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Maternal and child migration in post-apartheid South Africa: Evidence from the NIDS panel study

by
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Introduction

Children are affected by adult migration, whether or not they themselves move. Yet little attention has been paid to patterns of child mobility and changing household contexts in South Africa, and the ways in which these relate to patterns of adult migration.

Internal migration in South Africa is historically associated with the social engineering and enforced fragmentation of families that took place under apartheid. In particular, controls on population movement, together with limited residential rights in cities and other places of economic activity, restricted the ability of African families to migrate and live together, while dual housing arrangements allowed for circular movement between urban and rural homes. The term "oscillating migration" was used to describe mobility between urban and rural areas. Rather than being viewed as physically bounded and static units, households came to be viewed as straddling these nodes, both of which could include resident and non-resident members. Contrary to expectations, there was no substantial increase in permanent urban migration when the apartheid-era controls on population movement were removed (Posel 2006). Instead, temporary labour migration has remained an important livelihood strategy for many households, and extended and dual household forms have persisted.

Given the growing interest in understanding patterns of population mobility and migration in South Africa, detailed studies of internal migration patterns are surprisingly scarce. In particular, little is known about family migration and the dynamics of child mobility and living arrangements in relation to adult migration.

This paper addresses two main questions:

a) What are the recent observable patterns of child mobility within South Africa?

b) How do these relate to patterns of maternal migration?

The analysis is based on analyses of nationally representative data from Waves 1-4 of the National Income Dynamics Study (NIDS), collected over a seven-year period from 2008 (wave 1) to 2014-2015 (wave 4).

Historical context: Implications for internal migration and household form

The apartheid strategy to entrench minority rule strategically divided urban people from rural, employed from unemployed, 'legal' from 'illegal', male from female, enfranchised from disenfranchised, white / coloured / Indian from African, and African people into ten different ethnic groups (Platzky and Walker 1985:xxi). It also divided families, split generations and separated breadwinners from dependants. Of particular consequence for enduring spatial arrangements and mobility patterns was the Verwoerdian ideology that black people in the Republic of South Africa were temporary residents. The origins of this ideology predate Verwoerd. In 1921 the Stallard Commission on local government in the Transvaal recommended the following in its report:

> It should be a recognised principle of government that Natives – men, women, and children – should only be permitted within municipal areas insofar and for so long as their presence is demanded by the wants of the white population and should depart therefrom when they cease to minister to the needs of the white man (Quoted in Savage 1984:25-26, cited in Jones 1993:7)

This principle set the scene for the array of legislation that was to follow, starting two years later with the Natives (Urban Areas) Act of 1923. The period of industrialisation after the Second World War was accompanied by rapid urbanisation and the establishment of an urban black working class. After coming to power in 1948, the National Party strengthened the idea of territorial separation and proposed measures to slow and ultimately reverse the movement of Africans to urban areas under white control (Hindson 1987). These processes were incorporated into law through the amendment to the Natives Urban Areas Amendment Act in 1952 which, together with the Group Areas Act of 1950, provided the main basis for influx control and forced removals.

The Promotion of the Bantu Self-Government Act, passed in Parliament in 1959, heralded the establishment of Bantustans or independent homelands. From this time, officials "continually emphasised the links urban blacks were to have with these homelands and that migratory labour was to be preferred to stabilized labour" (Bekker and Humphries 1985:7). Underlying influx control was the desire to control and limit black urbanisation, but not to prevent it completely. Segregationist ideals and the long-term vision of a white-only South Africa had to be balanced with the labour needs of urban employers and industry. The overall strategy was therefore to contain black people in (or remove them to) rural areas unless they were usefully employed in serving the white economy. Those permitted to live in urban areas were confined to townships or hostels in an effort to maintain the racially segregated boundaries and minimise the costs of housing and service provision to municipalities. Even when African people spent most of their time living in "white" South Africa, their "permanent homes were situated in the homelands within which they could enjoy rights of nationality and citizenship" (Bekker and Humphries 1985:12). The nationalist agenda was explicitly to achieve territorial apartheid, and one of the mechanisms was to keep unemployed Africans and, as far as possible, the dependents of migrant workers (mainly women and children) out of white South Africa.

Most of the apartheid legislation was only revoked from the mid-1980's onwards – a strong reminder that the controls on population movement and residence continued until very recently. It was widely

envisaged that the repeal of the legal constraints on population movement and residence would catalyse permanent urbanisation and family reunification, including a reverse movement for households that had been divided by influx control or affected by forced removals. Contrary to expectations, the removal of apartheid-era controls on population movement did not lead to a large increase in permanent urban migration (Posel 2006). Instead, internal labour migration remains an important livelihood strategy for many households, and extended and dual household forms have endured.

What is known about migration in South Africa?

Theoretical frameworks in the scholarship on migration provide concepts that may be useful in considering children's mobility. For many years, studies of migration assumed that movement from rural to urban areas was one-directional, permanent and the result of rational choice, driven mainly by the desire for economic gain. Dependency theorists dismissed the positivist rational choice theory, arguing that migration was an inevitable response to a western-dominated capitalist system characterised by economic and structural inequality. In this view, labour migration further marginalised the peripheral areas that supply labour, polarising the sending and receiving nodes in an unequal and exploitative relationship (Adepoju 2006; Dasgupta 1981; Mafukidze 2006).

Seminal work by South African anthropologist Philip Mayer during the 1960's demonstrated that migration patterns were not as neat as formerly envisaged: Many urban migrants retained strong ties with their rural homes, enabling reciprocal flows of people between locales. Some of these ideas were paralleled in the new economics of labour approach (Stark and Levhari 1982), which held that household fragmentation through temporary or circular migration is not an individual decision or a reflexive response to structural arrangements. Rather, it is a carefully calibrated means for survival of the broader family or household, and is driven by complex strategies to "maximise household income, minimise economic risk, and increase exposure to social resources" (Collinson et al. 2006b:195). Thus household members "spread themselves over rural and urban places to experience the particular utility each has to offer" (Collinson, Kok and Garenne 2006a:24). A critical question in relation to childhood is how children's interests, developmental needs, and the available "utilities" are balanced with those of other resident and non-resident household members.

Much of the internal migration in South Africa is still underpinned by the historic and enforced fragmentation of families, where dual housing arrangements allowed for circular movement between urban and rural homes. The term "oscillating migration" (Spiegel, Watson and Wilkinson 1996) came to represent black South Africans' mobility between urban and rural areas, and it was argued that "households should be viewed as straddling both these nodes, and that urban and rural worlds were so intertwined that it was more useful to conceive of rural-urban relations as belonging to a single unit of social endeavours" (Hall and Hendersen 2009).

Migration is now widely viewed as a cumulative and self-perpetuating process, facilitated over time by a network of kin, extended kin, and social networks. Key mechanisms of urban migration include processes of cumulative causation, reliance on migrant networks and informality as stepping stones to the city (Gilbert and Crankshaw 1999; Lemanski 2009; Marx 2007; Massey 1990; Turner 1968). The

processes of migration are often unstable; the transitory places of residence unsafe or unfit for children.

At a national level, the main post-apartheid population growth has been in metropolitan areas – both as a result of in-migration and of natural population growth. An analysis of the 1996 Population Census suggests that around three quarters of all internal migration nationally was to metropolitan areas, although this migration is not necessarily one-directional or permanent. (Kok et al. 2003:35). A more recent analysis of the NIDS panel data finds that the main receiving destinations for adult migrants were metropolitan cities, followed by small towns (Schiel and Leibbrandt 2015).

Analyses based on rural samples reveal slightly different migration dynamics: A migration analysis from a rural surveillance site in the north-east of South Africa over the period 1992-2003 finds that, while movement from village to village was the predominant form of permanent migration, there was no net change as the number of in-migrants was equivalent to the number of out-migrants – illustrating the circular form of temporary migration. On the other hand, a small net out-migration was found when comparing permanent migration to and from a primary urban metropolis (Collinson, Tollman and Kahn 2007).

There is some debate as to whether there has in fact been a shift towards permanent migration, as was anticipated when apartheid ended. National household surveys between 1993 and 1999 show a rise in internal migration (in 1999, 36% of rural households reported at least one labour migrant, up from 33% in 1993) but not necessarily an increase in permanent migration. Subsequently, there have been inadequate data to support thorough and generalizable analyses of migration patterns nationally, due partly to the strict household definition often used in surveys, and also because migration questions were deprioritised in the national surveys - possibly because of expectations that temporary migration would decline (Posel 2006).

Where direct measures are not readily available, researchers have used proxy measures of migration. In her analysis of the migration data in NIDS, Posel (2009) presents the reasons for adult absence, comparing frequencies for reasons provided in NIDS and in the Project for Statistics on Living Standards and Development (PSLSD) 15 years earlier. Employment (work or work-seeking), declined as the main reason for absence (given as the main reason for absence for 77% of all absent adult members in 1993, and for 59% in 2008), indicating a decline in temporary labour migration. This coincided with an increase in the proportion of absent adults who were described simply as “living elsewhere” (from 2% of absent adults in 1993 to 17% in 2008) – which may indicate a shift towards permanence. A comparison of migrant-sending households in NIDS (2008) and the PSLSD also shows a decrease in non-resident household members and a decrease in remittances from household members living elsewhere, again suggesting a decline in temporary migration (Leibbrandt and Woolard 2009). However it has also been argued that the decline in remittances could be related to the expansion of social assistance, which mainly targets children and pensioners (i.e. many of those who reside at the home of origin), reducing the perceived need for the remote member to remit (Posel and Casale 2003).

More women are migrating to urban centres for work. In 1993, women made up 29% of all migrant workers from rural areas in South Africa. More recently has there been a narrowing of the (adult) gender differential in migration patterns (Casale and Posel 2006:12). While urban migration was historically driven by male migrants, a gender analysis from October Household Surveys during the 1990's showed that a net increase in migration from rural areas during the 1990's was the result of a rise in adult female migration. By 2000, women made up 34% of the urban migrant population (Posel and Casale 2003:5), and in 2008 women constituted 37% of African migrant workers (Posel 2009).

At a sub-provincial level, women aged 15-25 years appear to be the most mobile group, with the most important categories being 1) young women moving alone (whether or not they are mothers); 2) women moving with children; and 3) women with men and children (Collinson et al. 2006a). Since children are potentially involved in all three of the most mobile categories, we can assume that children are also part of the migrant labour movement – whether they move or are "left behind".

Children's households and living arrangements

Anthropological studies during the 1980's and into the 1990's documented the mobility of children in oscillating migratory journeys between rural and urban spaces (Jones 1993; Murray 1981; Ramphele 1993; Reynolds and Burman 1986; Spiegel et al. 1996). Many children grew up apart from their parents, particularly their fathers, and were cared for at a home of origin. But the child population was by no means immobile. Children also traversed the labour migration paths, even staying with parents in crowded hostels designed for single occupancy (Jones 1993; Ramphele 1993) or negotiating the risks and challenges of life in informal settlements (Reynolds 1989).

It is unclear what "natural" form households and families might have been expected to return to when the legislative and structural constraints were removed. The very concepts of "household" and "family" have been much debated, and are certainly not static constructs. The terms household and family are often used interchangeably, even in academic discourse that is specifically about households and families (Amoateng and Heaton 2007; Russell 2003). The distinction is particularly complicated in the South African context, where family members who are immediately related by blood and marriage often spend much of their time living apart, while extended household arrangements, combined with a range of individual and household strategies such as labour migration, urbanisation and the allocation of care roles, create ties of co-residence between members who are less closely related.

The realities of contemporary family form and parenting in South Africa are that parents are frequently absent from the households where children live. Compared with other countries, rates of paternal absence in South Africa are high (Posel and Devey 2006). Marriage rates are comparatively low, and have been declining since the 1960s. Less than half of rural children have co-resident fathers when they are born (Hosegood and Madhavan 2012), and only a third of all children nationally have their father co-resident in the household where they live (Hall and Wright 2010).

Nearly five million of the 18 million children in South Africa do not have co-resident mothers. Of these, 71% have living biological mothers who stay elsewhere, the remaining 29% being maternal or double orphans (Hall and Wright 2010). In other words, while orphaning rates are high, maternal death is not the main reason for maternal absence from children's lives. Similarly, a large number of mothers have children who are not co-resident with them. A key reason for this is female labour migration, where

children are left at (or sent to) the home of origin (Van der Stoep 2008). An example of separation due to maternal migration would be where mothers migrate from the home of origin, leaving their children behind to be cared for by substitute caregivers (often grandmothers). Separation through child migration could occur where the child is sent from the migrant mother's home back to another place or a home of origin to be cared for by someone else. The mother-child relationship is of specific interest because, while primary care-givers of children in South Africa are predominantly women, internal labour migration rates amongst prime-age women appear to have increased (Posel 2006, 2010; Williams et al. 2011).

Existing research has shown a negative association between motherhood and labour force participation amongst women: Women who have children are less likely to be employed than those who are not mothers. However, the effect is likely to be exaggerated by the fact that estimates are usually derived from samples of mothers who live together with their children. An alternative analysis confirms that the negative effect of motherhood on labour participation is reduced if the non-resident mothers are included, and that mothers who are not co-resident with their children are significantly more likely to be labour force participants (Posel and van der Stoep 2008).

The historic phenomenon of male labour migration, coupled with urban housing constraints and the availability of extended family members to provide child care, is generally thought to have contributed to the low rates of paternal co-residence and involvement with their children (Budlender and Lund 2011). These same dynamics may also influence patterns of maternal-child co-residence. In the context of absent men and declining remittances, persistently high unemployment and falling marriage rates, women may have to make difficult choices about how to prioritise household establishment, child care and income generation.

Child mobility in the context of internal migration

While there is extensive literature on adult migration, relatively little is known about child migration patterns. This has contributed to an impression that migration is an adult phenomenon, and is primarily linked to labour migration, while children are less mobile. On the contrary, child mobility has been associated with parental (particularly maternal) migration. Children often migrate "as a consequence of many of the same processes that stimulate adult migration, and in response to living arrangements that emerge due to adult migration" (Hosegood and Ford 2003:1). Children do not necessarily migrate together with, or at the same time as adults, and it cannot be assumed that children's migration patterns follow that of adults. Rather, children "participate in migration, both independently, as well as with their parents and caregivers as households relocate" (Richter et al. 2006:197).

Temporary migration, in which the migrant resides in the place of origin for only a small part of the year, but nevertheless retains strong links with the original home, is an important category in the migration typology. An analysis of panel data from the Agincourt HDSS identifies about two thirds of migratory moves as "temporary" (Collinson et al. 2006a). Nearly half (46%) of temporary migration destinations were metropolitan, while 41% were secondary towns (Collinson et al. 2007). Temporary migration is, in turn, enabled by the continued presence of family members in the sending area. Many of these 'left behind' members are children.

The fact that there are family members who can care for children at a (rural) household of origin enables working age mothers to migrate to cities in search of employment (Casale and Posel 2006:15). In addition, the receipt of the old-age pension in three-generation or skip-generation households is

associated with greater numbers of dependent children and higher rates of labour migration amongst prime-age adults, suggesting that women are more likely to migrate when there is an elderly person at the sending home who can care for and financially support children left behind (Ardington, Case and Hosegood 2009). An analysis of internal migration to the Gauteng Province, using Census 2001 and Labour Force Survey data, found striking differences in the proportion of children (under the official working age of 15) when comparing the population of Gauteng residents born in the province with those born outside Gauteng. Amongst Gauteng-born residents, 66% of the population consisted of working age adults, and nearly a third (31%) were children aged 0-14 years. However, an age breakdown of in-migrants (Gauteng residents who were born elsewhere) found that 82% of the in-migrant population were working-age adults (15-64 years) while only 14% were children under 15 years (Oosthuizen and Naidoo 2004:11).

Further analyses of the Agincourt DHSS find that the presence of an elderly woman at the rural home decreases the likelihood of children moving by over 25% when the mother is living elsewhere, and the odds are further reduced if there are prime age females in the household. On the other hand, the presence of other women in the household has little effect on child mobility if the child's mother was co-resident in the household. This confirms a hypothesis that the presence of maternal substitutes enables independent migration of mothers (Madhavan et al. 2012). Other determinants of child mobility are socio-economic status (the wealthier the household, the less likely children were to move), gender (boys were less independently mobile than girls) and life stage of the child, where older children were less likely than young children to move (Madhavan et al. 2012).

Two recent linked studies from the Africa Centre surveillance site in Hlabisa, in rural KwaZulu-Natal, explore family migration and dispersion, with a particular focus on children "left behind" and children's inclusion in the destination households of migrant parents (Bennett et al. 2015a, 2015b). The Africa Centre Demographic Information System (ACDIS) is a longitudinal study which, since 2000, has collected socio-demographic data on individuals attached to the approximately 11,000 households in the demographic surveillance area (DSA). The authors find that only 5% of children are included in their migrant parents' households, and conclude that "two decades after the restrictions on family migration were lifted, it remains uncommon for children to be included in the destination household of migrant parents" (Bennett et al. 2015a:328). As with the Agincourt study, they find that young children (under 5 years) are more likely than older children to move from the home of origin to the migrant parents' home.

NIDS as a source of data on child mobility

Data sources on migration

As already discussed, there is a shortage of empirical research on national patterns of migration from a children's perspective, in particular to understand the mechanisms that drive migration, to explore patterns of phased migration, and to understand the consequences of adult and/or child migration on children's quality of life (Kok et al. 2003; Richter et al. 2006). The dearth of research is partly due to the limitations of available household surveys, including the constraints of cross-sectional or region-specific data, with narrowly defined 'households' and poorly-defined intra-household relationships.

The main sources of data on internal migration have been the population census, data collected from the Demographic Surveillance Sites at Hlabisa and Agincourt, and NIDS. While considerable analysis

was conducted on the 1996 and 2001 censuses, surprisingly little analysis of migration has issued from the 2011 census to date. An obvious strength of the census is that it is (almost) comprehensive, and it allows for analysis at small area level. The main constraints for the purpose of migration analysis are its cross-sectional nature, and the fact that it uses a strict definition of household, and does not capture information about non-resident members.

The great advantage of a panel survey design is that makes it possible to "follow" individuals across different households and to different places over time. Both the Hlabisa and Agincourt DHSS's follow this approach, and much of what is known about migration in South Africa has been derived from these studies. Using a broad household definition, they record information about non-resident household members. However the fact that they are not national samples means that results cannot be generalised to the whole population, and that those who leave the site are lost to the panel – a major constraint for migration analysis.

NIDS offers solutions to the limitations of the other surveys, making it an ideal data source for analysing migration in South Africa. It is a nationally representative, longitudinal panel study which follows all the originally sampled respondents even if the household splits or members move. This allows for analysis of the characteristics of sending and receiving households. It records the GPS coordinates of all respondents' households in each round, allowing for accurate mapping of spatial migration patterns. It uses both a broad and narrow definition of household, and captures limited demographic information on non-resident household members, although unfortunately non-resident household members in the baseline wave are not treated as part of the panel, and so cannot be followed through the waves. It has a detailed questionnaire for children, which includes information about absent parents – information which is not available in other national surveys.

Sample

NIDS was designed as South Africa's first nationally representative panel survey. It was initiated and funded by the South African presidency, and is conducted by the Southern African Labour and Development Research Unit (SALDRU) at the University of Cape Town. At time of writing, the first four waves had been conducted. Wave 1 was undertaken in 2008, with subsequent waves at two-year intervals after that. Four waves of data were available for this analysis (2008, 2010-2011, 2012 and 2014-2015). The data are re-released from time to time, as corrections and updates are made. The versions used in this analysis are NIDS_1_v6.0; NIDS_2_v3.0, NIDS_3_v2.0 and NIDS_4_v1.0.

The first wave covered 7 300 households and collected information on approximately 28 000 individual members of those households, as well as nearly 3 000 non-resident members. Resident members of sampled households who were successfully surveyed in the first wave constituted the baseline panel of continuous sample members (CSMs). Babies born to female CSMs subsequently become CSMs in their own right, effectively making NIDS a growing sample as children are born into the panel. CSMs who move out of the originally sampled households are tracked to their new households, provided they are still in the country. This is a particular strength of NIDS for migration analysis, as much of the internal migration in South Africa is across provinces. Once tracked, migrant CSMs are surveyed, and so are all the members of their new household who become TSMs (temporary sample members). TSMs are not part of the panel, and are only surveyed in their capacity as co-resident members with CSMs. If households split between waves, with CSMs contained in both

households, then effort is made to track both households and new household identifiers are allocated (Baigrie and Eyal 2014).

A downside of any panel survey is the threat of attrition. In wave 2 of NIDS, only 78% (22 000) of the originally sampled individuals were re-interviewed. This was even after a second phase of data collection was undertaken (in 2011) in an attempt to reduce the high non-response rate of the first phase (2010). Africans (18%) had lower attrition rates than other races, and were the only race for whom non-contact was a more common reason for attrition than refusal (Baigrie and Eyal 2014). In terms of age, the largest share of attrition (but not the highest rate) was among 15-35 year-olds. Given the age distributions of migrants, and the fact that non-contact outweighed refusal as the reason for attrition in this age group, it is possible that geographic mobility in the young adult age group leads to attrition bias – something which would be highly relevant to an analysis of child and maternal migration. The highest attrition rate was for CSMs over 65 years, of whom 44% died between waves 1 and 2. Attrition was also disproportionately high for those in the wealthiest quintile (mostly due to refusal), and to those living in the Western Cape and Gauteng. In summary: "attritors are older, more educated, more likely to be male, richer and come from smaller households than non-attritors" (Baigrie and Eyal 2014:50). This is good news for the current analysis, as the primary population of interest consists of children and women of child-bearing age who are likely to be poorer and less educated than the typical attritor. Response rates improved in the third and fourth waves

Defining the child panel

This analysis focuses specifically on African children aged up to 8 years in the first wave, and under 15 in wave 4.

The specific focus on Africans is because the African population was subject to particular policies to control population movement under apartheid, and substantial racial differences in the geographic distributions of the population remain. Given the political and social history of the country, patterns of migration (and reasons for it) are likely to differ substantially between population groups as they were defined under apartheid, and the averaging effect of an aggregated analysis would mask the situation of Africans. I have restricted the analysis to the African population, acknowledging that "in the short to medium term, the strongest reason for continuing to collect [and analyse] information on population groups in South Africa is to monitor and track progress in redressing the iniquities of apartheid social and economic policies" (Moultrie and Dorrington 2012:1459).

There are two main reasons for limiting the analysis to children under 15 years, even though children are legally defined as being under 18. The first is that studies of labour migration have typically focused on the over-15 population, as 15 is the minimum legal age for employment. This child-centred analysis excludes those who may be in the labour market, as the focus is on the interaction between labour market migration and child dependants. The second, and more practical, reason is that NIDS has different questionnaires for children under 15, and for "adults" aged 15 and above. The child questionnaire includes items relevant to care arrangements and absent parents which are not included in the adult questionnaire. I start with a sample of children under 8 years in Wave 1, in order to construct a balanced panel of children who are still in the child dataset in Wave 4.

Most of the analysis that follows is based only on waves 1 and 4, partly because it allows for a simpler before-after design, and partly because the wave 4 response rate (at 91% of those originally

interviewed) would be reduced to 79% if successful interviews in both intervening waves were required.

Table 1 presents an age matrix across waves 1 and 4. Of 7 323 African child CSMs in the fourth wave, 3 122 had been born into the panel since the first wave. The remaining balanced sample is 4201 CSMs.

Table 1. Age matrix of CSMs in NIDS Wave 1 and Wave 4

Age in Wave 4 (2014-2015)	Age in Wave 1 (2008)										
	0	1	2	3	4	5	6	7	8	.	Total
0	-	-	-	-	-	-	-	-	-	459	459
1	-	-	-	-	-	-	-	-	-	445	445
2	-	-	-	-	-	-	-	-	-	428	428
3	-	-	-	-	-	-	-	-	-	454	454
4	-	-	-	-	-	-	-	-	-	456	456
5	-	-	-	-	-	-	-	-	-	452	452
6	119	-	-	-	-	-	-	-	-	390	509
7	392	98	-	-	-	-	-	-	-	38	528
8	34	402	102	-	-	-	-	-	-	-	538
9	-	33	406	104	-	-	-	-	-	-	543
10	-	-	35	398	93	-	-	-	-	-	526
11	-	-	-	39	377	108	-	-	-	-	524
12	-	-	-	-	41	372	76	-	-	-	489
13	-	-	-	-	-	29	345	120	-	-	494
14	-	-	-	-	-	-	19	355	104	-	478
Total	545	533	543	541	511	509	440	475	104	3122	7323

4201 CSMs present in W1 and W4

children born into the panel

Own calculations from NIDS Waves 1 & 4, unweighted.
(African children aged 0-14 in Wave 4)

In the first wave, 82 of the sampled 4 201 children were recorded as being "not available" or the interview was "refused" (in reality, this would have applied to the adult respondent or caregiver who was meant to respond on the child's behalf, as children under 15 were not interviewed directly). This left 4 119 successfully interviewed CSMs in wave 1. The response rates for wave 4 are presented in Table 2. Overall, 91% of the children originally sampled were successfully re-interviewed.

Table 2. Response rates wave 1 – wave 4

Age intervals (at Wave 1)	Wave 1 Initial panel			Wave 4 successfully interviewed			Wave 1 - Wave 4 Probability of re-interview		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0	268	264	532	243	231	474	0.907	0.875	0.891
1-4	1067	1018	2085	968	909	1877	0.907	0.893	0.900
5-8	766	736	1502	710	689	1399	0.927	0.936	0.931
Total	2101	2 018	4119	1921	1 829	3750	0.914	0.906	0.910

Source: Own calculations from NIDS Waves 1 & 4, unweighted.
(African children aged 0-8 in Wave 1)

Of the 369 CSMs for whom wave 4 interviews were not conducted, the majority (196) were due to household-level non-response. This could be related to migration of the whole household, or movement of children into new households that could not be found. Another 139 were recorded as "not tracked in wave 4", while 34 refused or were not available. The final balanced sample consists of 3 750 children for whom interviews were successfully conducted in wave 1, and again in wave 4. The vast majority of these children were also interviewed in either or both of waves 2 and 3.

Despite the low attrition rate (of less than 10% over four waves of the panel, spanning eight years) there is a possibility of non-random attrition from the sample which could bias the results. Logit regressions were used to estimate the likelihood of children attritting between waves 1 and 4, with a particular focus on the residency and vital status of mothers.

The regressions indicate that the variables of interest (related to mother's vital and co-residence status) do not affect child attrition significantly. However, the likelihood of child attrition decreased with increasing age of the child at wave 1 (significant at the 99% level), suggesting that if attrition was related to movement of the child, then this was more likely to take place in the early years of a child's life. Children living in rural areas under traditional authority were less likely to attrite that those living in other area types (significant at the 95% level).

Table 3. Test for attrition bias between waves 1 and 4

Variable	I	II	III
Mother lives with child	-0.52205403	-0.3882849	-0.39409581
Mother lives elsewhere	-.31470833*	-0.24191309	-0.16006646
Mother dead	(omitted)	(omitted)	(omitted)
Child's age		-.08602923***	-.08242384***
Rural traditional			-.64955053**
Urban formal			-0.07890389
Urban informal			-0.08058265
Eastern Cape			-0.2604915
Northern Cape			-1.5735048***
Free State			-1.6106824***
KwaZulu-Natal			-0.57020045
North West			-0.64912302
Gauteng			-0.24329471
Mpumalanga			-.81135234*
Limpopo			-1.4952345***
_cons	-2.2379559***	-1.9755662***	-1.0006679**

* p<0.05; ** p<0.01; *** p<0.001

The absence of biological mothers from children's households presents another challenge to the analysis. Yet it is precisely this phenomenon that needs to be investigated, as maternal absence is likely to be related to migration. Of the panel of 3 750 children, 4% were maternally orphaned when they were originally interviewed in wave 1, and 22% had mothers who were living elsewhere. By wave 4, the percentage of maternally orphaned children had increased to 11%, and 26% of children had mothers living elsewhere.

Table 4. Whereabouts of children's mothers in waves 1 and 4

	Wave 1 (2008)		Wave 4 (2014)	
	n (unweighted)	% of sample	n (unweighted)	% of sample
Living in same household	2 756	73.5	2 381	63.5
Living elsewhere	809	21.6	963	25.7
Dead	158	4.2	400	10.7
Unclassifiable	27	0.7	6	0.2
TOTAL (child panel)	3 750	100.0	3 750	100.0

Source: NIDS Waves 1 & 4, unweighted.
(African children aged 0-8 in Wave 1)

Given that many of the children's mothers were not present in the same household (and therefore were not included in the household roster or adult questionnaire), variables about mothers were augmented for the purposes of the analysis using reported information obtained in respect of the child. The child questionnaire includes limited questions about absent parents, including the frequency of their contact with the child, their education level, and year of birth. Data on the age and education level of mothers was drawn from both the adult questionnaire (in respect of co-resident mothers linked through their person code), and from the child questionnaire (in respect of absent mothers who are not part of the panel), and this considerably reduced missing data about mothers when examining characteristics of migrant and non-migrant children.

Defining child and mother migrants

The published NIDS dataset includes a derived mobility variable for each individual in the wave 2 – 4 datasets. The variable, named "w_x_stayer", is derived from data about the dwelling rather than the place or municipal area, and has a value of 1 for those who stayed in the same dwelling, and a value of 0 for those who moved to a different dwelling – even if it was within the same geographic locality. In each of waves 2 – 4, the variable refers to the individual's status relative to the previous wave only (de Villiers et al. 2013), therefore it is possible for an individual to be a "mover" in wave 2 and a "stayer" in wave 3, for example. For purposes of the current analysis a new migration variable was derived which differs from the NIDS derived variable in two ways: First, it defines migrants as those who moved across municipal boundaries; second, it is a single variable applicable to all four waves, and includes those who moved between waves 1 and 4, or any of the intervening waves. Thus someone who moved between waves 1 and 2, but not between waves 3 and 4 would still be described as a migrant, on the basis that they had moved place at some time between waves 1 and 4. Of the 3 750 children in the balanced sample, 501 were defined as migrants in this way. This represents 14% of the child sample.

Maternal migration was similarly defined as movement between municipal districts at any time between waves 1 and 4. Of the 3750 children in the balanced sample, 461 were defined as having migrant mothers, 2297 had non-migrant mothers and 992 had mothers whose migrant status could not be defined. In 322 of the missing cases, the mother's migrant status could not be defined because the children were already maternally orphaned in wave 1, or were subsequently maternally orphaned

between waves 1 and 4. The remaining 620 children had mothers whose migration status could not be determined because there was insufficient information on their place of residence across the waves or because they were not in the panel. This is a limitation of the analysis, particularly more than a third of the 620 mothers whose migration status could not be defined were reported to be alive but had changed their residential status in relation to the child (either moving into the same household or out of it) over the course of the four waves. This intra-household movement could be related to a migration event of the mother or the child or both. The effects of the bias in the omission of mothers' migration data remains to be investigated.

Table 5. Whereabouts of children's mothers whose migration status could not be defined

	Wave 4			
Wave 1	living elsewhere	living in same HH	missing	Total
dead / unknown	1	1	0	2
elsewhere	401	**194**	2	597
in hh	**38**	17	1	56
.	12	3	0	15
Total	452	215	3	670

Source: NIDS Waves 1 & 4, unweighted.
(African children aged 0-8 in Wave 1)

Child migration rates and spatial transitions

Migration at baseline

Wave 1 of NIDS asked about past migration. The survey records information on where household members were born, where they were living in 1994 (adults only) and 2006, as well as in the current year (2008 for the first wave).

In order to construct a measure of child mobility at baseline, the variable that specifies the year of move to the current place of residence was used (the interviewer instructions specify that the question is about change of place, so mobility refers specifically to geographical movement, rather than change of house or suburb within a place or town.)

Based on an analysis of African children under 8 years for whom interviews were completed in the first wave, 14% were defined as mobile, in that they had moved to their current place since they were born, and 19% of households with resident African child members under 8 years had at least one mobile child as part of the household. These were distributed differently across area types (Table 6).Urban areas had a larger share of households with mobile children than former homelands. Households on rural farms were most likely to have at least one child move to that place since birth, but the real numbers are relatively low.

Table 6. Households with in-migrant children, by area type (baseline - 2008)

	%	SE	Illustrative # of HHs
Urban	26.8	0.0253	640 000
Rural traditional	10.9	0.0166	203 000
Rural farms	22.3	0.0760	56 000
Total	19.3	0.0160	899 000

Source: NIDS Waves 1, cross-sectional weights used.
(Households with African children aged 0-8)

We now turn to the panel data to examine the incidence and direction of child mobility in more detail.

Migration through the panel

In order to avoid counting small moves within towns, the analysis focuses on inter-municipality moves. Migration after wave 1 was therefore defined by comparing the 2011 district council codes assigned to the household in which the child lived in each wave. A limitation of using the municipal district to define migration is that some municipalities, for example the metropolitan cities, are very large, both in land area and population, and include suburbs, townships, and informal settlements with vastly different socio-economic profiles. The migration headcounts therefore exclude intra-city moves even though they may represent significant shifts in geographic location and the in the quality of living environments.

Of the total African child population present in waves 1 and 4, 14% had moved across municipalities (95% confidence interval: 12.1%-16.0%). This represents about 980 000 child migrants between 2008 and 2014, after applying wave 4 panel weights. Within-municipality mobility rates are far higher: A third of all children who were under eight years in the first wave moved house or place in the seven years of the panel (representing nearly 2.5 million child movers). Of these, 39% were defined as migrants in that they had moved across municipal boundaries, while 61% had moved house or joined another household, but stayed within the same municipality.

This is an important distinction: The child population is known to be highly mobile in that children may experience sequential moves across households as care arrangements change. But there has thus far been little information on the spatial mobility of children, as opposed to changing household arrangements.

An analysis of sending and receiving areas (Table 7) shows high levels of movement between geography types, including both urban-rural and rural-urban migration. Of those initially living in urban areas, 36% of cross-municipality moves were to another urban area, and 64% were to the former homelands. Of those moving from the former homelands, 47% moved to another rural household in a former homeland while 52% moved to an urban area. In other words, there is a fairly even split between urban and rural areas as child migration destinations, irrespective of the sending area type, as can be seen in the net in-migration estimates. These show urban areas receive 46% of migrant children, while the former homelands receive 53%. In-migration to commercial farming areas is negligible, at less than 1%.

Table 7. Transition matrix of sending and receiving geotypes for child migrants

	Receiving destination (2014-2015)			
Sending destination (2008)	Urban	Rural (traditional authority)	Rural (farms)	Total
Urban	36.4	63.6	-	100
Rural (traditional authority)	51.6	46.7	1.7	100
Rural (farms)	73.9	24.2	1.9	100
Total	46.0	53.1	0.90	100

Source: NIDS Waves 1 & 4, panel weights used.
(African children aged 0-8 in Wave 1)

The multi-directional spatial movement among children is strikingly different from adult migration patterns reported by Schiel and Leibbrandt in a similar analysis of cross-municipality migration for the over-16 population. That analysis finds that migrant adults tend to relocate to areas similar to their sending locations (Schiel and Leibbrandt 2015). In the adult analysis, only 26% of migrants from tribal authority areas had moved to urban areas, while 71% had remained in rural areas under traditional authority. Similarly, 85% of those whose sending areas were urban, ended up in urban areas. The multi-directional movement of children may be related to independent movement of children in the context of adult labour migration, where for example children are "sent home" from urban to rural households, or brought from rural households to join migrant parents in urban areas.

The spatial patterns of child migration are explored further by comparing sending and destination provinces (Table 8).

Table 8. Transition matrix of sending and receiving provinces

	Receiving province (2014-2015)										
Sending province (2008)	W Cape	E Cape	N Cape	F State	KZ-Natal	N West	Gauteng	Mpuma-langa	Limpopo	Outside RSA	Total
W Cape	7.8	81.5	10.8	-	-	-	-	-	-	-	100
E Cape	26.4	47.9	-	0.5	8.6	3.4	13.1	-	-	-	100
N Cape	-	19.8	34.0	-	-	16.5	29.7	-	-	-	100
F State	-	-	-	51.9	10.0	21.1	17.0	-	-	-	100
KZ-Natal	0.5	7.5	-	0.9	78.9	-	10.8	1.4	-	-	100
N West	-	20.2	2.3	-	2.1	42.5	28.8	-	-	4.1	100
Gauteng	-	4.8	-	2.7	3.1	6.3	49.7	7.5	25.9	-	100
Mpumalanga	-	-	-	2.8	3.4	4.9	34.3	46.8	7.8	-	100
Limpopo	-	-	-	-	-	5.2	33.8	16.2	44.7	-	100
Total	4.9	13.8	0.6	2.8	18.1	6.3	29.6	8.4	15.3	0.2	100

Source: NIDS Waves 1 & 4, panel weights used.
(African children aged 0-8 in Wave 1)

Nearly half (47%) of the cross-municipality moves recorded for children included cross-provincial moves, in that children who had moved district were living in a different province in 2014-15 to their province in 2008 . A quarter of those whose sending household was in the Eastern Cape ended up living in the Western Cape, while 48% remained in the Eastern Cape and 13% went to Gauteng. Gauteng had the highest in-migration rate, receiving 30% of all child migrants: 34% of migrants from Mpumalanga and Limpopo, 30% from the Northern Cape and 29% from North West migrated to Gauteng. KwaZulu-Natal is striking in that the majority of child migrants (79%) remained within the same province. The comparatively high level of internal migration within KwaZulu-Natal was also recorded for adult migrants, based on the same data (Schiel and Leibbrandt 2015). This could be related to the fact that KwaZulu-Natal contains both a large rural population (mostly located in the former homeland area of KwaZulu), as well as a metropolitan city, which attracts large numbers of labour migrants. It should be noted that the unweighted numbers are very small, and the confidence intervals wide. Migration rates from sending provinces are shown in Table 9 below, with standard errors, confidence intervals and unweighted numbers.

Table 9. Migration rates by province of sending household

Prov	Proportion	SE	95% CI-	95%CI+	n (unweighted)
W Cape	0.0710	0.0222	0.0379	0.1292	10
E Cape	0.1500	0.0188	0.1167	0.1908	94
N Cape	0.0984	0.0445	0.0391	0.2266	18
F State	0.0706	0.0248	0.0348	0.1379	17
KZ-Natal	0.1137	0.0142	0.0886	0.1448	165
N West	0.1138	0.0337	0.0624	0.1988	31
Gauteng	0.2039	0.0338	0.1453	0.2785	59
Mpumalanga	0.1016	0.0233	0.0640	0.1576	34
Limpopo	0.1540	0.0263	0.1091	0.2131	73
SA	0.1393	0.0101	0.1207	0.1604	501

Source: NIDS Waves 1 & 4, panel weights used.
(African children aged 0-8 in Wave 1)

Characteristics of child migrants

This section describes the characteristics of migrant and non-migrant children, with a particular focus on child migration in relation to maternal co-residence and migration.

Household characteristics

Table 10 presents selected household characteristics for children who did and did not migrate. Households are smaller, on average, for children who migrated after wave 1 than for those who did not migrate. The difference in baseline household size between migrant and non-migrant children is significant, as is the difference between household sizes after the migration event.

The mean per capita household income of sending households from which children migrate is slightly higher than for those with non-migrant children, signalling that migration may be dependent on the resources of sending households to support the costs of migration. This echoes other research which found that receipt of social grants may be a driver of migration among youth: The likelihood of migration among young men, for example, increases when they are co-resident with someone who is eligible for an old-age pension (i.e. over 60 years) (Ardington et al. 2013). Similarly, there is a statistically significant difference between the mean household incomes for migrant and non-migrant children in wave 4, suggesting that migrant children are better off financially, both before and after migration.

Differences in dwelling type for migrant and non-migrant children at baseline seem to suggest a higher rate of migration from informal housing: 16% of non-migrants lived in formal dwellings at baseline, compared with 23% of migrants.

Table 10. Household characteristics of migrant and non-migrant children

	Non-migrant child			Migrant child			?-value
	%	SE	95% CI	%	SE	95% CI	
Household size (mean)							
2008 (sending household)	6.76	0.177	(6.4-7.1)	5.77	0.238	(5.3-6.2)	0.001
2014 (destination household)	6.56	0.161	(6.2-6.9)	4.79	0.172	(4.5-5.1)	<.0001
Per capita HH income (mean)							
2008 (sending household)	572.32	33.262	(507-638)	673.86	111.472	(455-893)	0.021
2012 (destination household)	1258.77	78.282	(1105-1413)	1480.51	136.375	(1212-1749)	<.0001
Dwelling type (sending household)							0.050
Formal	62.6%	0.025	(57.6-67.4)	54.6%	0.049	(44.8-63.9)	
Informal	15.8%	0.019	(12.5-19.8)	23.3%	0.045	(15.6-33.4)	
Traditional	21.5%	0.023	(17.4-26.4)	22.1%	0.032	(16.5-29.1)	

Source: NIDS Waves 1 & 4, panel weights used.
Weighted percentages based on 3750 cases (African children aged 0-8 in Wave 1, re-interviewed in Wave 4).
Statistical significance: Pearson chi-2 test accounting for survey design; Wilcoxon rank-sum test for difference in means, unweighted

A comparison of the individual baseline characteristics of migrant and non-migrant children (Table 11) shows that children who migrated over the seven-year period were younger than those who did not migrate. This supports the findings of Bennet et al, from their analysis of surveillance site data from the Africa Centre (2015b), which showed that children younger than 5 years were more likely than older children to be included in their parent's destination household. The mothers of migrant children are also younger than those of non-migrant children (a small but statistically significant difference: The mean age of mothers is 30.9 for non-migrant children, and 28.7 for migrant children). Schiel and Leibbrandt (2015), using the same data for an adult-centred migration analysis, find that migrant adults were younger than non-migrant adults, although the mean ages were higher (30 and 37 years respectively), presumably because adult migration rates were not conditioned on their being parents of children under eight years at baseline.

Mothers of migrant children may be slightly better educated than those of non-migrant children, although maternal education levels were fairly low generally, with less than 30% of women in either

category having completed school or further education. The higher education levels among mothers of migrant children echo findings from adult migration studies, where labour migrants were younger but had more years of schooling than non-migrants, and were more likely to have completed matric (Grieger et al. 2014; Schiel and Leibbrandt 2015).

Children's orphan status was not significantly associated with child migration between waves 1 and 4. Children who were already orphaned in wave 1 may have moved household already, if changed care arrangements were required, and moves prior to wave 1 were not captured in the panel analysis.

Employment and co-residence status of mothers were significantly related to child migration: Children who migrated had mothers who were less likely to be employed and more likely to be looking for work in wave 1 than those who had not migrated. The mothers of children who migrated during the three waves were also more likely to be living elsewhere, compared with mothers of non-migrant children. This suggests that child migration is strongly linked to the work-seeking activities of their mothers.

Table 11. Characteristics of migrant and non-migrant children

	Non-migrant child			Migrant child			r-value
	%	SE	95% CI	%	SE	95% CI	
Child's age in wave 1							0.004
0-5 years	84.0%	0.012	(81.4-86.2)	16.0%	0.012		
6-10 years	88.2%	0.012	(85.5-90.4)	11.8%	0.012		
Mother's age in wave 1							<0.0001
Mean age of mother	30.9	0.225	(30.5-31.4)	28.7	0.427		
Mother's education level							0.0512
No schooling	5.0%	0.006	(3.9-6.3)	4.0%	0.015		
Primary	18.6%	0.015	(15.9-21.7)	11.0%	0.022		
Some secondary	48.1%	0.017	(44.9-51.4)	53.8%	0.043		
Matric	26.5%	0.016	(23.5-29.6)	27.5%	0.033		
Tertiary	1.8%	0.004	(1.2-2.7)	3.8%	0.013		
Mother's employment status							0.0328
Not economically active	30.2%	0.019	(26.6-34.0)	26.4%	0.039		
Unemployed, not looking (discouraged)	11.2%	0.010	(9.3-13.4)	13.5%	0.031		
Unemployed, looking for work	24.9%	0.020	(21.2-28.9)	36.4%	0.044		
Employed	33.8%	0.018	(30.4-37.4)	23.8%	0.044		
Mother residence status							0.0027
Living in household	78.3%	0.011	(76.0-80.5)	69.9%	0.033		
Living elsewhere	17.8%	0.011	(15.8-20.0)	27.3%	0.031		
Deceased	3.9%	0.005	(3.0-5.0)	2.8%	0.009		
Orphan status							0.4031
Non-orphan	88.3%	0.010	(86.3-90.1)	88.0%	0.023	(82.7-91.9)	
Maternal (mother dead, father alive)	2.1%	0.003	(1.6-2.9)	2.1%	0.009	(0.9-4.7)	
Paternal (father dead, mother alive)	7.8%	0.007	(6.4-9.3)	9.3%	0.021	(5.9-14.5)	
Double (both parents dead)	1.7%	0.004	(1.1-2.7)	0.6%	0.003	(0.2-1.7)	

Source: NIDS Waves 1 & 4, panel weights used.
Weighted percentages based on 3750 cases (African children aged 0-8 in Wave 1, re-interviewed in Wave 4).
Statistical significance: Pearson chi-2 test accounting for survey design; Wilcoxon rank-sum test for difference in means, unweighted

Given the importance of the connection between parental co-residence and child migration, we construct variables based on change in parent co-residence status over the three waves. Although the analysis focuses primarily on children and their mothers, this analysis was undertaken for fathers too. The analysis is based only on parents who were alive throughout waves 1-4. Four categories are distinguished:

- children whose parents (mother / father) were living in the same household in both wave 1 and wave 4: In the case of non-migrant children, this would probably indicate non-migrant parents over the period, while in the case of migrant children it would indicate co-migration or, if the parent and child moved separately, it was at least in the same direction and within the 7-year period;
- children whose parents were co-resident in wave 1, but not resident in the same household in wave 4: For non-migrant children this would indicate parent migration away from the household; for migrant children it would indicate independent child migration, possibly away from the parent's household;
- children whose parents were absent in wave 1 but co-resident in wave 4: For non-migrant children this would indicate parental migration into the household, while for migrant children it would indicate independent migration of the child into the parent's household;
- children whose parents were absent in both waves 1 and 4.

The results of the analysis are presented in Table 12 below:

Table 12. Change in parental co-residence status for migrant and non-migrant children

	Non-migrant child			Migrant child			ρ–value
	%	SE	95% CI	%	SE	95% CI	
Mother co-residence (living mothers)							<0.0001
Co-resident in both waves	73.2%	0.012	(70.7-75.5)	51.3%	0.044	(42.7-59.8)	
Co-resident in W1, absent in W3	9.0%	0.008	(7.6-10.8)	21.2%	0.041	(14.3-30.3)	
Absent in W1, co-resident in W3	4.8%	0.005	(3.9-6.0)	16.1%	0.027	(11.6-22.1)	
Absent in both waves	12.9%	0.009	(11.3-14.8)	11.3%	0.021	(7.8-16.1)	
Father co-residence (living fathers)							<0.0001
Co-resident in both waves	30.9%	0.016	(27.7-34.2)	12.7%	0.031	(7.7-20.2)	
Co-resident in W1, absent in W3	6.4%	0.009	(4.9-8.3)	27.3%	0.048	(18.9-37.7)	
Absent in W1, co-resident in W3	5.0%	0.006	(3.9-6.4)	10.9%	0.025	(6.9-17.0)	
Absent in both waves	57.7%	0.018	(54.2-61.1)	49.1%	0.049	(39.5-58.7)	

Source: NIDS Waves 1 & 4, panel weights used.
Weighted percentages based on 3,750 cases (African children aged 0-8 in Wave 1, re-interviewed in Wave 4).
Statistical significance: Pearson chi-2 test accounting for survey design.

The table shows that children who migrate are more likely to experience a change in co-residence arrangements with their parents than those who do not migrate. Only 16% of non-migrant children with living mothers had a change in their mother's co-residence status when comparing wave 4 to wave 1, whereas 42% of children who migrated also had a change in their maternal co-residence arrangements. Similarly, only 10% of non-migrant children had a change in the co-residence status of their fathers, compared with 32% of those who migrated. Child migration is more likely to result in separation from parents with whom children previously shared a household, than cohabitation with previously absent parents. This suggests that the net effect of child migration is away from parents

(for example, children being sent to live with someone else) rather than inclusion in the migrant parent's household.

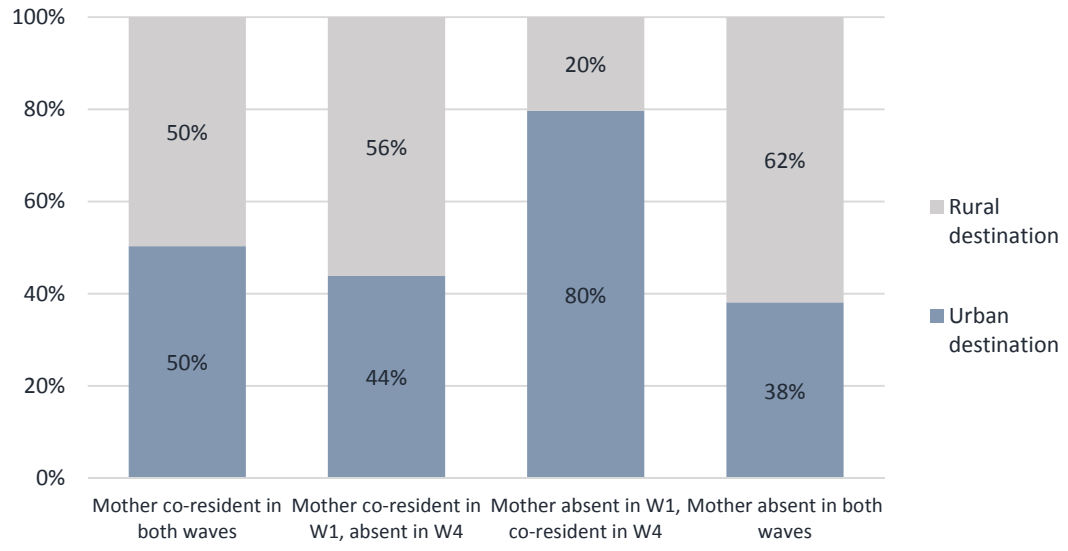
Maternal and child co-mobility

The relationship between maternal co-residence and direction of migration was explored further, and the results summarised in Figure 1 below. The analysis is based only on children in the panel who migrated across municipal boundaries between waves 1 and 4. Child migrants whose mother was co-resident in at the time of both visits were equally likely to migrate to households in rural or urban areas.

Migrant children whose mothers were alive but absent across the two waves more likely to migrate into households in rural areas (62%) than to urban areas (38%). A similar pattern was found for children whose mother's residence status had changed from co-resident to absent (56% of these migrant children ended up in rural households, while urban households were the destinations for 44%).

The most striking variation is among child migrants whose direction of movement was to join their mother: 80% of those whose mother's residence status had changed from absent to co-resident had moved to urban areas. This suggests a link between the geography of moves and maternal co-residence, where migration to (or within) urban areas facilitates co-residence with mothers, while migration to (or within) rural areas serves to separate children from mothers.

Figure 1. Urban/rural profile of receiving households for child migrants, by change in mother's co-residence status



Source: NIDS Waves 1 & 4, panel weights used.
(African children aged 0-8 in Wave 1)

Turning finally to the direct relationship between child and maternal migration, it should be remembered that not all children could be matched to mothers, even when it was established that their mothers were alive. The section in the child questionnaire that asks for information about absent parents does not record the specific information needed to determine whether parents have migrated across municipal boundaries. Neither does the household roster, which only records limited information on non-resident household members. The only way to construct an equivalent migration

measure for mothers is to rely on the household-level data where the geographic location of the household is stored. In order to link this information to an individual, they would need to be attached to a household that was sampled in the first wave.

Nevertheless there is a clear link between child and maternal migration: Of the 7.5% of children who migrated between 2008 and 2014, and who had living mothers, 51% of mothers had migrated, 21% had not moved and 28 could not have their mobility accounted for – suggesting that they were already migrants and out of the household.

A migration typology of child and mother migration was constructed using the child-migrant and mother-migrant variables derived from a difference in district municipality across waves 1-4, as well as variables on the mother's vital status and co-residence with the child at waves 1 and 4. The typology is presented in Table 13, with unweighted and weighted frequencies and percentages.

Table 13. Child & mother migration events

	Unweighted n	Unweighted %	Weighted N	Weighted %
child & mother co-migrated	184	4.91	429 000	6.1%
child migrated away from mother	55	1.47	107 000	1.5%
child migrated independently (mother dead)	16	0.43	26 000	0.4%
child migrated independently (mother elsewhere)	67	1.79	101 000	1.4%
child migrated to join mother	107	2.85	172 000	2.4%
mother migrated away from child	186	4.96	255 000	3.6%
mother migrated to join child	170	4.53	289 000	4.1%
no migration events: child & mother always co-resident	145	3.87	243 000	3.5%
no migration events: child and mother not co-resident	1872	49.92	3 727 000	53.0%
no migration events: child orphaned at w1, never moved	488	13.01	824 000	11.7%
unclassifiable / short distance moves	460	12.27	857 000	12.2%
Total	3750	100	7 028 000	100

Source: NIDS Waves 1 & 4, panel weights used.
(African children aged 0-8 in Wave 1)

It is clear that migration events for children take multiple forms and directions. Overall, 20% of children experienced some kind of migration event in relation to their mother during the course of the three waves of NIDS. This equates to 1.4 million children for whom migration events occurred – either through their own movement, or that of their mother, or both. A further 68% of children (4.8 million) did not experience any migration event. This category includes children who were consistently co-resident with their mother and stayed in the same municipality, non-migrant children whose mothers were consistently living elsewhere, and children whose mothers had died prior to the first wave and who never moved. Twelve percent of children in the panel sample could not be classified according to this migration typology, either because there were missing data, or because there was a change in co-residence arrangements in the absence of a cross-municipality move (the child or mother may have moved a short distance within the same municipality).

The relationship between child-mother migration events and the spatial dimensions of migration become apparent when looking at the final destination type for children in the migration typology (Table 14). Particularly striking is the finding that, when children migrated to join their mothers (who

were already living elsewhere), 81% of their destination households were in urban areas. Conversely, when mothers migrated away from children, 82% of the children left behind were staying in rural households. Sixty percent of children who migrated away from their mothers (or were sent away) ended up in rural households, while 66% of non-migrant children whose mothers consistently lived elsewhere remained in rural households. Although the standard errors are large, the differences in the distributions are statistically significant ($p<0.001$).

Table 14. Area-type destination for children who experienced migration events

	Urban		Rural	
	%	SE	%	SE
child and mother co-migrated	50%	0.059	50%	0.059
child migrated away from mother	40%	0.100	60%	0.100
child migrated independently (mother dead)	59%	0.164	41%	0.164
child migrated independently (mother elsewhere)	41%	0.086	59%	0.086
child migrated to join mother	81%	0.047	19%	0.047
mother migrated away from child	18%	0.047	82%	0.047
mother migrated to join child	40%	0.065	60%	0.065
no migration events	42%	0.064	58%	0.064
no migration events – child & mother co-resident	54%	0.034	46%	0.034
no migration events – child and mother not co-resident	34%	0.053	66%	0.053

Source: NIDS Waves 1 & 4, panel weights used.
(African children aged 0-8 in Wave 1)

These findings show that the direction of maternal migration is primarily to urban areas, and that if children migrate to join their mothers, they are likely to move to (or within) urban areas. Conversely, there are indications that rural areas (which are predominantly the former homelands) remain holding places for children whose mothers are urban migrants, and that there is some return migration of young children to rural areas.

Discussion and policy implications

The policy implications related to these findings need to be considered in light of the historic context and the structural constraints to movement and family co-residence.

There was some expectation towards the end of apartheid that, once the legislative controls on population movement were lifted, families would be reunited, re-constituting themselves either as extended families, or in a simpler (more nuclear) form. On the other hand, some predicted that the effects of apartheid on family life would persist into the future and that split families would not necessarily reunite if the legal restrictions were lifted. Writing in the mid-1980s, Charles Simkins surmised that "influx control will probably be abolished or erode, perhaps rapidly, in the coming years. The impact of this on African household structure… will probably be slow to work itself out…. the effects of decades of this system could therefore be expected to survive (in diminished or attenuated form) the demise of the system itself" (Simkins 1986:18).

This is a preliminary study, which will be expanded through more detailed analysis of the panel data and through qualitative field research. The initial findings suggest that Simkins was correct in his prediction, and that the effects of (unlegislated) influx control continue to manifest themselves in divided families and the separation of children from parents. Whether or not these arrangements are detrimental to children is not the focus of the study: Grandparents have successfully raised children for many decades, and for many reasons, including cultural tradition and preference. The focus of the larger study is about the extent to which families are able to make choices about parenting – specifically mothering – and the ways in which those choices may be limited by structural constraints that resemble the legal constraints under apartheid.

This descriptive study of child migration finds that about 14% of African children under 15 had migrated across municipalities over a seven-year period. Three times that number were mobile in some way in that they may have moved house but stayed within the same municipality. This supports evidence elsewhere that children are highly mobile. It also shows that an even larger share of children do not move, even when their mothers move.

The analysis finds that younger children were more likely than older children (within the age band) to migrate. Other studies have similarly found that migration rates decline with the rising age of the child, and pick up again after the age of 15. The movement of young children may be related to their particular need for continuous care – a function which is often undertaken by family members in the absence of accessible, affordable, or adequate child care facilities.

The analysis has described dynamics of maternal co-residence and mobility among children which suggest the endurance of apartheid-era demographic and migration patterns. Children living without their mothers are concentrated mainly in rural (former homeland) areas, and when they do migrate to join their mothers the movement is likely to be towards urban areas. Conversely, children who consistently have non-resident mothers or are "sent away" from the mother's household are likely to end up staying in rural areas. In this way, the rural homelands continue to be dormitory areas for the dependents of those working in (or attempting to join) the labour force, and rural households continue to carry a large burden of care for the dependents of those working in (or attempting to join) the urban labour force. This is precisely the vision that underpinned the establishment of the independent homelands.

The multi-directional spatial movement identified among children is strikingly different from adult migration patterns reported elsewhere, where the tendency has been for high rates of intra-area type movement, and an overall predominance of movement towards cities. Children's migration patterns, on the other hand, suggest a fairly even split between urban and rural areas as child migration destinations. These differences may be related to the reasons for moving – for example, the quest for employment in the case of adults, and the need for care or other services in the case of children. This distinction, and the reasons for it, will require further investigation.

Child migration often occurs over long distances. Half of the cross-municipality moves recorded for children were also cross-provincial moves, with Gauteng having the largest share of in-migrant children. The Eastern Cape was the main destination province for migrant children from the Western Cape. In KwaZulu-Natal, intra-province moves outweighed moves to other provinces.

Sending households for migrant children tend to be slightly smaller and wealthier than those accommodating non-migrant children. Mean per capita household income and household size are related in that total household income is divided by the number of household members to derive per

capita income. It will be worth investigating the effect of alternative equivalence scales on per capita income. But irrespective of the accuracy of the means, few of the households in this sample could be described as wealthy. The relevance of high mean per capita income in out-migration households is that financial resources are needed to support migration. Other research (for example, Ardington et al. 2009) has shown that social grants, in particular old age pensions, help to support labour migration. The child support grant is the largest of all cash transfers in numeric terms, but by far the smallest in value. In the absence of improved work opportunities, increased social assistance targeted to children would give families greater freedom to choose how to structure their households.

Mothers of migrant children are slightly better educated than those of non-migrant children, and are also more likely to be actively seeking work at baseline. If child migration is linked to work-seeking behaviour, then the order is not clear: it may be that children are sent away to be cared for by someone else, freeing up the mother to dedicate herself to the job hunt. Alternatively, if she secures a stable job then the mother might send for her child to join her at her work-home, or might need her child to be cared for elsewhere if formal child care is unavailable or expensive, and she does not have family members living with her who can care for the child while she is at work. If the lack of adequate and affordable child care is a major reason for the separation of mothers and children, then this is an important motivation for scaling up subsidised early childhood care and educational facilities.

Child migration is associated with changes in parental co-residence – in relation to both mothers and fathers. In both cases, the migration of the child is more likely to be associated with separation from parents than with a shift from separation to co-residence. However maternal co-residence with children is more common than paternal co-residence. The majority of migrant children move with their mothers, while half the fathers of migrant children are absent from the household both before and after the child's migration.

Under apartheid, urban residential rights for African families (dependent women and children) were not only subject to the increasingly stringent requirements of Section 10 of the Group Areas Act, but were also contingent on the availability of "suitable" accommodation. From the late 1960s housing construction in urban townships slowed and eventually ground to a halt, while single sex hostel accommodation was expanded (Hindson 1987). The shortfall of family housing became an indirect way of preventing urbanisation of women, children and other "surplus" Africans, and left stark choices for the families of urban migrants: To be geographically separated, or to attempt to cohabit, illegally, in unsuitable accommodation. This, again, is a matter in which migrant parents have to make strategic decisions. Migration theory tells us that informal settlements are key as stepping stones to the city, and in the absence of affordable housing options in formal areas, informality is not necessarily a temporary arrangement but may continue for years. Informal settlements are notoriously risky places for children to grow up. Decisions about co-residence and migration arrangements may therefore be taken in consideration of the safety and best interests of the child.

If living arrangements cannot be resolved, this may deter parents from including children in their urban households. The service delivery models of municipalities are based on assumptions about the number of households that need to be housed and serviced. These are generally calculated from existing populations, rather than potential in-migrants, including dependant family members who may wish to join urban migrants. Family-oriented rental and social housing options may assist in enabling co-migration and urbanisation.

The spatial development framework (Office of the President 2006) acknowledged the migration trend towards cities and, in theory, planned for this by prioritizing investment in centres with economic potential – in other words, places of in-migration. The National Development Plan ("Vision 2030") states that "Alongside hard work and effort, capability and the opportunities that flow from development enable individuals to live the lives to which they aspire". A new green paper on human settlements is being drafted in response to the National Development Plan, and it is important that settlement and housing plans take account of the needs of potentially mobile children. From a policy perspective, there is a need for an expanded and rigorous evidence base on patterns, predictors and outcomes of child mobility, and aspirations about family form and care arrangements for children – all of which are under-researched issues.

The issue of decision-making around child and maternal migration also needs further investigation. What household forms do families hope to achieve, and what are the obstacles to realising this? How are decisions made about where children should live when adults migrate? Little is known about the drivers and constraints to child migration and incorporation into the households of migrant parents. The new Family Policy of the Department of Social Development raises concerns about fractured families in South Africa, but it is important to acknowledge the enduring structural barriers to co-residence, as well as to understand the strategic considerations, preferences, and choices that households make around living arrangements and child care.

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southern africa labour and development research unit

The Southern Africa Labour and Development Research Unit (SALDRU) conducts research directed at improving the well-being of South Africa's poor. It was established in 1975. Over the next two decades the unit's research played a central role in documenting the human costs of apartheid. Key projects from this period included the Farm Labour Conference (1976), the Economics of Health Care Conference (1978), and the Second Carnegie Enquiry into Poverty and Development in South Africa (1983-86). At the urging of the African National Congress, from 1992-1994 SALDRU and the World Bank coordinated the Project for Statistics on Living Standards and Development (PSLSD). This project provide baseline data for the implementation of post-apartheid socio-economic policies through South Africa's first non-racial national sample survey.

In the post-apartheid period, SALDRU has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. In line with its historical contribution, SALDRU's researchers continue to conduct research detailing changing patterns of well-being in South Africa and assessing the impact of government policy on the poor. Current research work falls into the following research themes: post-apartheid poverty; employment and migration dynamics; family support structures in an era of rapid social change; public works and public infrastructure programmes, financial strategies of the poor; common property resources and the poor. Key survey projects include the Langeberg Integrated Family Survey (1999), the Khayelitsha/Mitchell's Plain Survey (2000), the ongoing Cape Area Panel Study (2001-) and the Financial Diaries Project.

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