Population ageing in Ghana and correlates of support availability

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C.J. Mba. Population ageing in Ghana and correlates of support availability. Gerontechnology 2007; 6(2):102-111. With the anticipated rapid increase in the population of the elderly in Ghana, it is necessary and urgent to gain a firm understanding of the demographic, social, and economic characteristics of this group with special needs. **Method** The study presents data on the phenomenon of population ageing in Ghana, using the household rosters of the 1993-2003 Ghana Demographic and Health Surveys, and results of the 1960-2000 national census. The study characterises the living arrangements of the elderly in demographic and socio-economic terms in order to portray the economic and social disadvantages experienced by this group. **Results** The proportion of the elderly to the total population increased from 9% in 1960 to 12% in 2000, while the number rose from 0.6 million to 2.3 million over the same period. There are generally more elderly women than men during the period 1993-2003, as about 52% of the total elderly population are females. The overwhelming majority of the older population has no formal education. Of Ghana's 10 administrative regions, elderly persons are more concentrated in the Ashanti Region than any other region (15% in 1993, 13% in 1998, and 14% in 2003). About 11% of older adults live alone, while women are more likely to live alone than men. Although extended household living is still prevalent, there are great variations in living arrangements by gender. Regression analyses suggest that the probability of solitary living, and hence the need for support and care, is more pronounced among the elderly from the Northern, Upper West and Upper East Regions, rural dwellers, persons without formal education, and those aged 80 years and over. **Conclusion** The prevalence of extended living arrangements of the elderly in Ghana may reflect an attempt to alleviate economic hardships on the one hand, while this may be indicative of a cultural dimension of exchange relationships typical of traditional societies on the other hand.

Keywords: ageing, elderly men/women, population, Ghana

One of the fundamental concerns of sociological studies has long been the understanding of the interaction between social processes and human behaviour. The living arrangements of older persons have been of interest to both gerontologists and other social scientists for a long time[1-5]. Lawton[6] observes that living arrangements both reflect past events, like marital and childbearing behaviour, and shape future outcomes, like quality of life, as people age. These dimensions of living arrangements often determine the composition of households[7-9].

Indeed, living arrangements of older people have long been a topic of research among demographers concerned with population ageing in Europe and North America. In recent decades research on ageing has expanded by including developing countries Partly because they constitute the smallest size in the age structure of Africa's youthful populations, and partly because they usually live with their extended families throughout the older years, elderly persons, and especially their living arrangements, have long been neglected subjects of demographic and sociological enquiry. In particular, very little is known

about living arrangements of the elderly persons in Ghana[10-12].

The centrality of living arrangements in the demography of ageing is partially attributable to the fact that at least rudimentary measures can be readily gleaned from household rosters available from familiar data sources, especially censuses and multi-purpose sample surveys. More importantly, living arrangements, particularly in the developing world, are intimately linked to intrafamily support systems and have major implications for well-being of the elderly. In respect of this measures of living arrangements such as living alone, living with a spouse only, and co-residence with adult children have vital consequences for older persons.

The growing older population in Ghana and across Africa, coupled with limited knowledge about family structure and functioning among African countries, makes this study especially important and timely. Consequently, the present research examines differences in the incidence of living arrangements among the older population of Ghana with a view to contributing to knowledge about differences, if any, in household structures through comparisons of the living arrangements of the older population over the years.

DATA AND METHODS
The data set for this study is derived from the 1993-2003 Ghana Demographic and Health Surveys (GDHS) that are the last three in a series of nationally representative sample surveys conducted under the Demographic and Health Survey programme. The planning and implementation of the 1993-2003 GDHS has been treated elsewhere[13]. Also, the 1960-2000 census results of Ghana[14] has been used in order to illustrate empirically the growing phenomenon of population ageing in the Ghanaian context.
The unit of analysis is the elderly person. Elderly persons are defined as those men

and women aged 60 and over[15]. However, occasional reference is made to the 50-59 age group as that is the most prospective elderly age group. This sentiment is further inspired by the World Health Organization's current work on Developing Integrated Health Care Systems Response to Rapid Population Ageing in Developing Countries[16]. Including persons aged 50-59 years in the analysis will help throw some light on observed levels, patterns and differentials of the characteristics of the elderly population, as they serve as a control group.

Furthermore, analysis distinguishes between various age categories within this broad age span. For analytical convenience, the following definitions often used in the literature are employed in this study: youngest old (or elderly) refers to persons aged 60-64 years; young old refers to persons aged 60-69 years; and oldest old refers to persons aged 80 years and over[7,17,18].

The selected socio-economic and demographic characteristics considered in this study include age, place of residence, level of educational attainment and region of residence. Living arrangements are defined with respect to living alone and living with others (including spouse, children and grandchildren).

Two levels of analysis, namely bivariate and multivariate, are employed in this study. In the bivariate analysis, simple cross-tabulations are used to identify patterns among the study variables, as well as to establish a basis for the subsequent multivariate analysis. A bivariate analysis does not determine the extent to which differences between certain population subgroups are directly related to the elderly persons' living arrangements and the extent to which they affect other intervening variables. This is because independent variables interrelate with each other and the interactions can influence observed

results. Consequently, a multivariate analysis is employed to estimate the net effect of a variable when variation in the other variables is controlled.

Because Ghana, like many African countries, has no comprehensive universal social security and welfare scheme and modernisation makes its threatening inroads, it can be plausibly assumed that the elderly who live alone or those of them who live with only their grandchildren are most in need of assistance and care. On the other hand, those older persons, who co-reside with their adult relatives (including husbands, adult children, sons or daughters-in-law and others aged 20 and over), are those most likely to receive support. Due to data constraints, two indicators of living arrangements (living alone and living with adult relatives) are used for multivariate analysis with a view to predicting their likelihood in the Ghanaian context. Consequently, support availability for the aged is crudely distinguished in living alone and living with adult relatives in this study, for they have no supportive technology. It should, however, be noted that although the elderly who do not co-reside with children are less likely to receive informal support, it would be misleading to assume that in all cases older persons who live alone or apart from grown children are necessarily isolated or particularly disadvantaged in receipt of informal support. This is because the implication of solitary living is very different if a child lives adjacent to or nearby, then if the nearest child lives a considerable distance away.

The second-level analysis uses the multivariate logistic regression technique to predict the likelihood of the elderly to live alone or live with grandchildren, or live with adult relatives. The logistic regression model is used because the dependent variables can be dichotomised, hence, logistic regression is generally the appropriate functional form for the analysis of dichotomous variables[19,20]. Multinomial

logistic regression could have been used since an elderly person could live alone, live with one or more adult children, or in other types of household but it is conceptually clearer to think in terms of dichotomy (yes/no) rather than trying to compare these possibilities[21]. For instance, living alone is treated as a dichotomous variable that is assigned the value 1 if the elderly person lives alone, and 0 if he/she does not live alone.

The ten administrative regions of Ghana constitute the independent variables. Because the Greater Accra Region is where the nation's capital is located, which has a larger concentration of infrastructural facilities and other benefits of socio-economic development, the present study employs the Greater Accra Region as a reference category in the multivariate analysis. Furthermore, the selected background characteristics (demographic and socio-economic) are used as control variables for the study on the basis of their theoretical importance and data availability. Age is critical to demographic analysis, while education and place of residence are indicators of socio-economic development[22,23]. In the ensuing analysis the 60-69 age group is used as the reference category because the greatest proportion of the older population is concentrated in that age group. Additionally, because most of the respondents did not have formal education, no education is used as the reference category, while rural area is used as the reference category because more Ghanaians reside in rural than urban areas.

Living alone and living with an adult relative are the two dependent variables. The independent variables are region of residence, age, education, and type of place of residence. Age is treated as a continuous variable while the remaining independent variables are used as dummy variables. For each of the variables, one category has been chosen as the reference category and is therefore omitted from the

equation. This is the category to which the regression coefficients are compared. The general form of the regression equation is:

$$Y = \alpha + \beta X_i + \ldots + \beta X \qquad [1]$$

where Y = dependent variable; X_i = independent variables; α and β are constants.

In the multiple logistic regression analysis results are given as regression coefficients and odd ratios or, in this context, odds of the living arrangement indicator (and 95% confidence interval), associated with each variable. It should be noted that Wald tests of significance are utilised for individual coefficients and for variable groups[24]. Two multivariate models are estimated for each of the two indicators of living arrangements separately for males and females. The first model uses only variables from the ten regions, while the second model utilises the variables in the first model plus the predictor variables. However, results are shown only for the second of the two models in each case.

RESULTS

Table 1 depicts the percentage distribution of Ghana's elderly population (60 years and over) and those aged 50-59 by sex for the period 1960-2000. As should be expected, there are more people aged 50-54 than in the succeeding age groups since they are much younger and the force of mortality is felt much more in the older than younger ages. This pattern is maintained for both sexes together and each sex separately. What is striking about the table is that the proportion of the aged population in each age group has generally risen over the years. Additionally, both the number and proportion of the elderly to the total population have been consistent for both sexes and for each sex. The proportion of the elderly to the total population increased from 9% in 1960 to 12% in 2000, while the number rose from 0.6 million to 2.3 million over the same period. The increase in the number and proportion of the elderly persons lends itself to a number of explanations. Paramount among these are improvements in life expectancy precipitated by improved

Table 1. Percentage distribution of Ghana's elderly population by gender: 1960-2000[14]. The percentages refer to proportions of the aged population to the total country population

Age in years	Year											
	1960			1970			1984			2000		
	Male	Female	Both	Male	Female	Both	Male	Female	Both	Male	Female	Both
50-54	2.85	2.46	2.65	2.82	2.59	2.70	2.86	2.88	2.87	2.99	3.02	3.01
55-59	1.74	1.46	1.60	1.80	1.53	1.67	1.77	1.70	1.73	1.95	1.81	1.88
60-64	1.87	1.46	1.75	1.77	1.53	1.71	1.78	1.89	1.84	1.90	1.98	1.94
65-69	0.95	0.86	0.91	1.12	1.06	1.10	1.16	1.20	1.18	1.38	1.36	1.37
70-74	0.88	0.80	0.84	0.99	0.94	0.96	1.05	1.04	1.05	1.14	1.24	1.19
75-79	0.48	0.44	0.46	0.51	0.48	0.49	0.60	0.37	0.58	0.79	0.74	0.77
80+	1.02	0.90	0.96	1.09	1.08	1.08	1.17	1.23	1.20	2.01	1.91	1.96
Total	9.79	8.38	9.17	10.10	9.21	9.71	10.39	10.31	10.45	12.16	12.06	12.12
n	332,851	278,795	616,849	425,501	400,583	831,109	630,000	642,576	1,284,940	1,137,858	1,152,296	2,292,144

public health measures, better nutrition and personal hygiene; and declining fertility, which reduces the share of the young children to the total population.

The characteristics of the elderly population derived from the 1993-2003 GDHS are presented in Table 2. The age distribution of the older adults parallels that in Ta-

Table 2. Percent distribution of elderly persons by characteristics in Ghana, 1993-2003[37]

Parameter	Year		
	1993	1998	2003
Region			
Western	8.7	8.7	5.1
Central	14.9	9.8	7.8
Greater Accra	8.4	7.2	10.5
Volta	13.3	12.9	9.5
Eastern	15.1	11.9	10.4
Ashanti	15.2	12.9	14.0
Brong Ahafo	6.7	5.4	9.3
Northern	8.7	9.6	10.6
Upper West	3.3	11.9	12.0
Upper East	5.5	9.6	10.9
Total number of elderly	2,564	3,170	1,947
Age in Years			
60-64	38.0	30.5	31.9
65-69	22.2	22.6	23.1
70-74	19.3	19.2	18.2
75-79	9.2	11.4	12.1
80+	11.4	16.3	14.7
Gender			
Male	50.0	47.6	47.8
Female	50.0	52.4	52.2
Education			
No education	81.9	78.1	77.9
Primary education only	15.7	6.7	6.7
Secondary education or higher	2.4	15.1	15.4
Residence			
Urban	28.8	24.4	32.0
Rural	71.2	75.6	68.0

ble 1 as there are consistently more people at young old age groups in each of the three data sets under study. As should be expected, there are generally more elderly women than men during the period under review as about 52% of the total elderly population are females. This is because in most populations of the world women live longer than men[25]. Furthermore, in Ghana and in many parts of Africa men generally marry women much younger than themselves[26]. A combination of female greater longevity and marriages between older men and younger women results in women dying long after the demise of their spouses.

The overwhelming majority of the older population has no formal education. Close to four in every five elderly persons did not go to school between 1993 and 2003. Similarly, most of these elderly people live in rural areas although rural residence appears to be gradually declining. In Ghana's 10 administrative regions, elderly persons are more concentrated in the Ashanti Region than in any other region (15% in 1993, 13% in 1998, and 14% in 2003). As a major commercial centre, it is a migration destination for persons, including older adults, in search of means of livelihood.

Table 3 presents differentials in living arrangements of the older population in Ghana by sex. The findings suggest that about 11% of older adults live alone, while women are more likely to live alone than men (14 versus 8% in 1993, 14 versus 7% in 1998, and 13 versus 9% in 2003). This result is close to what has been reported in other studies[2,7,27]. Men are more likely to live with spouse than women (14 versus 6% in 1993, 15 versus 6% in 1998, and 13 versus 7% in 2003). This may be partly due to the fact that old-age mortality favours women, men often marry younger women, and the tradition of polygyny, which is particularly pronounced in the northern part of the country. Nevertheless,

evidence from other studies suggests that older persons who live alone score below average on measures of material well-being in many developing countries[1,7,10,28,29]. In addition, the elderly who do not co-reside with children are less likely to receive informal support, especially help with the activities of daily living.

Although extended household living is still prevalent, there are great variations in living arrangements by sex. Women are much more likely than men to live in extended households (that is, living with spouse, children and others, such as grandchildren, sons-in-law, daughters-in-law), plus living with still others, such as distant relatives and non-relatives. This is because from the three data sets it can be argued that about 70% of elderly women live in extended households as opposed to about 41% of older men. On the other hand, roughly 37% of elderly men live in a nuclear household (consisting of spouse and children), compared with about 8% of older women. One reason for this variation by sex is that women tend to live longer than men in most populations, as noted previously, and may therefore have more grandchildren and children-in-law with whom to live. Another possibility is that when the husband dies, a woman may need to move in with extended family for support. Also, grandmothers, rather than grandfathers, may be seen as the more natural choice of individuals to assist in caring for grandchildren.

The logistic regression coefficients and odds ratios predicting the likelihood of elderly to live alone and with a relative showed only few significant relationships. Elderly from the Northern Region are about two times (odds ratio men: 1.55; women: 1.96) as likely as their counterparts from the Greater Accra Region, the reference category, to live alone. Similarly those from the Upper West and Upper East Regions are about three to five times (odds ratio men: 2.49 and 2.76, respectively; women: 3.36 and 4.74, respectively) more likely of solitary living than their counterparts from the Greater Accra Region. The result is consistent with expectation and points to the socio-economic disadvantage of the northern part of the country. The adult children of the elderly persons in these three northern regions might have migrated to Accra and other places in search of better economic opportunities[31].

The propensity to live alone is significantly more pronounced among the young elderly, 60-69 years, than the oldest old, aged 80 years and over (odds ratio man: 0.35; women: 0.51). As increasing frailty is a function of advancing age one should expect the oldest old to be more in need of support and care than their younger

Table 3. Living arrangements of the elderly persons in Ghana, 1993-2003[37]

Living arrangements	1993			1998			2003		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Alone	8.2	14.1	11.0	7.2	14.2	12.2	9.2	13.1	11.4
With spouse only	14.1	6.2	10.3	15.1	6.3	9.2	13.4	7.2	9.9
With spouse & children	36.8	10.2	26.6	34.8	12.3	26.7	36.5	8.2	24.6
With spouse, children & others	21.3	40.1	31.6	22.8	38.0	30.2	21.0	41.2	33.3
With others	19.6	30.4	20.5	19.1	30.2	21.7	19.9	30.3	20.8
Total number of persons	1279	1285	2564	1509	1661	3170	931	1016	1947

counterparts. The probability of solitary living increases with higher levels of educational attainment. The elderly with secondary education or higher are two times more likely to live alone than those without any education (odds ratio of both men and women: 2.26). This is because education empowers an individual with skills and knowledge which enable him to be engaged in formal or other meaningful employment that ultimately provides financial security in old age. With financial security one can afford independent living[15,32].

The strongest significant positive correlation with respect to the probability of solitary living among older persons is found when type of place of residence is examined. The elderly in rural areas are six to seven times (odds ratio men: 5.70; women: 7.38) more likely to live alone than their urban counterparts. Their adult children are likely to move to towns and cities in search of jobs, education and apprenticeship[13,31].

The results seem to indicate that both elderly men and women from the Northern, Upper West and Upper East Regions might be in need of care and support more than the remaining regions. It should, however, be emphasised that although in the logistic regression analysis residents in certain regions demonstrated higher probabilities of living alone, strictly speaking, it does not necessarily follow that older adults in these regions are in greater need of care and support. This is because the 2003 GDHS data provide very little information about the wider kin network. For instance, we do not know whether their adult children live close by; neither do we know whether the elderly men receive remittances from their adult children working elsewhere.

When co-residence with relatives is considered (Model 2), it appears that older persons living in the Ashanti Region are two to five times (odds ratio men: 2.30;

women: 5.12) more likely to live with adult relatives than their counterparts in the Greater Accra Region. The Ashanti Region is Ghana's commercial nerve center and therefore a migration destination for job seekers and persons involved in all kinds of business. These people are likely to be joined by their spouses and children and perhaps other relatives.

As we have seen the findings for men and for women are generally similar, but women show a more significant association with respect to the probability of solitary living and living with adult relatives (Two additional tables, illustrating the foregoing two paragraphs, are available from the author upon request - they could not be included here because of space constraints).

DISCUSSION AND POLICY ISSUES
Ghana and many countries in Africa are beginning to confront a phenomenon that was largely unanticipated until quite recently, namely, the ageing of the population. This phenomenon has given rise to new social challenges, demands for resources, and research agendas. The size and composition of households vary over time and among societies, and this variation has implications for the well-being of the elderly persons. The numerical growth of the proportion and absolute number of elderly persons in Ghana is an eloquent testimony not only of reductions in fertility but also of reductions in infant and maternal mortality, improved nutrition, reduction in infectious and parasitic diseases, as well as improvement in health care, education and income.

The foregoing analysis has revealed that extended family living is still predominant in Ghana. In such a context reciprocal obligations arise from strong kinship bonds, and the elderly persons enjoy high prestige and honour and exercise some authority over younger family members. The elderly contribute to productive work, especially in rural farming, and enjoy a sense of be-

longing as well as emotional and physical security. While the extended family system continues to function in Ghana and many other developing countries, trends towards urbanisation are transforming its structure. The small size of urban housing units and the preference of many younger persons to live alone are increasingly making it difficult to care for the elderly persons. Moreover, it should be noted that the housing conditions in the urban areas of Ghana are not conducive to caring for the elderly persons. Urban living quarters are often not large enough for three generations and could accommodate adequately only nuclear families. This scenario may be forcing an increasing number of urban elderly to live alone.

The results of the analysis have shown that there are much more elderly persons in rural than urban areas in both absolute and proportionate terms. In particular, solitary living is more pronounced in the three northern regions (Northern, Upper West and Upper East) than the other seven administrative regions of the country. This might be because of migration of young, able-bodied adults from these less developed areas of the country in search of better opportunities of livelihood. Such ageing of the rural population has implications for agricultural productivity, maintenance of rural services and the provision of care for the older rural dwellers. Migration of the elderly persons' children to the cities could have a dramatic effect on the well-being of the rural elderly by reducing intergenerational wealth flows to the elderly and causing neglect of the elderly parents left behind. Worse, still, not only are the rural elderly persons left with less family support, they are also left with little or no health services since medical facilities are generally concentrated in urban areas.

Formal education is critical to the attainment of economic security in old age as societies respond to the urbanisation and modernisation process. Since an overwhelming majority of the elderly did not have formal education, the government should encourage girls and boys to pursue higher education for their own good and that of the society.

It should be noted that welfare policies affect only the few engaged in formal employment. Unfortunately, welfare policies in Ghana and many developing countries are modelled along the lines of the Western family structure and, thus, do not promote the traditional kinship unit. For instance, medical policies directly and indirectly discriminate against the preservation of the extended family system by allowing for the inclusion of only one spouse, even where the family is polygynous. The problem is exacerbated for the elderly persons in that they are often an invisible population of the rural farming poor who are hidden by being supported by the extended family system, a system that is steadily breaking down. As the extended family declines under the pressure of changing social and economic environment, responsibility for the care of the elderly is rapidly being transferred to the nuclear family, which in Ghana and other developing countries, however, is not well equipped to address the issue.

Unfortunately, Ghana and many countries in Africa have accorded relatively low priority in their national policies to the ageing of their populations. As a result of lack of full knowledge of the implications of the changes taking place in the traditional family, it is still assumed in most of these settings that the family will continue to provide the context within which the needs of the older population could be met.

The present study should serve as a baseline for future studies on the living arrangements of Ghana's older population. It should be noted that the elderly persons are diverse in age and ethnic background.

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It is equally important to recognise that the meaning of any form of living arrangement will vary not only across cultural and social settings but also over time. But understanding the social and economic significance of such changes for older persons is another matter.

The foregoing discussion should be considered in the light of the study's limitations. Although in the logistic regression analysis elderly persons resident in certain regions demonstrated higher probabilities of living alone, strictly speaking it does not necessarily follow that older men and women in these regions are in a greater need of care and support. This is because the GDHS and census data provide very little information about the wider kin network, for instance, we do not know whether their adult children live close by; neither do we know whether the elderly people receive remittances from their adult children working elsewhere.

Furthermore, it should be noted that although data evaluation is beyond the scope of this paper, it is noteworthy that the literature is replete with problems associated with the collection of reliable information in the African context, especially the failure to enumerate all people or events and digit preference that leads to a false concentration of people at particular age groups, which may bias the findings[22,33-35].

Moreover, the foregoing analysis furnishes no information concerning the extent to which the concept of modified extended family framework, originally proposed by Litwak[36], is changing the meaning of different forms of living arrangements in Ghana and elsewhere in Africa, especially as it relates to improvements in transportation and communication. Therefore, to more fully understand the dynamics of living arrangements patterns among the older population in Ghana, more research is needed. A better and more comprehensive appreciation of the heterogeneity of the older people and the diverse links between them and their kin networks is essential as this population subgroup continues to grow in size and demographic importance in Ghana.

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