Southern Africa Labour and Development Research Unit

Unemployment and Household formation

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About the Author(s) and Acknowledgments

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SECTION 1: Introduction

In comparison to other continents, Africa has received little scholarly attention with regard to household composition. Household composition is endogenous to a variety of welfare issues and little is understood about the determinants of this composition. Understanding the household composition and formation decision may improve our understanding of how the unemployed gain access to resources and how household composition could provide a safety net to the unemployed. However, increasingly, more work is surfacing around the topic in South Africa. Attention is being paid to the effect of the social security scheme and labour migration on household composition (Budlender & Lund, 2011) and to a lesser extent the effect of employment on household formation (Keller, 2004:15).

It is easy to understand why the relationship between household composition and unemployment has been of particular interest. South Africa has one of the highest unemployment rates in the world. Particularly, the rural unemployment rates in South Africa are so high as to be regarded with scepticism by those from elsewhere. Table 1 reports the unemployment rates by location. In 2012 unemployment rates were 25% and 38%, in urban and rural areas respectively.

Table 1: Unemployment Rates by Location

Unemployment rate	2008	2010	2012
Rural	36%	39%	38%
Urban	28%	22%	25%
All	30%	27%	29%

Note: Estimates by author using full waves with post-stratification weights that account for attrition.

Between race groups, the unemployment rates appear to be very different. Table 2 below reports these stark differences. Africans have the highest unemployment rates across the panel (32% in 2012) followed by Coloureds (26% in 2012), Indians (15% in 2012) and lastly Whites (9%in 2012).

Table 2: Unemployment Rates by Race

Unemployment rate	2008	2010	2012
African	34%	31%	32%
Coloured	26%	23%	26%
Indian	15%	15%	15%
White	15%	5%	9%

Note: Estimates by author using full waves with post-stratification weights that account for attrition.

Little to no direct support for the unemployed exists in the form of unemployment insurance. Only 0.1% of the sampled unemployed in 2012 receive payments from the Unemployment Insurance Fund (UIF). The fund only provides insurance to those who previously contributed to it while working. Unemployed youth are unlikely to be able to avail of this fund as they would not have had a chance to contribute to it. This begs the question about the coping strategies the unemployed seek in order to survive.

One of these mechanisms is to attach themselves to households where there is some sort of economic support. By investigating household formation we will bring to a light the choices made by the unemployed in order to access resources and survive. We will show that the households that can provide a public or private safety thereby increasing their appeal to the unemployed.

In many cases the unemployed have to move to rural areas, where they have family and communities to support them. However, doing this takes them away from job opportunities that may arise in urban areas. Furthermore, supporting the unemployed becomes a bigger burden for the rural household, and this may drag them deeper into poverty.

This paper will investigate which households the unemployed choose to live in, and whether gaining employment will enable household formation. In Section 2, we investigate both the local and international literature to inform our model of the unemployed household formation choice. In Section, 3 we discuss the data and its suitability for this analysis. In section 4, we discuss the model and results, and finally Section 5 allows us to make some concluding remarks.

We find that while some unemployed find support through public and private safety nets there is still a worrying number of unemployed that are not protected. Our results indicate that gaining employment has a positive effect on becoming a household head and enabling household formation.

SECTION 2: Unemployment and Household Formation Literature

This section examines the existing international and South African literature on decision-making around household formation and unemployment. We use the previous literature to guide us to an informed research approach to add to our understanding of this issue in South Africa.

2.1 International Literature

The international literature on household formation is concentrated in developed countries. It focusses predominantly on the determinants of household formation for young people entering the labour market (Card & Lemieux, 1997; Ermisch & Di Salvo, 1997). We are cautious in mechanically applying this international literature. Unemployment in South Africa is concentrated among the youth and in rural areas with limited labour market opportunities and access to information. We also note that the household formation decisions are likely to be influenced by cultural and ethnic norms of South Africa (Neves & Du Toit, 2008).

McElroy (1985) examines a model of household membership, employment and consumption. She proposes a Nash bargaining model for family behaviour that suggests that the decision whether to live with parents or alone is decided jointly with the employment decision. So, for example, a youth will choose his consumption and leisure bundle and the associated household membership to maximise his utility (McElroy, 1985:295). She finds that families in the United Kingdom are likely to provide their young adult sons with unemployment insurance when faced with poor labour market opportunities

Rosenweig and Wolpin (1994) examine the effect of support to children through transfers or co-residence in the USA. They suggest that young adults may choose to delay moving out of their family home in response to unemployment. This choice of co-residency can be viewed as an intergenerational transfer from parents to their children. The authors consider co-residency to be a less expensive way for families to support their unemployed children in comparison to providing them with transfers but, that co-residency comes at a cost to one's privacy (Rosenzweig & Wolpin, 1994).

Card and Lemieux (1997) find in Canada that poor labour market conditions are a cause of higher percentages of youth remaining with their families in comparison to the USA. They make use of panel data over a 25 year period and examine the effect of labour market forces on household composition, school attendance and workforce participation.

Ermisch and Di Salvo (1997) suggest that in response to unemployment, youth in the UK will delay leaving their family homes and may even return. They examine the effect of the price of housing, parental income, potential future income and individual characteristics on the household formation decision of a cohort of British youth. The authors use a dynamic two-stage model. In the first stage they model the utility of parents providing transfers to their children, among other variables, conditional on their budget constraints. In the second stage the authors model the choice of the youth to remain with their parents or not based on this transfer from their parents as well as their wage income. They find that youth are likely to leave their parental home in response to employment and that in the face of higher house prices a female child will delay leaving the family home.

Ermisch and Di Salvo (1997) predict that parental income will reduce the likelihood of household formation. They find that a higher parental income will lead to youth moving out. Keller (2004) suggests that in the South African context a higher parental income will reduce the likelihood of household formation since employment prospects are low.

2.2 South African Literature

The local literature on household composition has been dominated by discussions on the South African non-contributory old-age pension and the effect of rural-urban migration (Ardington, Case & Hosegood, 2009; Edmonds, Mammen & Miller, 2001; Madhavan et al., 2012; Posel, Fairburn & Lund, 2006)

Edmonds, Mammen and Miller (2001) use a regression discontinuity design to measure the response on household composition of becoming eligible for an old-age pension grant at the age of 60. The authors use census data and find the presence of a pensioner changes the household composition due to the change in household income but that these changes are different depending on the gender of the pensioner. In response to a woman receiving pension income the household composition will include more young children and less prime aged women while a man receiving pension income while result in a decline in prime aged men and an increase in school aged children in the household composition.

In poor countries co-residency of extended family is normal and household membership less rigid (Edmonds, Mammen & Miller, 2001). In South Africa, the elderly are unlikely to stay on their own, even when they receive a pension income. This is in contrast to the situation in the developed countries (Edmonds, Mammen & Miller, 2001).

Households living below the poverty line in rural areas tend to be structurally different from richer households. They are more likely to be bigger in number as they are often multi-generational (Keller, 2004). It is not surprising that pensioners living in multigenerational household share their pension income with their families (Møller & Sotshongaye, 1996; Sagner & Mtati, 1999).

Ardington, Case and Hosegood (2009:2) examine the effect of the presence of a pensioner in the household on employment and migration using panel data from a poor district in KwaZulu-Natal. They find that the old-age pension grant to the elderly in South Africa leads to higher employment rates for prime-aged household members(Keller, 2004), as well as increased labour migration.

Using a combination of panel and cross-sectional data, Klasen and Woolard (2009) study the household formation choices of the unemployed with the use of a multinomial logit model. The authors look at the effect of unemployment on relationship to household head under the hypothesis that the unemployed are likely to attach themselves to a household for economic support and are less likely to be a household head. They find that the unemployed are more likely to live with their parents, family or non-family to seek support relative to being the household head or spouse of the household head. In line with the international literature, Klasen and Woolard (2009) also find that unemployed youth will delay setting up their own households and remain with their family for as long as they fail to earn an income.

Using a cross section of male Africans in rural South Africa, Keller (2004) models the effect of employment status on household head status. She uses a modified Heckprobit selection model to capture the simultaneous determination of employment and household head status. The results from the Heckprobit model are similar to that of Klasen and Woolard (2009), that is, the unemployed are less likely to be household heads while the employed are more likely to be household heads.

Little of the literature has explored the unemployed joint decision of household formation and employment citing the need for panel data in South Africa (Keller, 2004; Klasen & Woolard, 2009).

2.3 Model

The international literature models the household formation choice of the unemployed between living alone and living with parents. In the South African context, this idea has been extended to include other options such as living with extended family or non-family.

This extension also affects the income variable in the equation. In the international literature parental income is often used as a factor to determine the location decision of the youth. In the South African context, extended family living requires us to include household income instead.

We consider a similar framework to that of Klasen & Woolard (2009) and treat employment as exogenous while acknowledging that in the medium to long term the labour market situation and household formation decision may be a joint one. Below we describe the individual's utility maximisation when deciding to live alone or attach to another household given the budget constraint determined by the different household arrangements.

Variables in the utility function of living alone include wage income; non-wage income and prices of consumption goods. All of these factors depend on location. When joining a shared household the variables of the utility function will additionally include a portion of the income of the household but also a cost to ones' privacy (Klasen & Woolard, 2009:9).

$$v(alone) = f(w, I, p) \tag{1}$$

$$v(attached) = \left(w, I, p, c_p, \delta \Pr(w), \frac{Y_h}{n_h}\right) \tag{2}$$

Equation 1 represents the indirect utility of living alone; w represents the wage rate, I is the non-wage income and p refers to the prices. Equation 2 describes the indirect utility of sharing a household with others; c_p refers to the privacy cost, $\delta \Pr(w)$ is the lost wages or discounted future value of wage from being attached to a household with limited

employment prospects and finally, $\frac{Y_h}{n_h}$ represents the income per capita in the household calculated as the household income divided by the household size.

Within this framework it is the employed who earn a wage enabling them to live alone. Living with others becomes less likely as the benefits of the shared income becomes low, and the cost of privacy increases with age. Being older, married and employed will place greater value on privacy costs and reduce the likelihood of living with parents or others. In addition, the cost of being attached to another household is the location of that household. Gaining employment could allow the choice of that location, bringing them closer to improved labour market conditions. This situation makes someone who gains employment more likely to be a household head.

In this framework, it is more appealing for someone with no wages to attach themselves to a household in order to share in the income of other members and perhaps lower their privacy costs. The higher the household's per capita income the more attractive it will be for an unemployed person but the discounted future earnings may be low depending on the location of the household and the surrounding labour market conditions. We would expect that the unemployed who attach themselves to households for support are unlikely to be household heads.

We will show that gaining employment will allow people to set up their own households using household head status as a proxy and the unemployed are likely to attach to households that have some income. In the next section we discuss the data and present some descriptive analysis of the household composition supporting the unemployed.

SECTION 3: Data and Descriptive situation

3.1 National Income Dynamics Study (NIDS)

The National Income Dynamics Study (NIDS) is ideal for examining the household composition of unemployed South Africans. They survey tracks a nationally representative sample of South Africans over time and this includes those changing their employment status and their household composition. It is the latter that is particularly unique to NIDS as each wave of the fieldwork literally tracks those who move around South Africa and interviews them at their current residence.

The NIDS panel consists of three waves of survey data conducted in 2008, 2010 and 2012. A total of 28,247 of individuals were interviewed in the first wave, and 28,641 individuals in the subsequent wave; and 32,633 individuals in the final wave in 2012. The balanced panel is made up of 18,864 individuals successfully interviewed in all three waves.

In rounds two and three of interviews the NIDS suffers from attrition. Attrition at the household level was largely due to non-response and at the individual level due to refusal (De Villiers et al., 2013). Problems with attrition arise when it is systematic. Our results will be biased if the attrition affects the employed more than the unemployed. In the subsequent sections we look at attrition more closely with respect to employment status to ensure it will not have an effect on our results. To account for the household and individual level attrition we use post-stratification calibrated weights when reporting cross-sectional analysis and panel weights when reporting on the balanced panel.

3.2 Sample characteristics

Our interest lies in changes over time in employment and household head status. We therefore exclude the non-resident household members and individuals who left the sample in waves 2 and 3. Our analytic sample thus consists of 18 818 individuals. We examine and compare the full sample in wave 1 and that balanced panel in wave 1 to see how attrition may affect our variables of interest. We describe the differences in the samples in Table 3 below.

Table 3: Characteristics of Wave 1 Full Sample and Balanced Panel

	Wave 1	
	Full Sample	Balanced Panel
Race		
African	79.6	85.2
Coloured	8.6	7.9
Indian	2.4	2.0
White	9.3	5.0
Gender		
Men	47.5	45.3
Women	52.6	54.7
Location		
Urban	40.3	46.0
Rural	59.7	54.0
Employment status		
NEA	36.1	38.5
Unemployed	19.4	20.2
Employed	44.5	41.3
Age		
0-14	32.5	37.2
15-59	60.3	56.4
60+	7.2	6.4
Education		
No Schooling	14.8	15.5
Primary School	35.9	40.0
Secondary School	41.7	38.9
Post-Secondary	7.6	5.7

Note: Estimates by author. Proportions in the panel sample have been weighted using calibrated panel weights. Post-stratification weights that account for attrition are used in the full sample column.

According to Table 3 the balanced panel is similar to the full sample in the characteristics shown. There are small differences in our balanced panel. This includes slightly fewer men, working age adults, secondary school students, and people located in rural areas due to attrition between waves. The balanced panel has a slightly higher representation of Africans and a lower representation of Whites than full wave 1 sample. There is not too much difference between the employment status variable in the full sample and the balanced panel, suggesting that we do not lose too much information on employment status due to attrition. The biggest proportion of people surveyed are in the working age category in both the pooled sample further supporting the idea that attrition doesn't affect the group we are examining.

While the employment proportions are not very different between samples we wish to track the movement of an individual out of a household if he/she becomes employed in a subsequent wave. For this purpose the panel sample is better suited as our analytical sample over the pooled sample as it will allow us to track an individual's response to changes in employment status in successive waves.

Those who form the panel are not a random subset of those interviewed in wave 1. We will therefore make use of the panel weights when analysing the changes in employment in the balanced panel. The panel weights are based on the calibrated weights of the individuals sampled and account for attrition bias.

3.3 Employment status

Cichello, Leibbrandt and Woolard (2012) note that the unemployment rates in wave 2 of the data are lower than expected perhaps due to some of the unemployed being categorised as not economically active, when in fact they were unemployed. To address this issue we look at a changes from a status from unemployed or not economically active to employed.

When examining a change in employment status we include adults of a working age 15-57 in the first wave, and age 16–58 in the subsequent wave, and ages 18-59 in the final wave. We choose a lower age limit of 15 as some teenagers are not in school but are working to support their families and an upper age limit of 59 as those older are eligible for the state old-age pension grant.

Below, in Table 4, we present the household-level analysis of the number of unemployed. With the high unemployment rate in South Africa it comes as no surprise that the majority of households contain an unemployed person.

Table 4: Number of Unemployed per Household

	All			African		
	2008	2010	2012	2008	2010	2012
No unemployed	22.9	27.9	26.2	22.9	28.1	25.1
1 person unemployed	47.0	49.8	50.5	48.7	51.7	53.4
2 people unemployed	22.7	17.5	17.2	20.9	15.2	15.7
More than 3 people unemployed	7.4	4.9	6.1	7.5	5.0	5.8

Note: Estimates by author using the panel working age sample with calibrated panel weights

In 2008, 47% of households had one unemployed person, 23% contained two unemployed persons and 23% contained no unemployed persons. The percentage of households that

contain one employed person increases in each successive wave, the biggest increase occurs between waves 1 and 2, in both the full and African sample. While the unemployment rate hovers around 30% in the sample we would have anticipated that the number of households would also not change too much but the proportion of households with 2 people unemployed and 3 or more unemployed is lower in waves 2 and 3 in comparison to wave 1.

3.3 Remittances, Pensions and Grants

We begin our examination of the unemployed by looking at the composition of the households in which they live. Below we show that the economic support available to the unemployed go beyond income from an employed household member. Some households derive their income from remittances or the social security scheme which we describe earlier on as public and private safety nets. We now look more closely at these safety nets.

During the apartheid era the South African government forced Africans, Coloureds and Indians into different areas through the Group Areas Act (Act No. 41 of 1950). Africans were specifically forced into homelands far away from the labour market. During this time movements of Africans, Coloured and Indians were also restricted through an elaborate system of pass laws (Thompson, 1990). The government allowed for African individuals to migrate to urban areas to work, but they could not have their families move with them (Thompson, 1990:194). This forced many families to live far apart and created a culture of regular remittances from the breadwinners to their rural households. Individuals who were working would remain in urban areas for extended periods so that they could send money home periodically.

While post-apartheid South Africa still has a large migrant labour system (Keller, 2004) we look at whether this is also the case in the balanced panel. Approximately 15% of households in wave 1 report receipt of remittances from a family member working away from home, more than 7% in wave 2 and 12% in wave 3 as reported in Table 5[1]. These proportions are similar for African headed households. In all waves we see that more than 50% of households receiving remittances are located in rural areas.

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[1] We report the household level results as remittances are often sent to a household and not only to a specific household member.

During the apartheid era the old-age pension was racially discriminatory favouring means tested poor, White individuals (Woolard & Leibbrandt, 2010). In the governments' determination to achieve parity in the eligibility of the grant, they extended the benefit to include all race groups by 1993 (Keller, 2004; Woolard & Leibbrandt, 2010). The old-age pension is considered one of the largest non-contributory schemes in the world (Case & Deaton, 1998). Keller (2004:15) suggests that the South African old-age pension scheme can have a big impact on household behaviour due to its extensive reach among Africans.

While the old-age pension is the largest social scheme in South Africa, there are four other social grants namely the child support grant, the care dependency grant, the child foster care grant and the disability grant. These grants also form part of the safety net that households provide to the unemployed.

In Table 5 below we check whether remittances, pension income and other grants are important income sources in our balanced panel.

Table 5: Proportion of Households receiving income

Individuals	All			African		
	2008	2010	2012	2008	2010	2012
Receives remittance	4.7	2.7	4.5	4.8	2.9	4.9
and lives in rural area	43.8	41.3	42.5	48.6	45.2	46.7
Pension income	67.4	72.0	72.7	79.2	86.2	86.4
and lives in rural area	60.9	56.0	54.3	68.8	67.2	64.9
Grant income	18.8	20.3	24.2	19.6	21.5	26.1
and lives in rural area	51.6	50.0	49.0	55.8	55.1	53.8

Households	All			African		
	2008	2010	2012	2008	2010	2012
Receives remittance	14.8	7.1	12.1	15.6	7.9	12.9
and lives in rural area	56.6	55.8	57.6	52.2	51.4	53.3
Pension income	14.2	16.2	15.6	14.7	16.5	15.8
and lives in rural area	39.5	45.4	46.3	31.9	35.4	36.6
Grant income	45.9	42.9	43.9	49.1	46.4	46.9
and lives in rural area	49.5	52.3	54.3	45.2	47.2	49.1

Note: Estimates by author using the panel working age sample with calibrated panel weights.

The top part of Table 5 reports the individual level analysis of income. According to the table almost 4% of individuals report receiving a remittance incomes in 2012. As described before these remittance receiving individuals are likely to be in rural areas and the table confirms that more than 40% of the remittance receiving individuals are located in rural areas.

From the analytical sample 79% of Africans over the age of 60 report receiving pension income in 2008 and more than 86% in 2010 and 2012. These figures are slightly higher for Africans than the entire sample suggesting that Africans are the bigger recipients of the old-age pension grant. In 2010 the eligibility criteria for old-age pension receipt was changed to 60 years old for men and women explaining the increase in old-age pension in the data in 2010 and onwards. The majority of the pensioner receivers are located in rural areas.

In wave 1, 19% of individuals report receiving at least one of the government support grants, 20% in wave 2 and 24% in wave 3. It is noteworthy around 50% of those receiving grants, in each wave, reside in rural areas.

The bottom section of Table 5 reports the proportion of households that receive remittances, pension income and grant income. In 2012, 12% of household report receipt of remittances. The majority of these households are located in rural areas.

In the analytical sample 15% of households in 2012 report receiving a pension income. The figures are slight elevated for African headed households. A large proportion of these households are located in rural areas but not as large as we would have expected since a much larger percentage of pension receiving individuals report living in rural areas.

In comparison to remittance receiving household many more households are in receipt of some state grant. Across race groups, 46% in 2008, 52% in 2010 and 54% in 2012 report receiving some government grant and again, many of these households are located in rural areas.

We can now safely say that many South African households receive some income through labour income, remittances and through the social security scheme, making them attractive to the unemployed. However, these households are often located in rural areas. We will show in the next sub-section that the multigenerational households provide a safety net for the unemployed but take them away from labour market opportunities in urban areas.

3.4 Household composition of the unemployed

Using the balanced panel, Table 6 reports, at the household level, the percentages of unemployed who live in a household with a connection to the labour market or in receipt of a social grant.

Table 6 Household composition of the unemployed

Household level composition	All Unemployed			African unemployed		
	2008	2010	2012	2008	2010	2012
1+ employed (%)	**60.2**	**58.5**	**59.5**	**58.2**	**56.2**	**58.7**
Total number of households (weighted)	3224	3487	4059	2525	2745	3316
Total number of households (unweighted)	2943	2794	3333	2268	2127	2604
No employed, remittances (%)	**7.8**	**4.5**	**6.8**	**8.6**	**5.2**	**7.6**
Total number of households (weighted)	416	271	461	373	253	431
Total number of households (unweighted)	475	327	638	421	301	586
No employed, no remittances, grants (%)	**19.3**	**21.6**	**20.0**	**20.9**	**24.0**	**21.4**
Total number of households (weighted)	1034	1286	1366	908	1173	1209
Total number of households (unweighted)	1326	1874	1819	1169	1640	1601
No employed, no remittances, no grants (%)	**12.8**	**15.4**	**13.7**	**12.4**	**14.6**	**12.3**
Total number of households (weighted)	684	917	935	536	711	698
Total number of households (unweighted)	614	965	1031	485	814	863

Note: Estimates by author using the panel working age sample with calibrated panel weights.

In 2008 slightly over 60% of the unemployed reside in households with at least one person employed. This figure decreases to 58% in 2010 and then increases to 59% in 2012. The figures for the African only sample are slightly lower. Almost 8% of the unemployed live in households that receive remittances in 2008, with figures dropping to 4% in 2010 and increasing again in 2012 to 7%. The second largest proportion of the unemployed reside in households that receive state support but no remittances. In 2008 this figure was 19%, increasing to 22% in 2010 then decreasing again in 2012 to 20%. The remainder of the unemployed reside in households with no state support and no connection to the labour market makes up 13% of the sample in 2010, 15% of the sample in 2010 and 14% of the sample in 2012. These figures are higher than those reported in Klasen and Woolard (2009) for 2004.

Table 5 shows us that the majority (66%) of the unemployed are reliant on the labour income of other household members, present or absent. We expect that many of these labour income households contain parents who are employed and supporting their unemployed youth. This would include both those who have delayed moving out of their family home and those who have moved back to family home. A private safety net to the unemployed is thus provided by those receiving a labour income.

The second largest group of unemployed are being housed in grant income households. This puts pressure on grant holders to share their income but shows the reach of the social scheme in South Africa. This group in addition to those who live in no grant and no remittances households make up 33.7% of households in the sample. Essentially one third of the households that the unemployed live in have no connection to the labour market through labour income or remittances.

Bringing it back to our discussion earlier, many of the households that receive remittances or social assistance and could provide some economic support are located in rural areas. This is particularly problematic as this takes them away from the labour market opportunities they would otherwise be exposed to in urban areas.

It is also of concern that more than 12% of unemployed are not protected by private or public safety nets. These households are the ones that are most susceptible to the poverty trap and or likely to fall into abject poverty (Klasen & Woolard, 2009).

SECTION 4: Method and Results

In this section we will discuss the method we use to evaluate the effect of employment on gaining household headship. We will present the model and discuss the findings.

As employment could enable one to run their own household we expect that employed individuals are likely to be household heads or spouses of household heads. Unemployment hinders the process of setting up a household particularly for the young. Setting up and maintaining a household requires some income and as discussed previously there is little unemployment insurance in South Africa. We thus hypothesis that the unemployed are unlikely to be household heads and examine this descriptively below.

We compare the relationship to household head status of the employed and the unemployed. We categorize living arrangements into 4 groups: household head or spouse, living with parents, living with other family and living with non-family. In table 7 we report these categories for the employed and the unemployed in each wave.

Table 7: Living Arrangements of the Employed and the Unemployed

Living arrangements	Employed			Unemployed		
	2008	2010	2012	2008	2010	2012
Household Head/Spouse	74.3	77.3	75.5	45.2	44.7	48.7
Living with parents	17.3	15.6	14.9	34.6	35.8	32.4
Living with other family	7.8	7.0	9.6	19.0	18.9	18.8
Living with non-family	0.7	0.0	0.1	1.3	0.6	0.1

Note: Estimates by author using the panel working age sample with calibrated panel weights

Of the employed around 75% are household heads or spouses of household heads in all three waves. Approximately 15% of the employed live with their parents across each wave and 10% live with other family. Employment might enable individuals to be set up their own homes and results are similar to Klasen and Woolard (2009).

The results of the unemployed also match our expectations. In wave 1 and 2 only 45% of unemployed are household heads or a spouse of a household head and in wave 3 this figure rose to 49%. In wave 3, 32% of the unemployed live with their parents while 19% live with other family and only 0.1% life with non-family. While these results do not specify whether unemployed individuals are remaining with their parents or moving back in with them it does support the idea that unemployment hinders setting up a household.

4.1 Changes in employment and household head status

We take advantage of the panel displaying changes in employment status in relation to changes in relationship to household head in Table 8. In column 1 we report those who remained employed across the waves. It comes as no surprise that almost 83% of those who remained employed in all three periods remained the household head or were able to set up their own household. In contrast, 22% of those who remained unemployed in all three periods remained with their parents. A small portion of them moved back into their parents' home and 13% moved in with other family in search of support. The delay of setting up a household, and remaining with parents, due to unemployment is also found by Card and Lemieux (1997) and Ermisch and Di Salvo (1997) in international studies and by Klasen and Woolard (2009) and Keller (Keller, 2004) in local studies.

From those who were unemployed in 2008 but gained employment in 2010 and 2012, 18% become a household head where previously they were not.

It is interesting to note that of those who were employed in wave 1 but lost the jobs in wave 2 or wave 3, 12% moved in with other family while only 5% move back in with their parents. In the South African context it appears that the extended family plays a large role in housing the unemployed. It is not just the immediate family, as many previous studies have found.

We will now show the effect of gaining employment in becoming a household head using a logit model.

Table 8: Change in employment and household head status across the panel

	Remain employed	Became employed	Remain unemployed	Became unemployed	Remain Not Economically Active	Became Not Economically Active
Remain HH Head/Spouse	74.6	37.6	30.6	51.9	25.6	47.2
Become HH Head/Spouse	8.3	17.9	19.2	10.6	9.5	11.6
Stay with Parents	7.2	18.8	22.2	14.8	29.3	14.9
Move to Parents	2.7	4.9	6.5	4.7	5.2	4.7
Remain with other family	1.2	6.2	8.5	5.4	14.6	7.9
Move to other family	6.0	14.3	13.0	12.3	15.4	13.6
Remain with other non-family	0.0	0.0	0.0	0.0	0.0	0.0
Move to other non-family	0.0	0.3	0.0	0.3	0.4	0.2

Note: Estimates by author using the panel working age sample with calibrated panel weights

We run a logit model to estimate the effect of the change from being unemployed to being employed on the likelihood of changing from not being a household head to becoming one including race, education and age as controls in 2008.

Both the independent and dependent variables we are interested in are binary. The household head$_i$ variable is categorized 1 if the individual was previously a non-household head and subsequently became a household head. The household head variable is categorized 0 if the individual did not become a household head in a successive wave.

Similarly, employment$_i$ is categorized 1 if the individual was previously unemployed or not economically active but became employed in a successive wave. The employment variable is categorized 0 if the individual did not gain employment.

We include in our model the education level categorized into 5 levels; no school, some primary education, some secondary education, completed secondary school and tertiary education. It is assumed that some working age individuals may still be attaining education. We include age as well as age-squared in the model to reflect our expectation that as someone gets older they are more likely to be a household head up to a point when the likelihood will decrease due to old age.

Before we get into the panel estimation we look at the changes in household head status between waves. In Table 9 we report the coefficients of the logit model conducted between waves 1 and 2, waves 1 and 3, and waves 2 and 3.

Table 9: Probability of becoming a household head between waves

	W1-W2	W1-W3	W2-W3
Gained Employment	0.025***	0.045***	0.038***
	(0.006)	(0.008)	(0.007)
Race (White Omitted)			
Indian	-0.007	0.095**	0.067**
	(0.034)	(0.046)	(0.026)
Coloured	-0.012	-0.009	0.023
	(0.026)	(0.031)	(0.017)
African	-0.006	0.001	0.029**
	(0.025)	(0.031)	(0.014)
Education (No School Omitted)			
Primary	-0.010	-0.005	-0.014**
	(0.006)	(0.008)	(0.005)
Some Secondary	0.023***	0.057***	0.044***
	(0.008)	(0.012)	(0.011)
Completed Secondary	0.033***	0.058***	0.046***
	(0.012)	(0.015)	(0.014)
Post-Secondary	0.036	0.097**	0.044
	(0.027)	(0.040)	(0.030)
Age	0.0036***	0.008***	0.005**
	(0.0009)	(0.002)	(0.002)
Age Squared	0.0000***	-0.0001***	-0.0001**
	(0.00001)	(0.00003)	(0.00003)
Household per capita income	-0.00001***	-0.00002***	-0.00001***
	(0.000003)	(0.000004)	(0.000002)

Notes: Estimates by author using the panel working age sample with calibrated panel weights.
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Gaining employment between the waves has a predicted significantly positive effect on becoming a household head. Table 9 gives credibility to our hypothesis that employment allows for setting up a household and unemployment reduces that possibility.

In each estimation between waves we see that gaining employment has a positive significant effect on becoming a household head or a spouse of the household head. Employment can therefore enable one to set up a household. In the estimation of the change in household head status between waves 1 and 2 we see that Africans, Coloureds and Indians are less likely to become household heads in comparison to Whites. This may be due to a higher propensity to stay with family for support however, the results are insignificant and mixed for comparisons between other waves. Higher levels of education point to a greater likelihood of becoming a household head. Age increases the likelihood of becoming a household head until a point before declining as indicated by the significant negative age-squared variable. Household per capita income before employment enters

negatively into the equation. This confirms our expectation that the higher the household income the more attractive it is, decreasing the likelihood of setting up a household.

We now turn to the panel estimation of the effect of a change in employment on a change in the household head status.

4.3 Panel Regression

Using all three waves of data and our dichotomous dependent variable we estimate the logit model with individual fixed effects. The model is as follows:

$$household\ head_{it} = \theta_t + \beta_1 employment_i + \sum_{j=1}^{n} \beta_j \mathbf{Z_{ij}} + a_i + u_{it} \qquad t = 1,2,3.$$

where i denotes the individual in the panel, t denotes the waves, θ_t reflects the different intercept for each time period, β_1 is the coefficient of interest. The summation in $\sum_{j=1}^{n} \beta_j \mathbf{Z_{ij}}$ describes the coefficients on the other, time-variant, variables in the model including education level, age, age-squared and household per capita income. Lastly a_i denotes the unobserved effect and u_{it} denotes the time-varying error, representing the unobserved factors that affect household headship, changing over time.

Our coefficient of interest is again the β_1, the effect of the gaining employment on becoming a household head. As in the previous section we expect that this will be positive and gaining employment will enable one to set up a household hold.

The advantage of using a fixed effects model is that it allows for the elimination of the unobserved effect, we describe in our model as a_i. All the determinants of being a household head that are constant within person i over time will be captured in the individual fixed effect. This could include cultural norms and household characteristics among other things. We conduct a Hausman test to confirm our expectations.

We present in Table 10 the panel regression of the balanced panel reported separately for men and women. Within each group the table displays the results for ordinary least squares estimation and the logit model. As Africans form the largest group in the balanced panel we also examine them separately.

We find, for both men and women of all races, that gaining a job between rounds of the survey is associated with a higher probability of being a household head.

As expected, and found in the previous section, as one gets old the likelihood of becoming a household head increases. The negative coefficient of the age-squared variable

suggests that at some turning point (probably around retirement) as age increase the likelihood of becoming a household head decreases.

The household per capita income has a positive and significant effect although very small. This is in contrast to the findings of Keller (2004) and Klasen and Woolard (2009). They find that household income has a negative effect on becoming a household head making it more attractive to attach to. This positive result may indicate that a higher household income could support one setting up a household instead of hampering it.

We conduct the Hausman test to confirm whether the individual specific characteristics are related to becoming a household head of not. We reject the null hypothesis that individual characteristics are not significant and conclude that there are effects specific to individuals which will affect the likelihood of becoming a household head. The lower estimates of the effects reported in the previous section may be suffering from omitted variables bias; that is, it does not take into account the unobservable characteristics which also affect becoming a household head.

In summary, working-aged individuals from the balanced panel, men and women of all race groups, are significantly more likely to be a household head or a spouse of a household head after gaining employment. This effect works through the increased probability that working-aged individuals are enabled to set up a household upon finding a job.

Table 10: Panel Regression of Household Head status

	All				African			
	Male		Female		Male		Female	
	OLS	Logit	OLS	Logit	OLS	Logit	OLS	Logit
Employed	0.0674***	0.398***	0.0295***	0.222***	0.0751***	0.399***	0.035***	0.251***
	(0.0114)	(0.0026)	(0.0093)	(0.0022)	(0.0125)	(0.0028)	(0.0102)	(0.0024)
Age	0.0169***	1.039***	0.0266***	1.035***	0.0160***	0.959***	0.0261***	1.049***
	(0.0015)	(0.0014)	(0.0016)	(0.0010)	(0.0016)	(0.0014)	(0.0015)	(0.0011)
Age squared	-0.0001***	-0.0108***	-0.0003***	-0.0108***	-0.0001***	-0.0099***	-0.0003***	-0.0113***
	(0.00003)	(0.00002)	(0.00002)	(0.00001)	(0.00003)	(0.00002)	(0.00002)	(0.00001)
Household per capita income	0.000004***	0.000158***	0.0000002	0.00005***	0.00001	0.00022***	0.00001	0.0001***
	(0.000001)	(0.000001)	(0.0000002)	(0.0000004)	(0.000002)	(0.000001)	(0.000003)	(0.000001)
Constant	0.0145		-0.0363		-0.00172		-0.0253	
	(0.0294)		(0.0348)		(0.0297)		(0.0336)	
Observations	24,753	2,859	31,701	5,409	20,616	2,517	26,469	4,662
No. of individuals	8,251	953	10,567	1,803	6,872	839	8,823	1,554

Notes: Estimates by author using working age analytical panel sample with calibrated panel weights
Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$

SECTION 5: Conclusion

The paper begin by questioning the location decision of the unemployed in the face of a lack of government financial support. We show, in Table 6, the dispersion of the unemployed; most of whom have access to financial support through labour income or receipt of a state grant by a household member. However, as we described earlier many of the households receiving remittances or state support are located in rural areas. This moves the unemployed away from the labour market and will reduce their employment prospects and job searches (Klasen & Woolard, 2009).

Between 12% and 15% of the unemployed in the balanced panel find themselves in households with no connection to the labour market or access to a state grant, without a public or private safety net. It is these households that are likely to be driven into poverty when trying to support the unemployed.

We went on to describe the changes in employment status and household head status across the panel. Only a small proportion of those who remained unemployed across the waves move back in with their parents as reported in Table 8. A bigger proportion of the unemployed move into households of other close family or delay moving out of their family home. This is also true for individuals who lost their jobs. There are thus two predominant strategies of the unemployed.

Household formation appears to be important to the unemployed as they can seek insurance from parents and family through co-residency. This paper extends the previous work done in international studies that only look at strategies of the unemployed moving back into their parents' home.

Using household head status as a proxy for the ability to support the family, we explain the role of the change in employment status on the change in headship. The analysis suggests that the gaining employment is an important part of becoming a household head and thus enabling one to set up a household and support a family. The results are consistent with Keller (2004) who finds that youth are likely to leave their parental home in response to employment.

To control for a variety of influences on becoming a household head, such as unobserved cultural norms and other unchanging individual characteristics, we examined the balanced panel across the three waves of the data.

We have been able to show that gaining employment plays an important role in enabling one to set up a household and support a family through increasing the probability of becoming a household head. When an individual becomes employed they earn a wage enabling them to set up a household. Living with others becomes less likely as they will no longer be seeking the financial support they previously needed. Table 10 also confirms our expectation that the cost of privacy increases with age. Being older and employed places greater value on privacy costs and increasing the likelihood becoming the household head. When an individual gains employment the household income variable is positive and significant in the determination of relation to the household head. In previous studies this effect has been negative or insignificant (Keller, 2004; Klasen & Woolard, 2009). A plausible explanation is that the higher the household income the more likely the family will in a small way support someone to set up a household even though the original household is resource constrained. Ermisch and Di Salvo (1997) suggest a similar explanation for the positive effect of parental income.

The analysis shows that gaining employment means movement out of a family home but provides no information about where the newly employed relocate to. An investigation of the movement of the unemployed is warranted. The discussion of how employment affects setting up a household is important as it signals strongly that gaining employment will reduce the economic burden on a household. To understand the mechanism behind the decision the unemployed make, a further study should more specifically look into the types of households the unemployed move into and out of in response to their situation.

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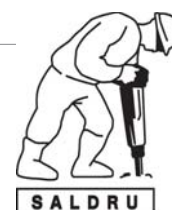
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