

Demographic Challenges Facing the Elderly in Sub-Saharan Africa

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Abstract:

This paper analyzes the situation of the elderly in a large number of sub-Saharan African countries. The paper uses data from two sources – IPUMS-International census microdata on over 1.9 million individuals aged 60 and over from 23 censuses for 12 countries and Demographic and Health Survey data from 79 surveys for 34 countries. We find large differences in living arrangements across countries. The percentage of elderly women living alone varies from 2% in Senegal to over 15% in Kenya. The percentage of elderly in “skip-generation” households ranges from 2% in Senegal to 26% in Malawi. The paper also analyzes the characteristics of elderly who care for their grandchildren. We find some evidence that the elderly in skip-generation households are positively selected, helping explain the fact that studies of the impact of caregiving often find little or no apparent negative impact on the elderly from caring for orphaned grandchildren.

Introduction

The elderly in sub-Saharan Africa face many challenges. Many of them have had to take on a substantial caregiving role in response to HIV/AIDS, caring both for their adult children suffering from the disease and for the orphaned grandchildren. Rural-urban migration by younger adults may be leaving the elderly disproportionately in rural areas, with limited access to infrastructure and without adult children to help care for them. The elderly in most African countries have low levels of education and very limited financial resources.

This paper analyzes the situation of the elderly in a large number of sub-Saharan African countries. The paper takes advantage of data from two main sources – census data provided via the Integrated Public Use Micro Samples – International (IPUMS-I) (Minnesota Population Center 2011) and the Demographic and Health Surveys (2011). We believe it is by far the most ambitious attempt to analyze the status of the elderly in a large number of African countries. The data include 79 DHS samples representing 34 countries and 23 IPUMS samples representing 12 countries (all of which are also represented in the DHS samples). The DHS data and IPUMS data each have advantages and disadvantages. The IPUMS census files provide much larger sample sizes, a valuable feature when looking at relatively small older cohorts. The DHS, on the other hand, has data for more countries, and often at a higher frequency than census data.

Previous Literature

As pointed out in a review by the U.S. National Academy of Sciences (Menken and Cohen 2006), research on the elderly in sub-Saharan Africa has lagged behind research on the elderly in Asia and Latin America. One important area where there has been substantial research on the elderly in Africa has been research related to the role of the elderly in caring for AIDS orphans. A large body of research over the past decade has examined the educational and health outcomes for AIDS orphans who have been absorbed into non-parental households, generally headed by kin

(Subbarao and Coury 2004; Case, Paxson, and Ableidinger 2004, Case and Ardington 2006).

More recent work has analyzed the impact of HIV/AIDS on the older generation. Parents of those infected with HIV are affected in many ways, including providing care during illness, absorbing direct financial costs of illness and death, losing financial support, and providing care for orphaned children (Ntozi and Nakayiwa 1999; Williams and Tumwekwase 2001; Nyambedha et al. 2003; Knodel and Im-Em 2004, Knodel et al. 2007; Schatz and Ogunmefun 2007, Knodel 2008).

The role of grandparents caring for AIDS orphans has received extensive discussion in research on the impact of HIV and AIDS in Africa and Asia. Saengtienchai and Knodel (2001) found that grandparents were almost always the primary caretakers of AIDS orphans in Thailand, although other surviving children sometimes played an important role. Studies from a number of countries indicate that grandparents play a major role in caring for AIDS orphans in Africa (Ntozi and Nakayiwa 1999; Foster and Williamson 2000; Nyambedha et al. 2003; Subbarao and Coury 2004). While a number of studies report that caring for orphans imposes a burden on grandparents, most of the evidence is qualitative and does not directly compare grandparents who are caring for grandchildren with other grandparents. Nyambedha et al. (2003), for example, provide a number of reports from grandparents about the burdens imposed by having to provide schooling, food, and discipline to orphaned grandchildren.

As pointed out by Williams et al. (2010), many papers analyzing the impact of caregiving on the elderly find little or no apparent negative effect. The elderly who are caring for grandchildren are often somewhat better off, or at least no worse off, than elderly who are not caring for grandchildren when compared in the cross-section (e.g., Ardington et al. 2010). Williams et al. note that one obvious explanation of this pattern is that it is the better-off elderly who end up taking in orphaned grandchildren. There are very few data sets that provide the kind of information necessary to identify the causal impact of caring for grandchildren. The data we will

analyze is subject to the same criticism, but we will at least be able to look at the characteristics of the elderly who care for grandchildren across a large number of countries and time periods.

Compared to the extensive literature on the living arrangements of the elderly in Asia, there has been relatively little literature analyzing the case of sub-Saharan Africa. One such study is Zimmer and Dayton (2005), who used DHS data collected through 2000 to analyze the living arrangements of the elderly in 24 countries. They find that 46% of adults aged 60 and over lived with a grandchild, with 8% living with a grandchild that had at least one deceased parent. Also using African DHS data, Kautz et al. (2010) find a positive relationship between AIDS mortality and the prevalence of elderly living alone and the prevalence of skip-generation households. Our approach will be similar to that of Zimmer-Dayton and Kautz et al. We will supplement the DHS data with the much larger census data sets that have recently become available for a number of African countries. The census data make it possible to look at determinants of living arrangements using micro-data for much larger samples, allowing for more informative multivariate analysis.

Data

The distribution of census data through the Integrated Public Use Micro Samples – International (IPUMS-I) project (Minnesota Population Center 2011) has greatly increased the availability of public access census microdata for sub-Saharan Africa. Table 1 summarizes the data available on the population aged 60 and over for African countries as of the June 2011 release of IPUMS-I. There are 23 separate censuses representing 12 countries. We limit the analysis to individuals living in households, excluding those living in group quarters. The average number of individuals aged 60 and over in the IPUMS files is over 80,000, with a range from 112,000 (Guinea 1983) to 251,000 (South Africa 2001). Pooling across all IPUMS-I files for sub-Saharan Africa we have data on almost 1.9 million individuals aged 60 and over. As shown in the table, the elderly are only about 4-5% of the population in most African countries. This is well below

the percentage in this age group in other developing regions, though the absolute number and the proportion elderly will be increasing rapidly in coming decades (Velkoff and Kowal 2006, 2007). Given the small proportion elderly in these populations, having the large sample sizes from census data is extremely valuable in analyzing the elderly.

We also use household data from the Demographic and Health Surveys. Although the DHS surveys focus on women aged 15-49, the DHS household file is based on a representative sample of all households that is used to identify women aged 15-49. As pointed out by Zimmer and Dayton (2005), it therefore provides a representative sample of the elderly and can be used to analyze living arrangements. Table 2 shows the number of individuals aged 60 and over included in each of the 79 DHS surveys for sub-Saharan Africa, representing 34 countries. The average number is about 2,000, for a total of 167,000 individuals across all 79 DHS samples. The obvious advantage of the DHS data is the much larger number of countries represented. The smaller sample size is a clear disadvantage, making it difficult to look, for example, at differences between 60-69 year-old women and 80-89 year-old women.

Living Arrangements

Tables 3 to 6 present some simple summary measures describing the living arrangements of men and women aged 60 and over using IPUMS-I census data and DHS data. One advantage of the IPUMS-I census files is that pointers have been created to identify the spouses of all individuals in the household. In order to make the IPUMS-I tables comparable to the DHS data, we created a similar variable in the DHS datasets, following the procedures used to create the spouse identifier variable in the census data as closely as possible (see Sobek and Kennedy (2009) for details on the creation of the spouse identifier variable in IPUMS-I datasets).

The chosen types of living arrangements are mutually exclusive and include the following categories: living alone, living only with a spouse, living with a spouse and household members

aged 0-14 and 15-59 years, living with a spouse and 0-14 year olds only, living with a spouse and 15-59 year olds only, living with household members aged 0-14 and 15-59 years (without a spouse), living with 0-14 year olds only (without a spouse), and living with 15-59 year olds only (without a spouse). Elderly living with 0-14 year olds but without 15-59 year olds are defined as living in skip-generation households.

To get a sense of some of the underlying mechanisms that lead to the patterns in living arrangements that we see in tables 3 to 6, it is useful to first look at the situation in one country in more detail. Figures 1 to 3 use IPUMS-I data from the 2008 census in Malawi for this purpose. Figure 1 shows the living arrangements of the elderly by age and gender. As we can see, women are most likely to live with other adults and without a spouse, and especially so the older they are. The proportion of women living alone also rises somewhat with age and then stabilizes. Men are much less likely to live alone than are women – men predominantly live with their spouse and other adults. The figure also shows that men over 60 often live with a spouse under 60 and other household members, an indication of the fact that men tend to be much older than their wives. Even at age 80-84 the proportion of men who live with their below 60-year old spouse and other household members is still above 10 percent.

These large age differences between spouses informs the gender differences we see in the prevalence of elderly living in skip-generation households, since those by definition require the absence of any adult below 60. Since men are much more likely than women to be married to a substantially younger spouse, men are much more likely than women to be living with an adult below 60, and therefore much less likely to live in a skip-generation household. The gender differences are decreasing in age, however, and the proportion of men and women living in skip-generation households stabilizes and is quite similar for men and women over 80.

Figure 2 illustrates that women are much more likely to be widowed at any age than men, and that this disparity is increasing in age. Women are more likely than men to survive their spouses everywhere in the world, but this seems to be exaggerated in Africa due to a very large age gap between husband and wives and substantial mortality by age 65 or 70. Figure 2 shows that even at age 50, 18% of Malawian women are widows, compared to only 2% of men. At age 70, 43% of women are widows compared to 6% of men. At the same time, the proportion of women living alone is much lower the proportion widowed, demonstrating that most widows live with other household members rather than on their own. At age 70 about 13% of women live alone, less than 1/3 of the proportion that is widowed. Most widows and widowers appear to have alternatives to living on their own.

Figure 3 shows the large age differences between spouses that is already apparent in Figure 1 and that leads to the gender differences in widowhood in Figure 2. The distribution of husband's age minus wife's age for Malawian women aged 40-59, before mortality has become an important factor, is highly skewed to the right. Fewer than 10% of women are older than their husbands, and only 30% have husbands who are less than 4 years older. The mean age gap is 6.5 years, with 40% of women having husband who are at least 7 years older.

These observations for Malawi are important to keep in mind in order to correctly interpret the patterns of living arrangements of the elderly in sub-Saharan Africa that are reported in Tables 3 to 6. Tables 3 and 4 show the living arrangements of the elderly in the IPUMS-I datasets for women and men respectively. As we can see in Table 3, living alone is relatively uncommon, though it is as high as 16% for women in Kenya in 1989 and it is generally more common than living with spouse only in many of the countries. Comparing these results to those for men in Table 4, men are generally more likely to live with a spouse only than to live alone. As we saw in Figures 2 and 3, this is a reflection of the fact that women typically out-survive their husbands,

which is the result of the combination of longer life expectancy for women and the fact that men are typically older than their wives. It is quite common for both women and men to live with 0-14 year old children and with prime-age adults. We will look more closely at skip-generation households below.

Tables 3 and 4 reveal considerable diversity across countries and between men and women. In Senegal less than 3% of older women live alone or with only a spouse, while in Kenya about 20% of women live either alone or with only a spouse. In Senegal about 70% of older women live with children and prime-aged adults (no spouse). The contrasting survival patterns of men and women are seen in the fact only 14% of men live in the “children and prime-aged adults (no spouse)” arrangement, while 75% of men live with spouse, children, and others. In general, Tables 3 and 4 reveal that while living with prime-aged adults and children is the most common form of living arrangements in all countries, this type is more common in West Africa than in East Africa, where the elderly are relatively more common to live alone or in skip-generation households.

Tables 5 and 6 look at the same categories of living arrangements in the DHS datasets, which provide a richer set of countries, and more frequent observations for a couple of countries than the census data. The qualitative patterns here are similar to the ones in Tables 3 and 4, although the percentages of particular living arrangements sometimes differ quite significantly from the ones in the corresponding IPUMS tables. This seems to be due to the much smaller samples in the DHS datasets as well as due to differences in the definition of households between census data and demographic household surveys.

Skip-Generation Households

In light of the previous literature on who is taking care of orphans, one particularly interesting type of living arrangement to look at are skip-generation households. Table 7 provides a more

direct look at this issue, and allows us to contrast the “young” elderly with the “old” elderly. We see that living with 0-14 year-olds is extremely common, ranging for men aged 60-69 from 45% in South Africa to 91% in Senegal. The prevalence of skip-generation living arrangements varies considerably across countries and by age and sex. Among women aged 60-69 in Malawi, 30% live in a skip-generation household, caring for children aged 0-14 but having no prime-age adults in the household. This compares to only 2% for women aged 60-69 in Senegal. Among 60-69 year-olds, women are much more likely to be in skip-generation households than are men. This is in part because men in this age group may be married to women who are in the 20-59 age group. Among those aged 80 and over the prevalence of skip-generation living arrangements is fairly similar for men and women. While those aged 80 and over are somewhat less likely to be in skip-generation arrangements, it is striking that over 20% of women aged 80 and over are in such arrangements in Malawi and Rwanda. Overall, living in skip-generation households is much more common in East Africa than in other parts of sub-Saharan Africa.

Table 8 shows data on skip-generation living arrangements using DHS data. Because of the smaller sample size we do not disaggregate by age or gender. For countries that have both IPUMS and DHS data the estimates in Table 8 are generally consistent with the estimates in Table 7. For example, only about 2% of elderly in Senegal are in skip-generation arrangements in both tables. Rwanda and Malawi have the highest prevalence of skip-generation arrangements in Table 7, with about 26% of individuals aged 60 and over living with 0-14 year-olds but not with 20-59 year-olds.

As pointed out above, one of the surprising results in research analyzing the impact of caregiving on the elderly is the lack of any apparent strong negative effect of caregiving. This is very likely due to the strong endogeneity of caregiving, with only the healthier and better endowed elderly taking in orphaned grandchildren. In order to analyze the hypothesis that the elderly who

take care of their grandchildren are positively selected from the pool of all elderly, we use regression analysis in Tables 9 and 10. The dependent variable is an indicator variable equal to one if the elderly person is living in a skip-generation household, and zero otherwise. The independent variables of interest include years of schooling, children ever born (available only for women), and dummy variables for having a disability (typically referring to any disability, although in some countries we just have information on employment disabilities), for living in rural areas, and for having access to electricity and water. Other controls that are included but not reported in Tables 9 and 10 are an indicator variable for living with a spouse, age, and age squared.

Table 9 reports the results for these regressions for women. In most countries, living in a skip-generation household is associated with a lower probability of having a disability: In Malawi in 2008, for example, women living in skip-generation households are about six percentage points less likely to have a disability than other elderly women. Women in skip-generation households also tend to live in rural areas, to have less access to services like electricity and water, and to have had slightly more children. The coefficient on years of schooling is typically relatively small but negative, implying that women living without prime-age adults tend to be less educated than other elderly.

The qualitative patterns for men in Table 10 are similar to those for women in Table 9, although the coefficients are often much less precisely estimated. Overall, these regression results suggest that the elderly living in skip-generation households may indeed be positively selected among the general pool of the elderly on the health dimension, although they seem to be somewhat disadvantaged on other factors like access to electricity and water.

Unfortunately, there are no other health measures available in the census files that we could use to supplement these results. We also know nothing about the reason a household turned into a

skip-generation household, which could be due to various factors. If the children's parents temporarily migrated in search for work, for example, the caregiving responsibilities of the grandparents may be very different from the permanent situation of caring for children whose parents died from AIDS. We would expect that the elderly taking care of young children permanently should be more positively selected on health than grandparents only temporarily looking after their grandchildren.

To test this hypothesis, we supplement the census data we have with information on AIDS deaths. UNAIDS reports the annual number of deaths from AIDS for a country, which we normalize by the country's total population in that year. Figures 1 and 2 show scatter plots for the AIDS death rate and the coefficient on the disability variable from the regressions of Tables 9 and 10. Since UNAIDS only reports annual deaths from 1990 onwards, and since coefficients should be comparable across countries, this scatter plot excludes country observations prior to 1990 and those countries that do not have a general disability variable.

Figure 4 shows a negative relationship between the AIDS death rate and the estimated disability coefficients: The higher the AIDS death rate in a country, the lower the probability that an elderly woman living in a skip-generation household will be disabled relative to other elderly women. This is consistent with the hypothesis that the elderly that have to take care of their grandchildren permanently should be healthier than other grandparents to be able to fulfill their caregiving responsibilities.

Figure 5 reveals that a similar relationship does not exist for men. This is consistent with the weaker regression results relative to those of women in Table 10, and also with the idea that it is mainly women who take care of children. Therefore, the health of the grandfather may be less important than that of the grandmother for making skip-generation households work.

Conclusion

This paper contributes to the existing literatures on the elderly in sub-Saharan Africa. Taking advantage of the large number of census and household survey datasets available through the IPUMS-I and the DHS websites, we document that the elderly live in a wide variety of living arrangements. While it is most common for the elderly to live with prime-aged adults and children in all countries, older people in East Africa are more likely to live alone or in skip-generation households than the elderly in other parts of sub-Saharan Africa. A more detailed analysis of the characteristics of the elderly living in skip-generation households shows that older women and, to a lesser degree, older men are less likely to be disabled, but tend to live in rural areas with worse access to water and electricity. We also find that older women living in skip-generation households in countries with higher AIDS mortality rates are less likely to be disabled than women in countries with lower AIDS mortality rates. These patterns suggest a positive selection of older adults into caregiving roles. This result helps explain the results typically found in studies trying to examine the impact of caregiving on the elderly, which often find no or very little negative consequences of caregiving on the health status of the elderly. It seems like the elderly who choose to take on caregiving responsibilities for young children are healthier than the average older person.

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Table 1. Number of men and women aged 60 and over in IPUMS-I censuses

Country	Year	Number of women aged 60+	Percentage of Population	Number of men aged 60+	Percentage of Population
Ghana	2000	55,766	5.9%	56,082	6.0%
Guinea	1983	13,493	5.8%	15,021	6.7%
Guinea	1996	19,043	5.1%	19,637	5.5%
Kenya	1989	22,509	4.2%	21,617	4.1%
Kenya	1999	30,942	4.4%	27,359	4.0%
Malawi	1987	20,930	5.1%	18,910	4.9%
Malawi	1998	25,137	5.0%	22,441	4.6%
Malawi	2008	34,436	5.1%	27,921	4.3%
Mali	1987	18,794	4.7%	19,182	5.0%
Mali	1998	21,547	4.3%	24,050	4.9%
Rwanda	1991	17,275	4.6%	15,539	4.3%
Rwanda	2002	18,311	4.2%	13,269	3.4%
Senegal	1988	15,162	4.2%	16,670	4.9%
Senegal	2002	20,999	4.2%	22,541	4.6%
Sierra Leone	2004	12,208	4.8%	11,914	5.0%
South Africa	1996	138,354	7.6%	87,759	5.4%
South Africa	2001	156,773	8.2%	93,920	5.6%
South Africa	2007	42,495	8.5%	26,383	5.9%
Sudan	2008	83,198	3.1%	111,825	3.9%
Tanzania	1988	51,793	4.4%	55,557	5.0%
Tanzania	2002	94,172	4.9%	86,804	4.9%
Uganda	1991	30,526	3.9%	31,791	4.3%
Uganda	2002	48,805	3.9%	51,377	4.2%

Table 2. Number of men and women aged 60 and over in DHS surveys

Country	Year	Number of women aged 60+	Number of men aged 60+	Country	Year	Number of women aged 60+	Number of men aged 60+
Benin	1996	725	786	Mali	1995	876	1,421
Benin	2001	713	783	Mali	2001	1,129	2,001
Benin	2006	1,823	2,007	Mali	2006	1,207	2,183
BurkinaFaso	1998	680	951	Mozambiq	1997	989	1,062
BurkinaFaso	2003	1,409	1,785	Mozambiq	2003	1,629	1,440
CAR	1994	612	576	Namibia	1992	1,029	823
Cameroon	1991	426	366	Namibia	2000	1,121	883
Cameroon	1998	737	693	Namibia	2006	1,661	1,114
Cameroon	2004	1,424	1,289	Niger	1992	605	724
Chad	1996	602	723	Niger	1998	609	872
Chad	2004	450	563	Niger	2006	739	1,323
Comoros	1996	463	474	Nigeria	1990	900	1,495
Congo	2005	670	622	Nigeria	1999	642	974
CongoDR	2007	899	946	Nigeria	2003	814	1,065
CotedIvoire	1994	681	811	Nigeria	2008	3,505	4,626
CotedIvoire	1998	215	234	Rwanda	1992	721	714
Ethiopia	2000	1,533	1,623	Rwanda	2000	1,001	792
Ethiopia	2005	1,342	1,767	Rwanda	2005	1,177	783
Gabon	2000	1,509	1,280	SaoTomeF	2008	456	447
Ghana	1993	537	534	Senegal	1992	868	901
Ghana	1998	710	678	Senegal	1997	1,390	1,385
Ghana	2003	900	888	Senegal	2005	1,974	1,936
Ghana	2008	1,615	1,483	SierraLeot	2008	1,140	1,516
Guinea	1999	704	1,039	SouthAfric	1998	2,726	1,649
Guinea	2005	934	1,370	Swaziland	2006	739	469
Kenya	1993	988	954	Tanzania	1991	1,062	1,425
Kenya	1998	918	926	Tanzania	1996	976	1,237
Kenya	2003	796	811	Tanzania	1999	441	541
Kenya	2008	1,066	944	Tanzania	2004	1,318	1,296
Lesotho	2004	2,010	1,298	Togo	1998	1,281	1,200
Lesotho	2009	2,208	1,396	Uganda	1995	637	688
Liberia	2007	679	737	Uganda	2000	660	660
Madagascar	1992	620	654	Uganda	2006	947	865
Madagascar	1997	757	719	Zambia	1992	612	771
Madagascar	2003	867	810	Zambia	1996	773	980
Madagascar	2008	1,701	1,754	Zambia	2001	839	869
Malawi	1992	617	611	Zambia	2007	817	794
Malawi	2000	1,537	1,311	Zimbabwe	1994	843	836
Malawi	2004	1,628	1,421	Zimbabwe	1999	885	809
				Zimbabwe	2005	1,369	1,163

Table 3. Living arrangements of women aged 60 and over, IPUMS countries

Region	Country	Year	Spouse and					No spouse and		
			Alone	Spouse only	0-14, 20-59	0-14 only	20-59 only	0-14, 20-59	0-14 only	20-59 only
Eastern	mean		12%	5%	11%	7%	4%	34%	14%	9%
	Kenya	1989	16%	5%	12%	4%	4%	38%	9%	9%
	Kenya	1999	15%	5%	11%	4%	4%	35%	11%	11%
	Malawi	1987	11%	8%	10%	10%	2%	31%	17%	6%
	Malawi	1998	11%	9%	12%	10%	4%	27%	16%	7%
	Malawi	2008	13%	8%	11%	9%	4%	26%	15%	8%
	Rwanda	1991	10%	4%	17%	8%	6%	25%	16%	9%
	Rwanda	2002	10%	3%	12%	7%	4%	29%	18%	10%
	Tanzania	1988	8%	5%	12%	5%	3%	44%	10%	8%
	Tanzania	2002	9%	5%	11%	5%	3%	42%	11%	9%
	Uganda	1991	11%	5%	10%	5%	3%	40%	13%	10%
	Uganda	2002	12%	5%	10%	6%	3%	35%	16%	8%
Western	mean		5%	2%	16%	2%	3%	58%	5%	7%
	Ghana	2000	6%	1%	14%	2%	2%	52%	10%	10%
	Guinea	1983	14%	3%	18%	3%	5%	45%	3%	7%
	Guinea	1996	4%	2%	21%	2%	3%	56%	4%	6%
	Mali	1987	6%	3%	10%	3%	4%	57%	4%	9%
	Mali	1998	5%	4%	13%	4%	6%	52%	4%	7%
	Senegal	1988	2%	1%	17%	1%	1%	70%	2%	4%
	Senegal	2002	1%	0%	21%	1%	2%	69%	1%	5%
	Sierra Leone	2004	3%	1%	11%	2%	2%	63%	9%	7%
Southern	mean		11%	9%	10%	2%	5%	38%	7%	14%
	South Africa	1996	13%	8%	10%	2%	5%	36%	7%	13%
	South Africa	2001	11%	9%	10%	2%	5%	39%	7%	14%
	South Africa	2007	9%	10%	10%	2%	6%	37%	7%	16%
Others	Sudan	2008	7%	3%	13%	2%	8%	42%	6%	16%

Source: Census data via IPUMS-International

Table 4. Living arrangements of men aged 60 and over, IPUMS countries

Region	Country	Year	Spouse and					No spouse and		
			Alone	Spouse only	0-14, 20-59	0-14 only	20-59 only	0-14, 20-59	0-14 only	20-59 only
Eastern	mean		9%	10%	46%	7%	13%	10%	3%	4%
	Kenya	1989	10%	9%	48%	4%	12%	11%	2%	4%
	Kenya	1999	9%	9%	45%	4%	14%	12%	2%	5%
	Malawi	1987	9%	16%	44%	11%	13%	7%	2%	3%
	Malawi	1998	8%	15%	43%	11%	15%	7%	2%	3%
	Malawi	2008	7%	14%	42%	11%	15%	8%	2%	3%
	Rwanda	1991	4%	7%	56%	10%	13%	6%	2%	2%
	Rwanda	2002	9%	6%	46%	9%	12%	9%	3%	3%
	Tanzania	1988	8%	9%	47%	5%	11%	14%	3%	4%
	Tanzania	2002	8%	10%	46%	5%	13%	14%	3%	4%
	Uganda	1991	13%	9%	43%	5%	10%	13%	3%	5%
	Uganda	2002	12%	9%	45%	6%	10%	11%	4%	4%
Western	mean		5%	4%	58%	2%	10%	16%	1%	3%
	Ghana	2000	7%	2%	36%	2%	6%	33%	5%	7%
	Guinea	1983	16%	6%	52%	2%	13%	10%	1%	2%
	Guinea	1996	2%	4%	64%	2%	10%	15%	1%	3%
	Mali	1987	2%	7%	49%	3%	14%	21%	1%	4%
	Mali	1998	2%	8%	58%	3%	17%	9%	1%	3%
	Senegal	1988	2%	2%	74%	1%	6%	14%	0%	2%
	Senegal	2002	1%	1%	75%	1%	6%	14%	0%	2%
	Sierra Leone	2004	3%	3%	59%	3%	9%	17%	2%	5%
Southern	mean		11%	19%	30%	3%	18%	12%	1%	7%
	South Africa	1996	13%	16%	28%	3%	15%	13%	2%	8%
	South Africa	2001	10%	19%	32%	3%	18%	12%	1%	7%
	South Africa	2007	10%	21%	31%	3%	20%	10%	1%	7%
Others	Sudan	2008	3%	5%	50%	2%	21%	13%	1%	5%

Source: Census data via IPUMS-International

Table 5. Living arrangements of women aged 60 and over, DHS countries

Region	Country	Year	Spouse and			No spouse and				
			Alone	Spouse only	0-14, 20-59	0-14 only	20-59 only	0-14, 20-59	0-14 only	20-59 only
Eastern	mean		11%	6%	11%	7%	4%	34%	14%	8%
	Comoros	1996	2%	2%	9%	3%	3%	61%	7%	10%
	Ethiopia	2000	7%	3%	11%	6%	3%	39%	13%	12%
	Ethiopia	2005	9%	3%	11%	8%	3%	38%	13%	9%
	Kenya	1993	17%	7%	11%	5%	4%	28%	13%	8%
	Kenya	1998	23%	10%	10%	6%	4%	23%	12%	8%
	Kenya	2003	16%	8%	9%	5%	5%	31%	11%	10%
	Kenya	2008	14%	7%	9%	6%	6%	27%	14%	8%
	Madagascar	1992	9%	6%	15%	6%	5%	35%	10%	10%
	Madagascar	1997	11%	6%	14%	6%	5%	35%	12%	9%
	Madagascar	2003	13%	6%	13%	6%	4%	30%	14%	11%
	Madagascar	2008	12%	7%	12%	7%	6%	32%	12%	9%
	Malawi	1992	11%	9%	11%	10%	4%	29%	14%	6%
	Malawi	2000	13%	8%	10%	9%	3%	29%	18%	6%
	Malawi	2004	13%	9%	7%	13%	3%	26%	21%	4%
	Mozambique	1997	16%	8%	13%	5%	4%	33%	10%	8%
	Mozambique	2003	15%	9%	9%	6%	3%	34%	12%	7%
	Rwanda	1992	5%	5%	18%	10%	6%	26%	17%	8%
	Rwanda	2000	8%	4%	8%	9%	4%	26%	26%	7%
	Rwanda	2005	9%	3%	10%	7%	5%	28%	20%	13%
	Tanzania	1991	7%	5%	16%	5%	3%	42%	7%	9%
	Tanzania	1996	10%	7%	12%	5%	3%	40%	9%	8%
	Tanzania	1999	7%	4%	10%	5%	2%	52%	8%	5%
	Tanzania	2004	10%	5%	14%	5%	4%	39%	10%	9%
	Uganda	1995	11%	5%	9%	8%	2%	32%	21%	6%
	Uganda	2000	13%	8%	10%	8%	2%	28%	22%	5%
Uganda	2006	11%	4%	9%	7%	1%	36%	21%	6%	
Zambia	1992	11%	10%	13%	6%	3%	37%	8%	8%	
Zambia	1996	10%	7%	13%	9%	3%	38%	10%	7%	
Zambia	2001	11%	7%	13%	7%	3%	36%	12%	7%	
Zambia	2007	14%	7%	9%	10%	3%	30%	15%	7%	
Western	mean		8%	4%	17%	4%	3%	45%	8%	6%
	Benin	1996	9%	4%	18%	4%	3%	44%	8%	6%
	Benin	2001	11%	4%	14%	3%	3%	40%	11%	8%
	Benin	2006	14%	4%	12%	5%	3%	37%	12%	8%
	BurkinaFaso	1998	2%	4%	31%	6%	4%	44%	3%	2%
	BurkinaFaso	2003	4%	4%	24%	6%	6%	45%	3%	4%
	CotedIvoire	1994	5%	2%	18%	1%	2%	61%	4%	5%
	CotedIvoire	1998	2%	1%	19%	2%	2%	59%	3%	7%
	Ghana	1993	25%	3%	7%	5%	2%	25%	23%	6%
	Ghana	1998	22%	3%	8%	4%	2%	29%	18%	9%
	Ghana	2003	15%	3%	10%	4%	3%	36%	14%	9%
	Ghana	2008	15%	5%	8%	4%	3%	32%	12%	14%
	Guinea	1999	3%	2%	25%	4%	3%	52%	5%	4%
	Guinea	2005	6%	3%	24%	4%	4%	44%	7%	5%
	Liberia	2007	3%	3%	14%	5%	2%	57%	9%	6%
	Mali	1995	6%	9%	17%	5%	6%	38%	8%	7%
Mali	2001	9%	13%	15%	7%	7%	30%	8%	6%	
Mali	2006	6%	9%	17%	6%	6%	37%	7%	5%	

Table 5. Living arrangements of women aged 60 and over, DHS countries (continued)

Region	Country	Year	Spouse and					No spouse and		
			Alone	Spouse only	0-14, 20-59	0-14 only	20-59 only	0-14, 20-59	0-14 only	20-59 only
Western	Niger	1992	7%	3%	21%	5%	2%	51%	6%	3%
	Niger	1998	6%	3%	19%	8%	2%	45%	10%	4%
	Niger	2006	4%	3%	22%	8%	3%	45%	10%	3%
	Nigeria	1990	10%	4%	20%	5%	6%	34%	9%	8%
	Nigeria	1999	10%	4%	13%	4%	5%	38%	7%	12%
	Nigeria	2003	10%	4%	13%	3%	4%	43%	7%	9%
	Nigeria	2008	16%	6%	12%	5%	6%	28%	10%	12%
	Senegal	1992	1%	1%	18%	2%	1%	69%	2%	5%
	Senegal	1997	1%	0%	23%	1%	1%	68%	2%	3%
	Senegal	2005	1%	1%	21%	1%	1%	70%	2%	4%
	Sierra Leone	2008	2%	2%	16%	5%	2%	59%	8%	5%
Togo	1998	8%	2%	15%	4%	2%	47%	10%	7%	
Central	mean		13%	6%	12%	3%	4%	42%	9%	9%
	Central African Republic	1994	14%	8%	13%	3%	5%	37%	10%	9%
	Cameroon	1991	12%	4%	10%	3%	6%	47%	7%	9%
	Cameroon	1998	7%	4%	13%	2%	4%	50%	6%	10%
	Cameroon	2004	13%	4%	12%	2%	2%	43%	9%	9%
	Chad	1996	17%	4%	7%	2%	2%	45%	13%	7%
	Chad	2004	10%	5%	12%	3%	2%	45%	13%	5%
	Congo	2005	8%	4%	15%	2%	2%	50%	4%	9%
	Democratic Rep. of Congo	2007	12%	6%	14%	3%	6%	39%	9%	9%
	Gabon	2000	9%	9%	13%	3%	6%	38%	3%	11%
Sao Tome Principe	2008	27%	8%	7%	4%	5%	22%	12%	10%	
Southern	mean		6%	4%	14%	5%	3%	43%	13%	9%
	Lesotho	2004	9%	2%	11%	5%	3%	41%	13%	11%
	Lesotho	2009	8%	3%	11%	4%	3%	42%	12%	13%
	Namibia	1992	3%	4%	20%	4%	2%	48%	9%	6%
	Namibia	2000	4%	4%	18%	4%	2%	45%	15%	6%
	Namibia	2006	6%	4%	15%	4%	2%	47%	9%	9%
	South Africa	1998	8%	7%	10%	4%	4%	40%	12%	12%
	Swaziland	2006	6%	3%	11%	4%	2%	53%	13%	8%
	Zimbabwe	1994	4%	5%	16%	6%	3%	42%	10%	8%
	Zimbabwe	1999	8%	6%	14%	6%	3%	37%	15%	7%
Zimbabwe	2005	6%	3%	13%	9%	2%	38%	18%	6%	

Source: DHS data

Table 6. Living arrangements of men aged 60 and over, DHS countries

Region	Country	Year	Spouse and				No spouse and			
			Alone	Spouse only	0-14, 20-59	0-14 only	20-59 only	0-14, 20-59	0-14 only	20-59 only
Eastern	mean		6%	11%	51%	7%	14%	9%	2%	3%
	Comoros	1996	1%	5%	55%	3%	14%	18%	1%	4%
	Ethiopia	2000	1%	5%	62%	6%	12%	11%	1%	2%
	Ethiopia	2005	2%	5%	62%	6%	13%	9%	1%	2%
	Kenya	1993	9%	11%	49%	5%	14%	7%	2%	3%
	Kenya	1998	9%	18%	45%	6%	19%	4%	1%	4%
	Kenya	2003	9%	13%	47%	5%	15%	7%	2%	3%
	Kenya	2008	7%	15%	44%	8%	21%	5%	2%	3%
	Madagascar	1992	3%	9%	49%	6%	12%	17%	3%	2%
	Madagascar	1997	4%	10%	52%	7%	14%	9%	2%	5%
	Madagascar	2003	7%	11%	49%	6%	13%	12%	2%	3%
	Madagascar	2008	8%	11%	44%	7%	16%	11%	3%	3%
	Malawi	1992	7%	14%	47%	10%	14%	6%	2%	3%
	Malawi	2000	8%	15%	47%	11%	14%	6%	1%	2%
	Malawi	2004	9%	15%	45%	15%	12%	5%	1%	1%
	Mozambique	1997	10%	17%	47%	4%	18%	9%	2%	2%
	Mozambique	2003	6%	17%	53%	7%	17%	5%	1%	2%
	Rwanda	1992	2%	5%	56%	9%	10%	9%	3%	3%
	Rwanda	2000	4%	8%	50%	11%	14%	6%	4%	2%
	Rwanda	2005	5%	7%	51%	11%	13%	6%	2%	4%
	Tanzania	1991	5%	9%	57%	4%	12%	12%	1%	3%
	Tanzania	1996	6%	12%	54%	4%	14%	8%	2%	3%
	Tanzania	1999	7%	9%	56%	5%	11%	11%	1%	3%
	Tanzania	2004	6%	11%	54%	5%	14%	10%	1%	2%
	Uganda	1995	11%	10%	47%	8%	10%	9%	4%	4%
	Uganda	2000	12%	12%	48%	8%	10%	7%	3%	3%
	Uganda	2006	12%	7%	52%	9%	8%	9%	3%	2%
	Zambia	1992	4%	14%	56%	4%	13%	11%	0%	3%
	Zambia	1996	6%	13%	54%	7%	15%	8%	1%	2%
Zambia	2001	5%	10%	58%	7%	12%	7%	2%	1%	
Zambia	2007	6%	14%	48%	10%	15%	7%	2%	2%	
Western	mean		6%	7%	63%	3%	11%	8%	2%	2%
	Benin	1996	7%	6%	57%	4%	8%	12%	3%	2%
	Benin	2001	8%	6%	60%	3%	8%	10%	2%	3%
	Benin	2006	8%	8%	58%	4%	12%	7%	1%	2%
	BurkinaFaso	1998	2%	5%	74%	4%	8%	6%	1%	1%
	BurkinaFaso	2003	4%	6%	69%	4%	11%	5%	1%	1%
	CotedIvoire	1994	5%	4%	63%	1%	6%	18%	1%	3%
	CotedIvoire	1998	5%	3%	64%	2%	7%	16%	2%	2%
	Ghana	1993	20%	9%	44%	5%	13%	6%	4%	3%
	Ghana	1998	19%	7%	45%	5%	10%	8%	2%	5%
	Ghana	2003	14%	6%	51%	4%	11%	8%	3%	3%
	Ghana	2008	14%	11%	41%	5%	16%	6%	3%	6%
	Guinea	1999	2%	4%	74%	3%	9%	8%	1%	1%
	Guinea	2005	1%	5%	73%	3%	10%	8%	1%	1%
	Liberia	2007	8%	7%	57%	5%	9%	14%	2%	3%
	Mali	1995	4%	13%	61%	4%	18%	4%	1%	1%
Mali	2001	5%	15%	59%	4%	18%	2%	1%	1%	
Mali	2006	3%	10%	65%	4%	16%	4%	1%	1%	

Table 6. Living arrangements of men aged 60 and over, DHS countries (continued)

Region	Country	Year	Alone	Spouse only	Spouse and			No spouse and		
					0-14, 20-59	0-14 only	20-59 only	0-14, 20-59	0-14 only	20-59 only
Western	Niger	1992	1%	5%	76%	4%	7%	6%	1%	1%
	Niger	1998	1%	6%	73%	6%	9%	6%	1%	0%
	Niger	2006	2%	6%	73%	5%	10%	5%	1%	0%
	Nigeria	1990	5%	9%	62%	3%	16%	5%	2%	3%
	Nigeria	1999	3%	8%	62%	3%	17%	5%	2%	3%
	Nigeria	2003	5%	9%	58%	2%	20%	5%	1%	2%
	Nigeria	2008	8%	11%	53%	3%	20%	4%	2%	3%
	Senegal	1992	1%	2%	76%	2%	4%	14%	0%	1%
	Senegal	1997	1%	1%	79%	1%	5%	11%	1%	1%
	Senegal	2005	1%	2%	75%	1%	5%	16%	0%	1%
	SierraLeone	2008	1%	4%	66%	4%	7%	15%	2%	3%
	Togo	1998	7%	5%	59%	4%	8%	13%	2%	4%
Central	mean		10%	11%	50%	3%	14%	10%	2%	4%
	Central African Republic	1994	8%	17%	43%	3%	18%	12%	2%	4%
	Cameroon	1991	7%	9%	54%	3%	14%	11%	1%	4%
	Cameroon	1998	7%	7%	55%	3%	10%	13%	1%	4%
	Cameroon	2004	8%	10%	57%	2%	13%	8%	2%	3%
	Chad	1996	5%	11%	63%	2%	14%	8%	2%	1%
	Chad	2004	4%	10%	62%	3%	13%	8%	1%	1%
	Congo	2005	6%	8%	56%	3%	13%	13%	1%	3%
	Democratic Rep. of Congo	2007	5%	9%	55%	3%	15%	11%	1%	3%
	Gabon	2000	11%	14%	33%	3%	14%	14%	2%	8%
SaoTomePrincipe	2008	36%	13%	23%	5%	13%	3%	3%	3%	
Southern	mean		7%	8%	47%	6%	10%	14%	2%	5%
	Lesotho	2004	9%	7%	42%	7%	15%	14%	3%	5%
	Lesotho	2009	8%	6%	42%	7%	13%	13%	4%	7%
	Namibia	1992	4%	5%	47%	4%	7%	21%	2%	9%
	Namibia	2000	3%	8%	49%	5%	8%	17%	3%	7%
	Namibia	2006	7%	10%	47%	6%	8%	16%	1%	6%
	SouthAfrica	1998	7%	17%	35%	6%	17%	14%	1%	5%
	Swaziland	2006	9%	8%	50%	6%	9%	15%	2%	3%
	Zimbabwe	1994	6%	7%	57%	6%	8%	11%	2%	4%
	Zimbabwe	1999	8%	11%	52%	7%	10%	8%	2%	4%
	Zimbabwe	2005	6%	6%	53%	10%	8%	11%	2%	4%

Source: DHS data

Table 7. Percentage of elderly men and women living with 0-14 year-olds, with and without prime-age adults

Region	Country	Year	Age 60-69				Age 70-79				Age 80+			
			Living with 0-14 year-olds		Living with 0-14 year-olds but no 20-59 year-olds		Living with 0-14 year-olds		Living with 0-14 year-olds but no 20-59 year-olds		Living with 0-14 year-olds		Living with 0-14 year-olds but no 20-59 year-olds	
			M	F	M	F	M	F	M	F	M	F	M	F
Eastern	mean		69.9%	68.0%	7.5%	22.3%	63.6%	63.8%	14.1%	20.0%	58.9%	61.2%	14.6%	16.3%
	Kenya	1989	70.5%	65.1%	4.9%	14.8%	64.3%	60.0%	8.6%	12.2%	60.3%	59.2%	8.6%	9.2%
	Kenya	1999	67.1%	63.0%	5.2%	16.5%	62.2%	59.6%	9.8%	14.9%	56.2%	54.4%	9.0%	10.1%
	Malawi	1987	67.8%	70.4%	10.0%	30.0%	61.3%	66.8%	21.0%	25.2%	55.5%	65.3%	20.6%	22.6%
	Malawi	1998	67.3%	67.4%	9.3%	28.2%	59.3%	63.9%	19.2%	26.1%	53.8%	60.9%	20.1%	21.9%
	Malawi	2008	68.1%	64.7%	9.5%	27.4%	59.3%	58.7%	19.8%	22.9%	53.0%	55.9%	19.7%	18.5%
	Rwanda	1991	77.7%	69.0%	9.6%	24.0%	69.1%	61.7%	15.5%	26.0%	61.5%	55.8%	17.4%	23.2%
	Rwanda	2002	70.1%	68.0%	9.7%	24.7%	65.3%	62.6%	15.8%	27.0%	61.4%	57.8%	16.6%	22.3%
	Tanzania	1988	72.9%	72.3%	5.3%	16.6%	68.1%	70.0%	10.5%	13.5%	64.6%	69.7%	12.2%	12.1%
	Tanzania	2002	70.2%	69.7%	5.4%	18.1%	65.5%	68.4%	10.7%	14.6%	61.8%	67.0%	11.8%	11.6%
	Uganda	1991	67.6%	69.1%	6.2%	19.2%	62.7%	65.3%	10.3%	16.3%	58.1%	63.0%	11.9%	12.8%
Uganda	2002	69.6%	69.1%	7.8%	25.6%	62.7%	64.9%	13.6%	21.6%	61.3%	64.0%	13.2%	14.8%	
Western	mean		80.8%	79.8%	2.5%	7.7%	75.4%	80.7%	4.8%	6.2%	72.3%	81.3%	5.6%	4.9%
	Ghana	2000	74.5%	77.4%	5.9%	13.1%	74.4%	76.3%	8.2%	12.2%	79.6%	77.6%	7.3%	8.9%
	Guinea	1983	68.3%	67.7%	1.9%	7.0%	62.0%	69.5%	3.8%	5.2%	58.1%	71.1%	4.4%	2.9%
	Guinea	1996	85.4%	82.4%	2.2%	7.9%	78.6%	83.3%	4.0%	5.6%	75.9%	83.8%	4.5%	3.6%
	Mali	1987	76.9%	71.7%	3.1%	8.7%	63.7%	73.7%	6.5%	6.3%	57.1%	75.8%	8.0%	4.6%
	Mali	1998	78.4%	71.5%	2.5%	7.9%	64.8%	75.2%	5.8%	5.6%	55.1%	78.1%	8.0%	3.9%
	Senegal	1988	90.3%	90.8%	1.1%	3.5%	88.7%	90.9%	2.6%	2.7%	85.9%	89.3%	3.8%	3.8%
	Senegal	2002	90.9%	91.4%	0.7%	2.1%	90.8%	92.0%	1.4%	1.7%	89.1%	91.2%	1.5%	1.0%
	SierraLeone	2004	81.5%	85.8%	2.9%	11.6%	80.6%	84.8%	5.8%	10.8%	77.6%	83.8%	7.5%	10.3%
Southern	mean		47.8%	59.0%	4.4%	9.9%	48.2%	56.2%	6.2%	8.7%	47.5%	52.7%	6.3%	6.6%
	SouthAfrica	1996	49.2%	60.6%	4.6%	10.1%	49.9%	55.9%	6.5%	8.3%	47.4%	49.4%	6.2%	6.4%
	SouthAfrica	2001	48.8%	60.0%	4.3%	9.9%	48.7%	57.0%	6.1%	8.7%	49.0%	53.6%	6.2%	6.5%
	SouthAfrica	2007	45.4%	56.5%	4.3%	9.8%	46.0%	55.7%	6.0%	9.0%	46.1%	55.1%	6.5%	6.9%
Others	Sudan	2008	69.3%	62.8%	2.0%	8.1%	63.2%	63.2%	5.1%	8.6%	61.6%	62.7%	6.3%	7.8%

Source: Census data via IPUMS-International

Table 8. Living arrangements of persons aged 60 and over in Africa DHS surveys

Region	Country	Year	Number age 60+ in DHS	Mean household size	Percent living with			
					Alone	0-14 year-old	20-59- year-old	0-14 but not 20- 59
Eastern	mean			5.1	8.8	67.6	65.9	15.3
	Comoros	1996	1,092	6.9	1.5	77.8	86.4	6.8
	Ethiopia	2000	3,778	5.1	3.8	75.1	76.1	13.6
	Ethiopia	2005	3,956	5.0	5.1	75.2	74.7	14.0
	Kenya	1993	2,352	4.9	13.1	60.6	61.9	12.9
	Kenya	1998	2,176	4.1	16.2	53.2	57.2	12.5
	Kenya	2003	1,914	4.6	12.5	58.3	62.8	11.7
	Kenya	2008	2,348	4.5	10.6	58.1	61.2	15.6
	Madagascar	1992	1,732	5.7	6.2	71.0	72.5	12.9
	Madagascar	1997	1,849	5.2	7.5	67.9	70.2	13.8
	Madagascar	2003	1,936	4.8	9.9	66.4	66.4	14.4
	Madagascar	2008	3,992	4.7	10.0	63.5	65.4	14.4
	Malawi	1992	1,401	4.4	9.0	64.5	58.5	19.2
	Malawi	2000	3,265	4.5	10.6	65.9	56.5	20.8
	Malawi	2004	3,427	4.2	10.8	66.1	49.8	26.2
	Mozambique	1997	2,615	5.0	12.7	61.6	67.3	10.7
	Mozambique	2003	3,413	4.8	10.2	63.4	63.5	13.6
	Rwanda	1992	1,789	5.0	3.6	73.4	66.8	19.6
	Rwanda	2000	2,084	4.3	6.2	70.1	56.6	26.6
	Rwanda	2005	2,170	4.2	7.6	67.6	62.8	21.7
	Tanzania	1991	2,951	6.5	6.0	72.2	76.8	8.8
	Tanzania	1996	2,644	5.5	7.9	67.7	71.6	10.2
	Tanzania	1999	1,135	6.2	6.9	74.2	75.4	9.6
	Tanzania	2004	3,032	5.9	8.1	69.1	72.1	11.0
	Uganda	1995	1,683	5.1	11.1	69.5	59.5	20.9
	Uganda	2000	1,612	4.9	12.3	67.2	55.9	21.1
	Uganda	2006	2,102	5.3	11.7	72.4	60.1	21.0
	Zambia	1992	1,604	5.9	6.7	67.8	71.8	9.2
	Zambia	1996	1,936	5.6	7.5	70.4	70.6	13.3
	Zambia	2001	1,861	5.4	8.0	70.6	67.8	14.0
	Zambia	2007	1,756	4.7	10.3	66.1	59.2	19.8
Western	mean			7.1	6.8	75.7	78.4	8.7
	Benin	1996	1,687	7.0	8.2	75.5	75.2	9.9
	Benin	2001	1,829	5.9	9.7	72.4	72.4	10.5
	Benin	2006	4,838	5.6	11.2	68.4	69.9	11.3
	BurkinaFaso	1998	1,879	8.1	2.3	83.8	84.4	6.7
	BurkinaFaso	2003	3,720	8.2	3.9	78.5	82.3	7.3

Table 8. Living arrangements of persons aged 60 and over in Africa DHS surveys (continued)

Region	Country	Year	Number age 60+ in DHS	Mean household size	Percent living with			
					Alone	0-14 year-old	20-59- year-old	0-14 but not 20- 59
	CotedIvoire	1994	1,726	10.0	5.0	83.5	87.8	3.6
	CotedIvoire	1998	540	10.6	3.6	83.7	88.1	4.3
	Ghana	1993	1,282	4.2	22.5	59.4	52.4	18.4
	Ghana	1998	1,585	4.2	20.8	59.3	55.6	16.0
	Ghana	2003	1,947	4.8	14.9	65.1	64.2	13.4
	Ghana	2008	3,477	4.3	14.4	55.7	62.1	12.5
	Guinea	1999	2,157	8.0	2.2	86.2	88.6	6.1
	Guinea	2005	2,735	7.3	3.1	82.4	84.6	7.3
	Liberia	2007	1,638	5.9	5.2	81.1	80.5	10.4
	Mali	1995	2,859	6.0	4.7	68.6	76.6	7.9
	Mali	2001	3,839	5.4	6.6	64.1	71.2	9.2
	Mali	2006	4,255	6.2	4.0	71.3	77.5	8.3
	Niger	1992	1,809	8.2	3.6	85.6	84.1	8.0
	Niger	1998	1,882	7.2	3.3	83.8	80.4	11.7
	Niger	2006	2,659	7.1	2.7	84.6	82.5	11.0
	Nigeria	1990	3,324	6.7	7.0	70.4	78.6	8.4
	Nigeria	1999	2,139	6.0	6.3	67.6	78.7	7.7
	Nigeria	2003	2,399	6.1	7.4	66.4	78.7	6.4
	Nigeria	2008	10,103	4.9	11.6	58.4	68.8	9.6
	Senegal	1992	2,085	11.4	1.2	91.6	94.1	2.9
	Senegal	1997	3,121	11.7	1.2	93.0	95.3	2.6
	Senegal	2005	4,573	12.1	1.1	92.3	95.7	1.8
	SierraLeone	2008	3,449	7.0	1.4	87.0	86.7	8.9
	Togo	1998	2,739	7.1	7.4	76.6	76.8	9.9
Central	mean			5.9	11.3	64.8	71.2	8.4
	Central African Republic	1994	1,351	5.7	11.0	61.5	68.3	10.0
	Cameroon	1991	1,011	6.9	9.6	67.8	77.0	7.2
	Cameroon	1998	1,674	7.0	7.4	71.6	79.1	6.7
	Cameroon	2004	3,160	6.0	10.9	67.8	73.1	8.4
	Chad	1996	1,774	6.0	10.5	70.7	73.9	8.9
	Chad	2004	1,313	6.1	7.0	73.6	74.2	10.1
	Congo	2005	1,476	6.6	7.2	72.3	79.8	5.4
	Democratic Rep. of Congo	2007	2,115	5.8	8.8	67.6	75.9	8.5
	Gabon	2000	3,103	6.1	9.9	54.6	67.9	5.3
	SaoTomePrincipe	2008	1,016	3.2	31.2	40.5	43.0	13.2
Southern	mean			6.2	6.1	73.2	73.8	13.0
	Lesotho	2004	3,529	5.0	9.1	68.1	70.0	14.5
	Lesotho	2009	3,841	5.2	8.0	68.0	70.7	14.6
	Namibia	1992	2,262	8.1	3.6	77.9	79.2	10.0
	Namibia	2000	2,339	6.6	3.5	78.6	74.3	15.0
	Namibia	2006	3,037	6.3	6.5	73.5	74.7	11.2

Table 8. Living arrangements of persons aged 60 and over in Africa DHS surveys (continued)

Region	Country	Year	Number age 60+ in DHS	Mean household size	Percent living with			
					Alone	0-14 year-old	20-59- year-old	0-14 but not 20- 59
	SouthAfrica	1998	4,821	4.9	7.9	62.0	67.5	12.8
	Swaziland	2006	1,345	6.5	7.0	77.8	74.2	13.7
	Zimbabwe	1994	1,881	6.1	5.3	74.5	73.8	12.3
	Zimbabwe	1999	1,900	5.2	8.3	69.9	65.3	15.7
	Zimbabwe	2005	2,729	5.3	6.4	77.5	66.9	20.7

Table 9. Characteristics of Elderly Women Living in Skip-Generation Households

region	country	year	disability	t-statistic	rural	t-statistic	water	t-statistic	electricity	t-statistic	years of schooling	t-statistic	children ever born	t-statistic	N	R-squared	mean skip-gen	mean disability
Eastern	Kenya ¹	1989	-0.012	(4.98)**	0.051	(4.45)**			-0.089	(5.99)**	0.002	(-1.02)	0.008	(12.65)**	24161	0.03	0.21	0.18
	Kenya ¹	1999	-0.054	(7.44)**	0.027	(4.01)**			-0.093	(10.89)**	0.001	(-1.18)	0.007	(11.56)**	35718	0.02	0.22	0.07
	Malawi	1987			0.047	(2.90)**	-0.014	(-1.74)			-0.004	(-1.46)	0.014	(16.86)**	24457	0.02	0.37	
	Malawi	1998			0.076	(5.58)**	-0.012	(-1.31)	-0.146	(6.64)**	-0.004	(2.97)**	0.012	(16.41)**	29142	0.02	0.37	
	Malawi	2008	-0.064	(10.17)**	0.044	(3.52)**	-0.01	(-1.1)	-0.108	(6.51)**	-0.009	(9.75)**	0.009	(12.26)**	36944	0.03	0.33	0.17
	Rwanda	1991					-0.02	(2.02)*	-0.178	(4.61)**			0.008	(7.20)**	18701	0.01	0.37	
	Rwanda	2002	0.01	(-1.14)	0.07	(6.16)**	0.001	(-0.09)	-0.139	(6.07)**	-0.01	(3.97)**	0.007	(5.89)**	19243	0.01	0.38	0.18
	Tanzania ¹	1988	-0.074	(15.10)**			0.002	(-0.38)	-0.087	(11.26)**	0.003	(-1.93)	0.006	(15.96)**	66849	0.02	0.22	0.15
	Tanzania	2002	-0.055	(11.70)**	0.04	(14.87)**			-0.083	(18.05)**	0.004	(5.57)**	0.005	(17.36)**	113735	0.02	0.22	0.06
	Uganda	1991	-0.07	(7.09)**	-0.012	(-1.11)	-0.15	(5.33)**	-0.042	(2.25)*	0.019	(10.68)**	0.006	(12.24)**	38072	0.02	0.25	0.04
	Uganda	2002	-0.017	(3.47)**	0.033	(4.21)**			-0.123	(11.46)**	0.008	(9.74)**			57378	0.02	0.31	0.17
Western	Ghana ¹	2000	-0.003	(-0.25)	0.008	(2.11)*	-0.027	(5.63)**	-0.011	(2.97)**	-0.001	(4.43)**	0.001	(-1.24)	68555	0.01	0.17	0.02
	Guinea ¹	1983	-0.016	(5.41)**	-0.031	(3.16)**	-0.009	(-0.86)	-0.034	(2.46)*	-0.003	(-0.68)			15332	0.01	0.09	0.18
	Guinea	1996	-0.005	(-0.68)	-0.007	(-0.97)	-0.009	(-0.85)	-0.048	(4.94)**	0.002	(-0.68)	0.002	(2.54)*	21770	0.01	0.09	0.08
	Mali	1987	-0.011	(-1.74)					-0.042	(4.10)**			0.003	(4.42)**	20919	0.02	0.10	0.09
	Mali	1998	-0.001	(-0.05)	0.004	(-0.78)			-0.06	(8.43)**	0.001	(2.79)**	0.003	(5.00)**	24154	0.02	0.11	0.04
	Senegal	1988	-0.017	(3.08)**			-0.01	(1.96)*	-0.016	(3.64)**	0	(-0.14)			16618	0.01	0.05	0.07
	Senegal	2002	0.005	(-0.84)	-0.016	(4.28)**	-0.009	(2.74)**	-0.028	(7.35)**	0	(-0.49)	0	(-0.03)	22025	0.01	0.03	0.06
	SierraLeone	2004	-0.026	(2.86)**	0.013	(-1.85)	-0.02	(2.58)**	-0.032	(2.40)*	0	(-0.21)	0.004	(4.78)**	15713	0.01	0.16	0.10
Southern	SouthAfrica	1996	0.013	(5.19)**	0.096	(35.82)**	-0.029	(11.46)**	-0.077	(27.99)**	-0.002	(15.87)**	0.003	(11.42)**	135549	0.07	0.15	0.20
	SouthAfrica	2001	0.001	(-0.38)	0.102	(47.37)**	-0.021	(11.01)**	-0.045	(18.08)**	-0.006	(30.52)**			168184	0.06	0.15	0.16
	SouthAfrica	2007	-0.014	(2.46)*	0.081	(17.76)**	-0.052	(9.91)**	-0.036	(6.72)**	0	(-0.77)			45662	0.04	0.15	0.08
Others	Sudan	2008	-0.034	(14.90)**	0.038	(16.34)**			-0.122	(58.54)**				115194	0.04	0.14	0.28	

Notes: additional controls include age, age squared, and living with spouse

¹ disability indicator here refers to employment disability rather than general disability

Table 10. Characteristics of Elderly Men Living in Skip-Generation Households

region	country	year	disability		rural		water		electricity		years of schooling		N	R-squared	mean skip-gen	mean disability
			t-statistic		t-statistic		t-statistic		t-statistic		t-statistic					
Eastern	Kenya ¹	1989	-0.007	(3.44)**	0.049	(6.50)**			-0.036	(3.59)**	0	(-0.31)	24353	0.02	0.11	0.13
	Kenya ¹	1999	-0.023	(2.58)**	0.024	(4.55)**			-0.034	(5.05)**	0	(-0.22)	31056	0.01	0.11	0.05
	Malawi	1987			0.017	(-1.48)	-0.016	(2.29)*			-0.004	(3.96)**	21828	0.05	0.18	
	Malawi	1998			0.014	(-1.4)	-0.001	(-0.14)	-0.025	(-1.48)	-0.003	(4.47)**	25706	0.05	0.19	
	Malawi	2008	-0.021	(3.42)**	0.009	(-0.91)	-0.02	(2.62)**	-0.016	(-1.41)	-0.004	(7.30)**	30224	0.06	0.18	0.16
	Rwanda	1991					-0.01	(-1.13)	-0.089	(2.64)**			17128	0.02	0.20	
	Rwanda	2002	-0.003	(-0.38)	0.05	(4.38)**	-0.009	(-1.03)	-0.084	(3.79)**	-0.001	(-0.93)	13604	0.01	0.21	0.19
	Tanzania ¹	1988	-0.016	(4.00)**			0	(0)	-0.037	(5.66)**	0.001	(2.54)*	69366	0.02	0.12	0.09
	Tanzania	2002	-0.021	(5.34)**	0.023	(10.29)**			-0.022	(5.24)**	0.001	(3.74)**	101216	0.02	0.12	0.07
	Uganda	1991	0	(-0.02)	0.029	(3.68)**	-0.053	(2.16)*	0.032	(-1.96)	0.001	(-1.68)	37229	0.02	0.12	0.05
	Uganda	2002	-0.004	(-1.03)	0.025	(3.81)**			-0.005	(-0.5)	0.001	(-1.78)	58533	0.02	0.14	0.17
Western	Ghana ¹	2000	0.011	(-1.18)	0.007	(2.26)*	-0.016	(4.16)**	-0.012	(3.58)**	0	(-0.7)	67037	0.01	0.10	0.02
	Guinea ¹	1983	-0.007	(-1.51)	0.001	(-0.21)	0.007	(-0.82)	-0.01	(-1.06)	-0.002	(-1.13)	15187	0.01	0.05	0.13
	Guinea	1996	0.008	(-1.46)	-0.004	(-0.83)	-0.005	(-0.75)	-0.018	(2.73)**	0	(-0.52)	23002	0.01	0.05	0.08
	Mali	1987	-0.008	(-1.78)					-0.029	(3.45)**			23226	0.02	0.06	0.12
	Mali	1998	-0.001	(-0.1)	0.01	(2.62)**			-0.038	(6.80)**	0	(2.76)**	27961	0.02	0.07	0.06
	Senegal	1988	-0.004	(-0.78)			-0.007	(-1.74)	-0.004	(-1.1)	0	(-1.72)	18141	0.01	0.03	0.06
	Senegal	2002	0.006	(-1.6)	-0.004	(-1.39)	-0.01	(4.49)**	-0.01	(4.28)**	0.001	(2.22)*	26846	0.01	0.02	0.07
	SierraLeone	2004	-0.007	(-1.02)	-0.002	(-0.31)	-0.012	(2.02)*	0.001	(-0.09)	0	(-1.46)	14520	0.02	0.08	0.11
Southern	SouthAfrica	1996	0.013	(4.99)**	0.056	(21.98)**	-0.023	(9.23)**	-0.043	(16.22)**	-0.001	(15.22)**	90998	0.05	0.09	0.18
	SouthAfrica	2001	0.009	(3.68)**	0.06	(27.27)**	-0.017	(8.43)**	-0.018	(6.89)**	-0.004	(21.60)**	101913	0.04	0.08	0.16
	SouthAfrica	2007	0.008	(-1.63)	0.047	(11.37)**	-0.027	(5.43)**	-0.021	(3.98)**	-0.001	(3.65)**	28775	0.03	0.08	0.12
Others	Sudan	2008	-0.017	(10.98)**	0.018	(11.32)**			-0.053	(36.76)**			148393	0.03	0.07	0.27

Notes: additional controls include age, age squared, and living with spouse

¹ disability indicator here refers to employment disability rather than general disability

Figure 1. Living arrangements of elderly males and females
 Malawi, 2008 census

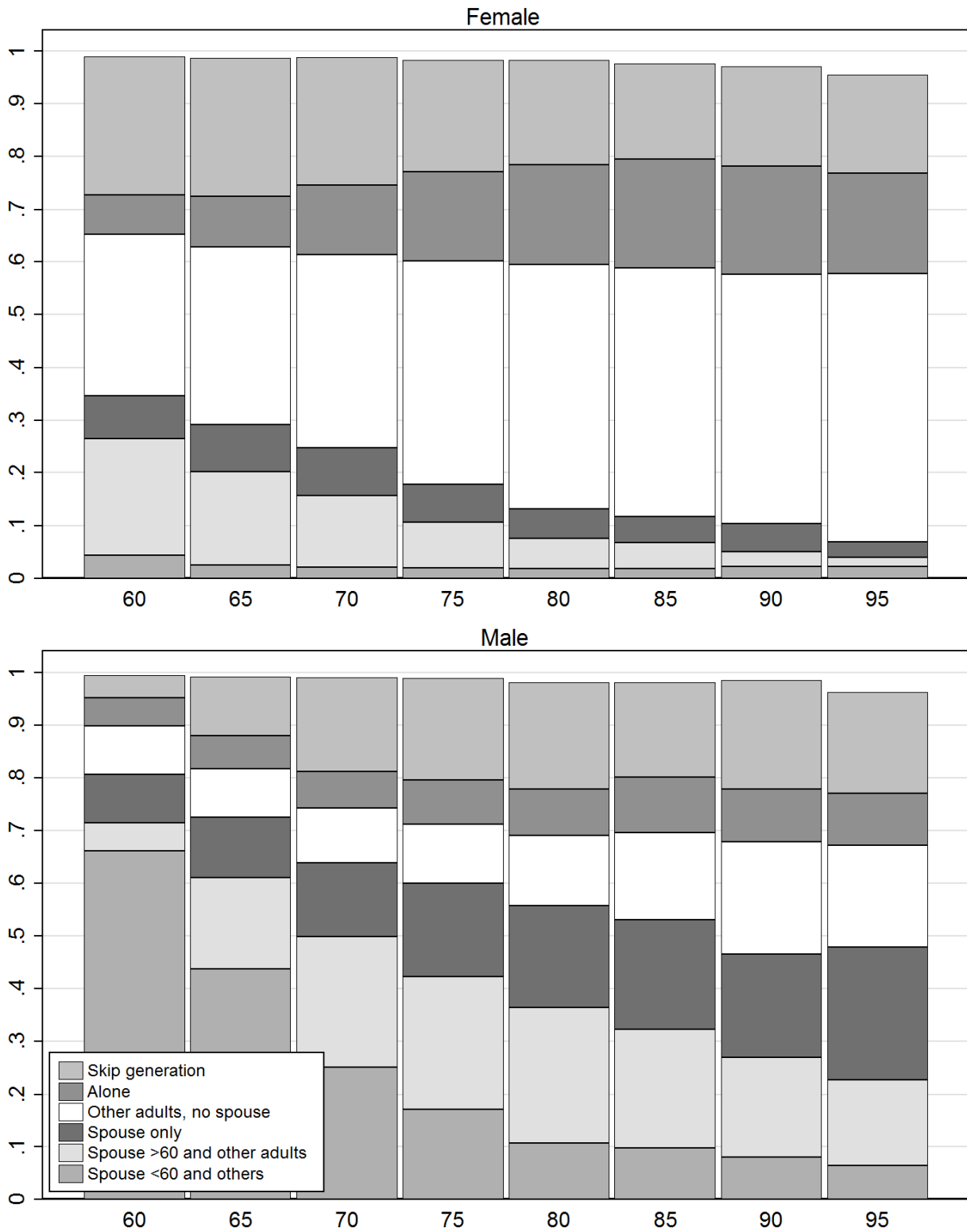


Figure 2. Gender differences in widowhood and living alone by age, Malawi 2008



Figure 3. Spousal age gap, women aged 45-59, Malawi 2008

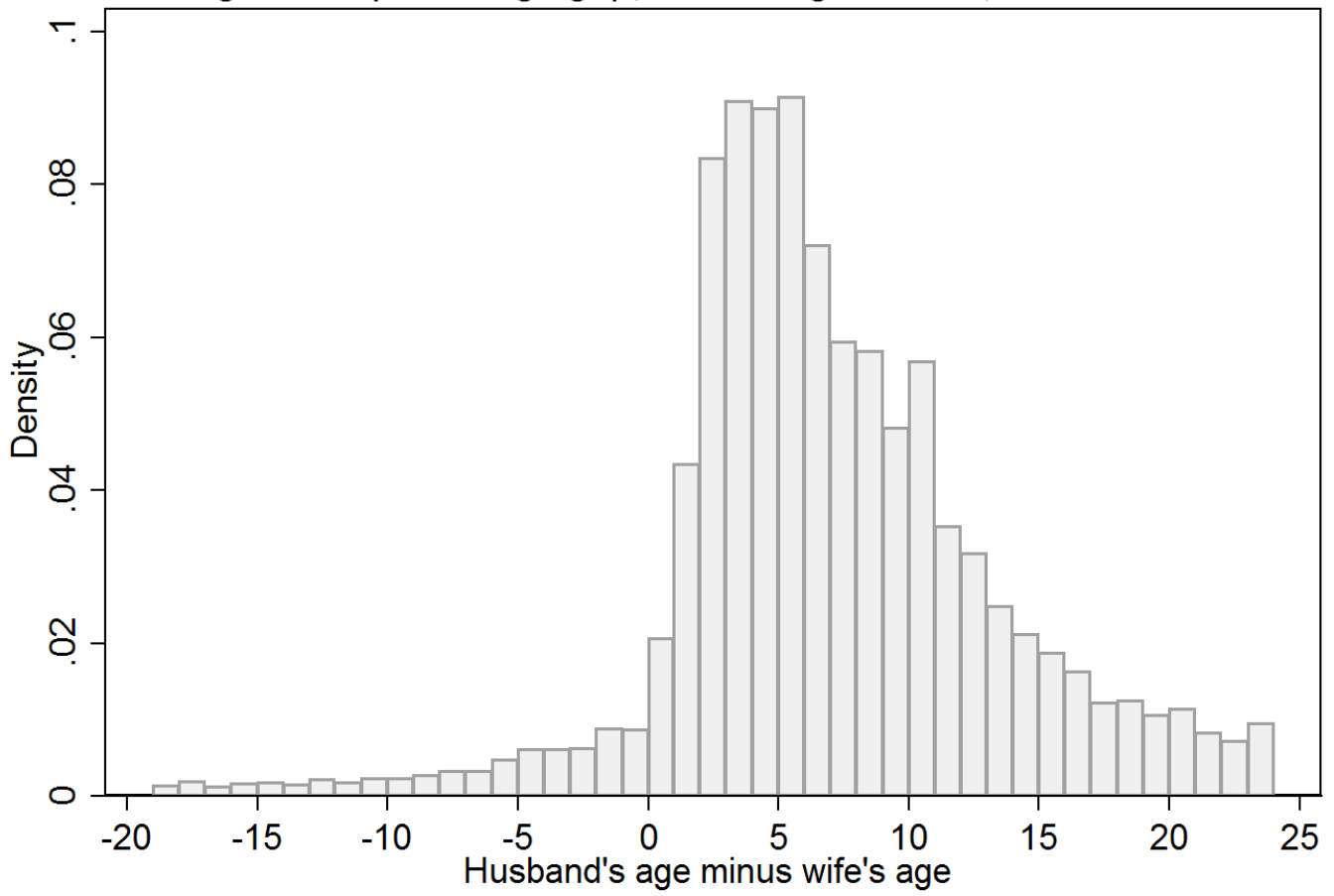


Figure 4. Scatter plot of AIDS death rate and disability coefficient for elderly women

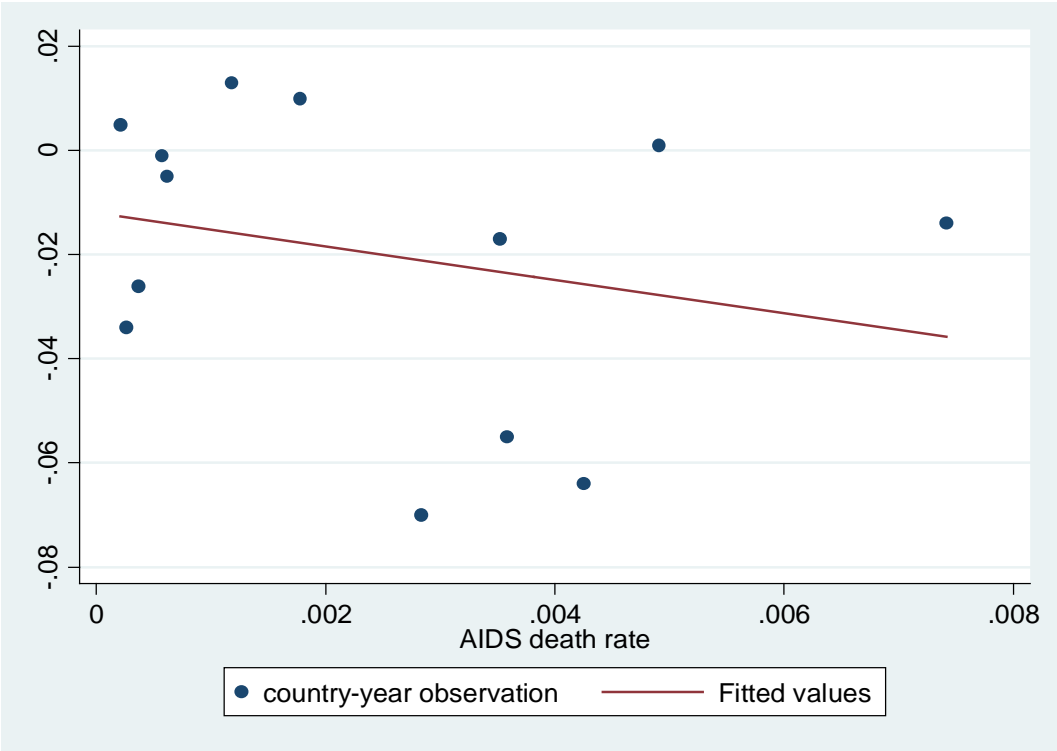


Figure 5. Scatter plot of AIDS death rate and disability coefficients for elderly men

