 36 (10), pp.1531-1536.

Vargas-Silva, C. (2008) Monetary policy and the US housing market: A VAR analysis imposing sign restrictions. Journal of Macroeconomics, Volume 30 (3), pp.977-990.

Waddington, C. (2003) Livelihood Outcomes of Migration for Poor People. Development Research Centre on Migration, Globalisation & Poverty, Working Paper Series, University of Sussex, Brighton.

Waheed, O; Awoyemi, T.; Adebayo, S.; & Ayodele, O. (2013) Effects of remittances on poverty among rural households in Nigeria. European Journal of Sustainable Development, Volume 2, pp.262-284.

Wang, M. (2010) The impact of remittances on rural poverty reduction and on rural households living expenditure. China Perspectives, paper 4, pp.60-70.

Weber, B.; Marre, A.; Fisher, M.; Gibbs, & Cromartie, J. (2007) Education's effect on poverty: The role of migration. Review of Agricultural Economics, Volume 29 (3), pp.437-445.

Wiest, R. (1984) External dependency and the perpetuation of temporary migration to the United States. Patterns of undocumented migration: Mexico and the United States, USAID: From the American People, pp.110-135.

Witherick, M. & McNaught (2001) Global Challenge: A2 Level Geography for Edexel B (A Level Geography). Published by Longman. Book.

Woodruff, C. & Zenteno, R. (2004) Migration networks and microenterprises in Mexico. Journal of Development Economics, Volume 82 (2), pp.509-528.

Wright, P. (1928) The Tariff on Animal and Vegetable Oils. New York: Macmillan. Book.

Yang, D. & Martinez, C. (2006) Remittances and Poverty in Migrants' Home Areas: Evidence from the Philippines. In International Migration, Remittances and the Brain Drain. Ozden, C. & Schiff, M. Washington, DC, World Bank. Book.

Yang, D. (2011) Migrant remittances. Journal of Economic Perspectives, Volume 25 (3), pp.129-151.

Zachariah, K.; Mathew, E. & Irudaya Rajan, S. (2001) Social, economic and demographic consequences of migration on Kerala. International Migration, Volume 39 (2), pp.43-71.

Zezza, A.; Carletto, G. & Davis, B. (2005) Moving away from poverty: a spatial analysis of poverty and migration in Albania. Journal of Southern Europe and the Balkans, Volume 7 (2), pp.175-193.

Zhu, N. & Luo, X. (2010) The impact of migration on rural poverty and inequality: a case study in China. Agricultural Economics, Volume 42, pp.191-204.