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**Attitudes Towards Bearing the Cost of Care in Later  
Life:  
*Evidence from the HSBC Global Ageing Study on the  
Future of Retirement***

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**Attitudes Towards Bearing the Cost of Care in Later Life:**  
*Evidence from the HSBC Global Ageing Study on the Future of Retirement*

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## Abstract

The ageing of population has now been recognised as a global phenomenon. Since the issues are multifaceted ageing has become a subject of interest among multidisciplinary people. Perhaps one of the common key concerns among individuals and family members in societies today is to meet the increasing demand for elderly health care for many countries. As the socioeconomic, demographic and cultural context of individuals' vary from one setting to another, the intergenerational support as well as the cost of care responsibility also vary across the globe. In particular, issues related to elderly health care financing and supports are emerging steadily and perhaps one of the dominant topics in social gerontology. The aim of the study has been to examine the effects of age, gender and employment on the perception of people with regard to their cost of care in later life. The data for the study come from the HSBC global ageing study, popularly known as "The Future of Retirement". The initial field surveys were completed in two successive years 2004 and 2005 in which approximately 22,329 individuals were interviewed who are aged 18 years and over across twenty countries and territories covering four major regions of the world. A cross-sectional survey design was employed in which respondents were selected randomly. Each respondent was asked a battery of questions on their socioeconomic and demographic situations, their retirement and pensions, health, wellbeing and quality of life, and voluntary contribution and intergenerational support. Among others two questions were asked directly on the responsibility of financial cost of care in retirement and they are "who should bear" as well as "who will bear" most of the financial costs of caring in retirement. These questions were then explored as to how the response varied with respect to age, gender and employment status of respondents. It has been revealed that age, gender and employment status play significant role in determining people's perception towards the bearing of cost of care in retirement. There has been a significant gap between the attitudes of "should" and "will" bearing the cost of care. Finally, the paper concludes with a brief discussion on policy implications.

**Keywords:** HSBC Global ageing survey, future of retirement, geographical regions, countries and territories, financial support, cost of care, age, gender, employment, and old age.

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## Introduction

Population ageing is now a reality as people live longer in many parts of the world and has become an important subject of interest to many researchers and policy-makers simply because of its direct relevance to public policies such as resource transfer, intergenerational support, employability and retirement, social security, health and health care (see for example, Harper, 2006; Kinsella and Philips, 2005; Motel-Klingebiel and Arber, 2006; Khan and Leeson, 2006; Raeside and Khan, 2007; Lutz et al., 2007; Kabir et al., 2002; Smith and Kington, 1997; Martin, 1990). The paradigm of intergenerational justice to elderly especially with regard to their care support has been changing in almost every society which causes numerous concerns to policy-makers and today is a subject of public debate. Evidence suggests that the ability or willingness of families to support the elderly population (or support capacity of families) is declining globally and that a large number of elderly suffer numerous in the course of economic and social change (see for example, Hoff, 2007; Khan and Leeson, 2006; Aboderin, 2004; Li and Tracy, 1999; Lee and Xiao, 1998; Martin, 1990). In Gerontology, research indicates that older people are concerned with well-being, prevention of illness and quality of life (Smith et al., 2004; Smith, 2000; Morley and Flaherty, 2002; Blazer et al., 2001; Dossey, 1997; Sherbourne et al., 1992). The demand for long-term care both at home and in residential settings is growing. Longer life may create multifaceted health problems not only in low-income countries, but also a unique challenge to national health care service everywhere (Biswas et al., 2006; Plsek and Greenhalgh, 2001).

The impact of population ageing on health care costs (particularly long-term care) has become a frequently cited concern in the literature and popular media (see for example, Comas-Herrera et al., 2003; Netten and Curtis, 2001; Kotlikoff and Burnes, 2004; MacErlean, 2006; Levene, 2005). It is expected that there is an increasing tendency to use health care resources as individual grow old. According to a report from Help the Aged, one in five people are likely to require care in old age in the UK (Craegmoor Healthcare, 2007). Research shows that both relative prices as well as quantity of health care have risen in most countries over the recent years and that health care expenditure may be rising in response to ageing population (McGuire and Serra, 2005; Donnelly and Bouffard, 2004). Consequently, the demand for care has been rising over time and the trend is expected to increase for both the demand as well as the cost of care. According to Netten et al. (2001) there is an increasing demand for older people's care in the UK and there appeared to be a higher level of dependency among publicly funded residents compared with self-funded residents suggesting that some of these people may be being admitted to care who might be able to be maintained care in their own homes. Such change in the population being cared for has implications for costs of long-term care as well as financial responsibility. In the UK, there is also a stereotypical gender role within partnerships, and welfare policies reflecting and reinforcing this gender division. Women are providing part-time care services to society and earn markedly less and are therefore more likely to depend on male partners. Earning differences within couples will reflect the gender pay gap and gender segregated labour markets (Price, 2006). Research also shows that women suffer from long-term illness and stress more frequently than men in the EU counties (Alber and Kohler, 2004).

In every country, levels of health spending are considerably higher for the aged than for the younger age groups (OECD, 1996). Research indicates that a higher proportion of elderly people reported to have health problems and to that limited healthcare facilities are available in most developing countries (HelpAge International, 2000, 2007; Kalam and Khan, 2006, 2007). Old age is found to be more associated with ill-health and the decisions taken to seek health care are influenced by factors such as perception of severity of illness, familiarity and accessibility to health care providers, and financing of health care (Biswas et al., 2006). Financing health care for an elderly individual is found to be one of the crucial deciding factors of whether or not to seek treatment and type of treatment to be sought in Bangladesh (Biswas et al., 2006). In poor country, elderly people usually bears health care costs either from their own savings or from financial supports from adult children, sometimes sales of livestock and poultry or other assets and loan from friends and relatives. Financial assistance from adult children is common for elderly persons in developing countries particularly in rural areas or among poor families. Without financial support from children many elderly will face tremendous hardship for survival.

Studies on the public attitudes towards personal care for older people are rare across the globe. This is essential to understand and compare the attitudes of people across many countries. The most recent British Social Attitudes (BSA) surveys 2004 and 2005 allowed us to compare the attitudes to care for older people between England and Scotland. One of the key messages is that more people in Scotland than in England favour the idea of providing personal care for older people free of charge (Ormston and Curtice, 2007). Perhaps Scotland is a unique example in modern era where the government has agreed to pay for any personal care assistance to its older people irrespective of people's ability to cover the cost themselves and thereby introduced a policy of providing free personal and nursing care to its elderly in 2002. Data show that a majority of the Scottish public was in favour of universal free personal care rather than means testing. Six in ten said the government should pay for personal care all older people, irrespective of how well off they are. Since implementing the free personal and nursing care for elderly people in Scotland, local government are now in tremendous pressure of financial crisis to sustain the project and facing a threat of funding gap up to £63million (Horton, 2008). Critics also argued that the policy must be better funded, planned and managed if it is to continue in an ageing society. In contrast, no other country in the UK has such a policy and therefore, the sustainability of the policy in practice in Scotland remains to be uncertain and questionable.

In Europe by far elderly people pay their own cost and shifting the cost of care to the elderly is more popular among the older than among the younger generation. Older citizens in Europe are willing to shoulder their part of the cost of care and they are reasonable and compassionate enough not to advocate externalising the cost to others more frequently than younger voters (Alber and Kohler, 2004). The ageing of society has focused attention on the high cost of formal care received by the frail elderly from nursing homes and home health agencies (Johnson and Lo Sasso, 2000). In rural China, Li and Tracy (1999) found that immediate family members helped elderly with activities of daily living and that adult children provided financial assistance to them. Only eight percent of the elderly persons reported that they had adequate financial resources.

Taking care of elderly is one of the major themes in many societies where parents are obligated to nurture their children with a hope that adult children will take care of elderly parents (Li and Tracy, 1999; Fei, 1989). Family members have primary responsibility for providing, any support including medical expenses and suitable housing. As stated before, adult children are the only resource for many rural elderly in developing countries. They are expected to provide a wide range of care, including emotional support, financial assistance, personal care and health care expenses (Ikels, 1990). Evidence from a national ageing survey shows that proportion elderly persons who received family support increased with age (China Research Centre on Ageing, 1992).

As mentioned earlier, bulk of previous research has focused on the availability and types of family support for an ageing population (Leeson and Khan, 2007; Kabir et al., 2002; Hoff, 2006, 2007; Aboderin, 2004; Attias-Donfut, 2000, 2005). However, there is a deficiency in empirical knowledge of the perceived financial responsibility in older age. In a study in rural China, Li and Tracy (1999) reported that about 79 percent elderly persons received financial assistance including cash from their adult children. A vast majority of elderly rural inhabitants, who comprise more than three quarters of China's elderly population, do not qualify for retirement benefits (McCallum, 1989). Family responsibility for the care of elderly is a long tradition in many cultures and societies. In China, elderly women were more likely to receive net transfers from children than elderly men (Lee and Xiao, 1998). Evidence from several other developing countries has revealed, however, recurrent sources of concern, most particularly dependency, poor relationships with children and other relatives, and a 'bad death' (HelpAge International, 2000).

Household and kin relations are practically an asset as they play important role in mediating many people's vulnerability to external economic risks and poverty (Moser, 1998; Lloyd-Sherlock, 2000, 2006). Past research demonstrated the fact that wellbeing of elderly is much dependent on good relations with children and other family members and the converse –loneliness and abandonment – are key concerns (Aboderin, 2004; Rahman et al., 2004; Hoff, 2006). It has been shown that older people's relations with children outside their immediate households may be an equally important source of support (Kreager, 2006; Lloyd-Sherlock, 2006). According to Lloyd-Sherlock, the relationships between household composition, intra-household relations, wider kinship networks and economic vulnerability are complex and sometimes difficult to interpret. The economic situation of older people and their capacity to manage risk has been mentioned by some authors (Lloyd-Sherlock, 2006). Although the vulnerability varies for countries with the access to resources such as state pensions and other forms of public supports, in most developing countries there is limited access to free health care for older people. A study in Thailand showed that health care costs were their main expenditure item over the past year, sometimes people sale their assets due to health problems. The quality of life and overall wellbeing of elderly populations are strongly conditioned by their capacity to manage opportunities and economic vulnerability (Lloyd-Sherlock, 2006).

Despite the fact that adult children play important roles in caring their frail parents (Lo Sasso and Johnson, 2002), very little is known towards people's attitudes as to who should bear the cost of care as well as will bear the cost of care in retirement. On the other hand, there is no clear indication in literature about the role of age, gender and employment in determining perceptions of bearing cost of care for elderly people. This study thus aims to examine the role of age, gender and employment status on the perception of bearing the cost of care in old age across the geographical settings. This paper is structured into several sections. Following on from the introduction, a section on data and methods is described. Finally, main results are discussed followed by a section on conclusion.

## **The Data and Methods**

### ***The Future of Retirement Surveys***

The study makes use of data collected in the study of the Future of Retirement (FoR), a global ageing surveys (GLAS) conducted in 21 countries and territories over two consecutive periods 2004 and 2005 by the Harris Interactive Inc (a worldwide market research firm, more can be found on their website [www.harrisinteractive.com](http://www.harrisinteractive.com)) under the auspices of HSBC. The principal aim of the surveys has been to investigate globally people's attitudes towards retirements and to draw general conclusion for the wellbeing in old age. In 2004, approximately 10,000 people aged 18+ were surveyed in ten countries (Brazil, Canada, China, France, Hong Kong, India, Japan, Mexico, UK and USA). In 2005 the number of countries was increased to twenty by adding Egypt, Germany, Indonesia, Malaysia, Poland, Russia, Saudi Arabia, Singapore, Sweden and Turkey. One criterion behind the selection of countries was that in each of them HSBC had had good business networks for a long time. The interviews were mostly conducted by telephone and on some occasions by face to face. The whole data collection, editing, coding and final data-entry have been done by the Harris Interactive. Details of survey methodology and research reports can be obtained on the website [http://www.hsbc.com/hsbc/retirement\\_future/research-summary](http://www.hsbc.com/hsbc/retirement_future/research-summary) (HSBC, 2006a, b and c).

The survey was specially designed to study various specific issues of retirement for example saving and investments and the likely plan for the future. It is fairly a large global study of its nature and data have been collected from people. Individuals were selected at random according to standard procedures for each country. Typically this was random number dialing. Clearly this missed out certain sets of people, such as those without a phone line, or those who restrict their phone number to ex-directory. In some areas (Brazil, China, India) we sampled urban areas only, as the cost of examining the more rural regions escalated the overall expenditure of the survey. A variety of demographic data was collected in each market. This indicates the randomness of age, gender, and wealth spreads surveyed. Individuals were asked a battery of structured questions regarding their attitudes and perceptions to employment and retirement. Finally, we performed exploratory data analysis to address our specific objectives of the study.



### ***Selection of Variables and their Measurements***

The study uses three selected covariates age, gender and employment in order to examine their influence on the perceptions of bearing the cost of care in old age. Two dependent variables are considered for investigation and they are derived from direct questions of respondents:

- i) who should bear the cost of caring for you in retirement? and
- ii) who will ultimately bear the cost of caring in retirement?

The dependent variables are categorical in nature. The measurements of all selected variables are illustrated in Table 1.

**Table 1**  
***Questions asked in the survey, selected variables used for the study and their measurements***

Questions, Variables and Abbreviation	Type of variable and their measurements
<b>Dependent variables</b>	
Who do you believe should bear most of the financial costs of caring for you in retirement? (Should bear cost)	Categorical variable: Yourself = 1 Your children or other family members = 2 Your employer/previous employers = 3 Your government (either local or national) = 4
Who do you believe will ultimately bear most of the financial costs of caring for you in retirement? (Will bear cost)	Categorical variable: Yourself = 1 Your children or other family members = 2 Your employer/previous employers = 3 Your government (either local or national) = 4
<b>Independent variables</b>	
Age of respondent	Continuous variable: Age in completed years
Gender	Dichotomous variable: Male = 1 Female = 0
Employment status	Categorical variable: Working full-time = 1 Working part-time = 2 Not working/unemployment = 3 Retired = 4 Student = 5 Housewife = 6 Other = 7

## ***Analytical Methods***

Descriptive statistical analysis was performed to understand the selected characteristics of respondents for selected subgroups. To test the existence of any significant difference among these subgroups we then performed chi-square test. Correlation analysis was performed to examine the strength of relationship between the selected variables. Finally, the logistic regression methodology is applied to fit appropriate models to examine the influences of age, gender and employment status on the perception of bearing the cost of care in old age.

Logistic regression is a statistical model often used in the medical and social sciences when the dependent variable is a dichotomy and the independents are of any type. It is a generalized linear model that provides important information about the relationship between response variable and covariates control variables.

The general form of a logistic regression is:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k$$

Where  $p = \text{Prob}(Y=1)$  is the probability of transferring any form of support,  $\beta_0$  is the intercept parameter,  $\beta_i$  is the regression coefficients of the  $i^{\text{th}}$  variable in the model. They are the maximum likelihood estimates after transforming the dependent into a *logit* variable (the natural log of the odds of the dependent occurring or not) and can be tested by the Wald statistic which follows  $\chi^2$  distribution with 1 degree of freedom. It permits one to test null hypothesis in the logistic regression that a particular coefficient is zero. The main interpretation of logistic regression results is to find the significant predictors of dependent variable. The odds ratios (OR) are computed by  $\exp(\hat{\beta})$  which explains the effect of a particular variable as compared to their corresponding reference group. It is commonly used to explain the contribution of covariates. The overall fitness of the logistic regression model was assessed by examining the distribution of log-likelihood ratio ( $-2\log L$ ) and  $\chi^2$  test of significance. A detailed discussion on logistic regression and its application can be found elsewhere (see for example, Hosmer and Lemeshow, 2000; Khan and Raeside, 1997).

## **Results and Discussion**

### ***Respondent's perception towards old age***

The concept of old age varies over time within and across countries (Martin, 1990). Hardly there is a single definition of “old” in the literature and it is a phenomenon which has always been a socially constructed variable. The perception towards old age therefore depends on a number of characteristics of individuals such as age, sex, health, employment and socioeconomic status. In the survey, a direct question was asked: “At

what age do you think of a person as become old?” It has been found that there is a big gap between respondents reported mean old age and the life expectation, for example, in Brazil (59.7 vs 68.9), in Canada (68.0 vs 79.8), in China (49.8 vs 71.1), in India (55.9 vs 61.0), in Japan (67.2 vs 81.9), in Mexico (55.7 vs 74.3), (in France (70.7 vs 79.8), in UK (65.3 vs 78.2) and in USA (66.1 vs 77.3) respectively. The largest difference is observed for China on the one hand and the smallest difference is for India on the other. There has also been found that a significant variation exists in reporting old age between selected countries, age cohorts, gender as well as employment status (results not shown here, however can be found elsewhere Khan and Leeson, 2008).

To examine the impact of age, gender and employment on people’s perception of bearing the cost of care in later life, the study employed sophisticated statistical techniques and the results are set out in Tables 2-7. Table 2 shows that a vast majority people 44 percent reported that they should bear their own financial cost of caring in old age whereas a tiny 5 percent responded that their employer should bear their cost of care. In response to second question, a majority about 46 percent agreed that they will have to bear the cost whereas nearly 4 percent reported that their employer will bear the cost. On the other hand, it appears clearly from the analysis that there is confidence gap between individual’s response of ‘should bear’ and ‘will bear’ the cost of care. Relatively a fewer more respondents believe that they will ultimately bear their cost of care. In the survey, globally people believe that their children will bear the cost in old age. But they have some doubt in mind regarding bearing the cost of care in retirement either by the government or the employer. It would be an interesting to know what causes significant difference among the four selected categories: you, your children, your employer and your government. In this particular case of investigation we are interested to know whether or not a significant variation exists for age, gender and employment. Therefore, a chi square test has been performed and the results are depicted in Table 3. It can be seen that in both the cases, there has been significant attitudinal difference for respondent’s age, gender and employment status. This is a general picture from the global dataset, however, it may not necessarily be the same for various geographical regions, countries and territories. This will be explored further in the later of this section.

**Table 2**  
*Descriptive statistics of dependent variables and absolute gap between them*

Bear financial cost of caring	Should bear cost		Will bear cost		%
	Frequency	Percent	Frequency	Percent	
Yourself	9246	44.16	9607	46.46	2.30
Your children	4321	20.64	5676	27.45	6.81
Your employer	1100	5.25	799	3.86	1.39
Your government	6271	29.95	4598	22.23	7.72
Total	20938	100	20680	100	18.22

**Table 3**  
*Test of significance for various categories of selected covariates*

Characteristics	You	Your children	Your employer	Your government	Number of cases	$\chi^2$ test
<b><i>Should bear financial costs</i></b>						
Age						
18-59	43.46	21.16	5.45	29.94	17096	p<0.001
60+	47.17	18.42	4.30	30.11	3816	
Gender						
Female	42.51	23.28	4.69	29.52	10466	p<0.001
Male	45.81	18.01	5.80	30.39	10472	
Working Status						
Not working	40.07	20.48	4.55	28.90	9471	p<0.001
Working	47.54	15.82	5.83	30.81	11466	
<b><i>Will bear financial costs</i></b>						
Age						
18-59	46.55	28.14	3.97	21.33	16884	p<0.001
60+	45.86	24.47	3.34	26.33	3772	
Gender						
Female	44.93	30.92	3.38	20.77	10317	p<0.001
Male	47.97	24.00	4.34	23.69	10364	
Working Status						
Not working	39.73	32.94	3.44	23.88	9325	p<0.001
Working	51.98	22.93	4.20	20.89	11355	

In addition, we have carried out an exploratory analysis in order to understand the causal relationships among selected variables and this has been done separately for the 2004 and 2005 datasets. To perform a correlation analysis all selected variables in Table 1 are then recoded as dummies. They are described here as, dependent variables: (respondents should bear the cost = 1, otherwise = 0; respondents will bear the cost = 1, otherwise = 0); independent variables such as (age: under 60 years = 0, 60 years or more = 1; gender: female=0, male = 1; employment: not-working = 0, currently working = 1). Table 4 shows the means and standard deviations of selected variables along with their correlations. The present analysis shows that age is negatively associated with gender which means that a higher proportion of older people are females and they are less likely to have engaged in current workforce. Older people expressed that they should bear their own cost of caring, on the other hand, they also expect that someone else (either children or employer or the government) will bear their expenses. As stated before, males are found to be engaged more in workforce than females. In addition, males are found to have reported that they should and also will bear their cost of caring in retirement age (p<0.01). People who are currently engaged in workforce have reported that they should bear and will obviously bear their financial costs in retirement (p<0.01). Interestingly the strength of correlation is found to be higher for will bear case. This may be due to the fact that currently employed workers are financially well-off and they have confidence on bearing expenses. It would have been interesting to

know the association between the duration of employment and bearing the cost. But unfortunately the duration data is not available in the survey. Finally, as expected it has been found that a strong correlation exists between the individual's response to should and will bear the cost of caring in old ages ( $r = 0.501$ ,  $p < 0.01$ ).

**Table 4**  
*The Pearson correlation matrix for the selected variables*

	Age	Gender	Employment	Should	Mean	SD	N
<u>2004 FoR survey</u>							
Age	1.000				0.19	0.395	11387
Gender	-0.018*	1.000			0.49	0.500	11406
Employment	-0.401***	0.251***	1.000		0.57	0.494	11406
Should bear	0.019**	0.034***	0.057***	1.000	0.49	0.500	11222
Will bear	-0.019**	0.035***	0.098***	0.474***	0.48	0.500	11406
<u>2005 FoR survey</u>							
Age	1.000				0.17	0.380	9923
Gender	-0.015**	1.000			0.50	0.500	9923
Employment	-0.353***	0.230***	1.000		0.53	0.499	9923
Should bear	0.034***	0.035***	0.082***	1.000	0.38	0.485	9716
Will bear	0.003	0.033***	0.148***	0.501***	0.44	0.496	9551

*Note: Statistically significant at \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$  (2-tailed)*

The analysis of correlation demonstrates the associations between the selected variables. As we are interested in to study the effects of age, gender and employment on the issue of should bear and will bear the cost of caring in retirement, we therefore run a multivariate logistic regression separately for the two successive surveys. Logistic analysis was performed to explore factors related to whether or not people should bear/will bear the cost of care in retirement. The results of multiple logistic regression particularly their parameter estimates and the odds ratios are displayed in Table 5. It has been found that age has significant effect on both the issue of should bear and will bear the cost of care. This indicates that elderly people expressed the view that they should and also will have to bear their own cost of care in retirement. This finding is also consistent with our exploratory analysis. While analysing the role of gender we find that there is a positive attitude among males that they should bear cost by their own but an insignificant result is found in case of will bearing the cost. The analysis also indicates that the role of employment is important in bearing the cost of care in retirement. Those who are engaged in employment are found to have positive attitude in bearing the cost of care. In both surveys the odds ratios for employment are higher for will bear as compare to should bear financial cost which indicates that working group are more confident in paying their own cost of care. As can be seen in Table 5, compare to those who did not work, respondents who worked were more likely to bear their own cost of care.

**Table 5**  
**Factors affecting individual decision on the financial costs of caring in retirement for all 22 countries and territories**

Characteristics	2004 FoR survey				2005 FoR survey			
	Should bear		Will bear		Should bear		Will bear	
	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio
<b>Age</b>								
18-59 years	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000
60+ years	0.246***	1.279	0.118**	1.126	0.388***	1.475	0.347***	1.414
<b>Gender</b>								
Female	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000
Male	0.070*	1.072	0.037	1.038	0.042	1.043	-0.033	0.968
<b>Working status</b>								
Not-working	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000
Working	0.292***	1.340	0.429***	1.536	0.436***	1.547	0.706***	2.027

*Note: Significant at \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$*

Having performed the global analysis, the study is also examined the effects of age, gender and employment at regional as well as at the country level. Age is found to have positive effect in North America, Europe and also in Middle East/Africa. However, it has a mixed effect in Asia. This can be partly explained by the fact that older people should and will have to bear their cost of care. On the other hand, Table 6 shows a completely opposite result in the case of Latin America. This indicates that care cost for older people should be or will be beard not by themselves but by other family members or by employers or by governments. There has been a clear gender difference in various regions. In Europe and North America, the effect is found to be negative whereas the gender effect is positive for Latin America, Middle East/Africa and Asia. This positive effect reflects an impression that males should and will pay their cost of care. Working status has a positive effect on bearing the cost of care in retirement which indicates that those who are engaged in current employment reported that they should bear and will bear their cost of care compared to those who do not work. This is found to be a common finding for the geographical regions under investigation (Table 6).

**Table 6**  
*Factors affecting individual decision on the financial costs of caring in retirement for various regions*

Characteristics	2004 FoR survey				2005 FoR survey			
	Should bear		Will bear		Should bear		Will bear	
	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio
<b>North America</b>								
Age	0.086	1.089	0.242**	1.274	Data not available			
Gender	-0.122	0.885	-0.141	0.868				
Working status	0.089	1.093	0.498***	1.646				
<b>Europe</b>								
Age	0.487***	1.627	0.345***	1.411	0.572***	1.773	0.359***	1.432
Gender	-0.095	0.909	-0.269***	0.764	-0.093	0.911	-0.198***	0.820
Working status	0.118	1.148	0.600***	1.823	0.140**	1.150	0.713***	2.041
<b>Latin America</b>								
Age	-0.300**	0.741	-0.323**	0.724	Data not available			
Gender	0.133	1.142	0.078	1.081				
Working status	-0.157	0.855	0.071	1.074				
<b>Middle East/Africa</b>								
Age	Data not available				0.175	1.191	0.491***	1.635
Gender					0.540***	1.716	0.635***	1.887
Working status					0.626***	1.870	0.721***	2.056
<b>Asia</b>								
Age	0.275***	1.317	-0.023	0.977	0.106	1.112	-0.202	0.817
Gender	0.163***	1.178	0.289***	1.335	0.077	1.080	0.105	1.111
Working status	0.535***	1.707	0.341***	1.406	0.552	1.737	0.413***	1.512

Note: Significant at \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

The country level analysis also uses logistic regression and the results based on five countries (UK, France, Germany, Sweden and Japan) are presented in Table 7. The result clearly demonstrates existence of a country level variation. Age is found to have significant positive influence on should bearing cost of own care in Japan, UK and Germany. On the other hand, it has negative significant influence on will bearing the cost in Sweden in which elderly people's view that their cost will be beard by someone else. The effect of gender on should bearing own cost of care is found to be important for Japan. The positive sign implies an attitude that males should bear the cost. On the other hand, except UK, there has also been a positive influence on will bearing the cost for Japan. This analysis makes it clear that there is a gender difference in some countries and these are attributable to their socio, economic and cultural situations. It has been found that employment has a significant positive influence on should bearing the cost in Japan, however, a significant negative effect in case of Sweden. This may be attributable to due to better social security system in Sweden. On the other hand, while analyzing their impact on will bear the cost of care we find that current working status has a positive effect in the UK, France and Germany. These results help us to conclude those who engaged in employment will eventually bear their cost of care in old age. Moreover, it may be concluded that employment play significant role irrespective of geographical locations.

**Table 7**  
*Factors affecting individual decision on the financial costs of caring in retirement for selected countries and territories in FoR surveys*

Country	Characteristics	Should bear		Will bear	
		Parameter estimate	Odds ratio	Parameter estimate	Odds ratio
UK	Age	0.508	1.662***	0.608	1.837***
	Gender	-0.209	0.811	-0.397	0.673***
	Working status	0.279	1.322	0.733	2.082***
France	Age	0.286	1.332	-0.104	0.901
	Gender	0.027	1.027	-0.182	0.833
	Working status	-0.167	0.846	0.386	1.471***
Germany	Age	0.629	1.875***	0.157	1.170
	Gender	0.094	1.098	0.033	1.034
	Working status	-0.103	0.902	0.746	2.109***
Sweden	Age	0.018	1.018	-0.488	0.614***
	Gender	-0.012	0.988	-0.041	0.959
	Working status	-0.567	0.567***	0.181	1.199
Japan	Age	0.295	1.343**	-0.055	0.946
	Gender	0.334	1.397***	0.495	1.640***
	Working status	0.307	1.359**	0.085	1.088

*Note: Significant at \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$*



## Conclusions

In an ageing society, issues related to financial support and elderly care are growing in almost everywhere. Researchers and policy-makers are working together to find out the best possible solutions and to move the society forward. Although the care and support for elderly persons may vary for various settings with respect to the socio-economic, demographic and cultural context of individual, one thing however common is that human being needs family support when they age.

In this paper, we have highlighted some of the important results derived from the recent HSBC global ageing surveys. The main purpose of this study has been to identify the influences of age, gender and employment on the financial responsibility of care in retirement. This study examined various levels of analysis such as aggregate, regional and country level. From these analyses one can conclude that age, gender and employment have significant influence on the perception of bearing the cost of care in retirement. Findings from this study provide a unique insight into people's attitudes and perceptions towards bearing the cost of care in later life. Some of the results are different from others may be because of the cultural norms of the settings and also because of the variations between state to state system particularly the social security system.

In short, we draw the following conclusions:

- Attitudes towards old age and retirement provide a general picture across the globe. It varies across countries, geographical regions and more precisely between age and gender.
- There is a clear confidence gap among consumers with respect to their attitudes towards bearing the cost of care in retirement. Age, gender and employment status of respondents are found to be important characteristics in responding such attitudes. They remain so important even controlling for country and geographical boundaries.
- People in the UK are more aware that they will ultimately bear their cost of care in old age compare to other selected countries.

Like any research this study also suffers from some limitations. In both surveys, a limited number of questions were asked to individuals and hence we have limited variables. This result will inspire researchers to carry out further studies incorporating other important variables such as type of job and duration of employment with national representative samples for countries.

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## References

- Aboderin, I. (2004). Intergenerational family support and old age economic security in Ghana, pp 210-229. In Lloyd-Sherlock, P. (ed.), *Living Longer: Ageing, Development and Social Protection*. London: Zed Books.
- Alber, J and Kohler, U. (2004). *Quality of life in Europe: Health and care in an enlarged Europe. Summary findings*, Dublin: European Foundation for the Improvement of living and working conditions.
- Attias-Donfut, C. and Wolff, F.C. (2000). The redistributive effects of generational transfers. In: Arber, S. and Attias-Donfut, C. (eds.) *The myth of generational conflict. The family and state in ageing societies*. Routledge, London, pp 22-46.
- Attias-Donfut, C., Ogg, J. and Wolff, F. (2005). European patterns of intergenerational financial and time transfers. *European Journal on Ageing* 2:161-173.
- Blazer, D.G., Hybels, C.F. and Pieper, C.F. (2001). The association of depression and mortality in elderly persons: A case for multiple, independent pathways. *Journal of Gerontology: Medical Sciences* 56A, No. 8, M505-M509,
- Biswas, P., Kabir, Z.N., Nilsson, J. and Zaman, S. (2006). Dynamics of health care seeking behaviour of elderly people in rural Bangladesh, *International Journal of Ageing and Later Life* 1(2):69-89.
- China Research Centre on Ageing (1992). *Survey data on China support system for elderly*. Beijing: China Research Centre on Ageing.
- Comas-Herrera, A., Pickard, L., Wittenberg, R., Davis, B. and Darton, R. (2003). *Future demand for long-term care, 2001 to 2031: Projection of demand for long-term care for older people in England*. PSSRU Discussion Paper 1980, Personal Social Services Research Unit, London School of Economics and Social Science.
- Craegmoor Healthcare (2007). *Older people unclear over cost of care*, <http://www.craegmoor.co.uk>.
- Donnelly, F.X. and Bouffard, K. (2004). *Families pay the price for ageing parents*. The Detroit News, <http://detnews.com>
- Dossey, B. (1997). Complementary and alternative therapies for our ageing society. *Journal of Gerontology & Nursing* 23(19):45-51.
- Fei, H. (1989). *Rural development in China: Prospect and retrospect*. Chicago, IL: The University of Chicago.
- Harper, S. (2006). *Ageing societies: myths, challenges and opportunities*. New York: Hodder Arnold.

- HelpAge International (2000). *Uncertainty Rules Our Lives: The Situation of Older People in Bangladesh*. HelpAge International regional Development Centre, Chiang Mai, Thailand.
- Help the Aged (2007). Facts and figures: global ageing, London. <http://www.helpage.org/News/Mediacentre/Factsandfigures>
- Hoff, A. (2007). Patterns of intergenerational support in grandparent-grandchild and parent-child relationships in Germany. *Ageing and Society* 27:643-665.
- Hoff, A. (2006). *Lone mothers between the welfare state and informal support: A cross-national comparison of Germany and the United Kingdom*. London: The Edwin Mellen Press.
- Horton, C. (2008). Cash shortfall for Scotland's free care. The Guardian, Friday February 1, UK.
- Hosmer, D.W. and Lemeshow, S. (2000). *Applied logistic regression*. Wiley, New York.
- HSBC (2006a). The future of retirement: what the world wants, London: HSBC Group Head Office. [www.thefutureofretirement.com](http://www.thefutureofretirement.com)
- HSBC (2006b). The future of retirement: what the people want, London: HSBC Group Head Office. [www.thefutureofretirement.com](http://www.thefutureofretirement.com)
- HSBC (2006c). The future of retirement: what business want, London: HSBC Group Head Office. [www.thefutureofretirement.com](http://www.thefutureofretirement.com).
- Kabir, Z.N., Szebehely, M. and Tishelman, C. (2002). Support in old age in the changing society of Bangladesh. *Ageing and Society* 22:615-636.
- Kalam, I.M.S and Khan, H.T.A. (2006). Morbidities among older people in Bangladesh: Evidence from an ageing survey, *BRAC University Journal* 3(2):75-83.
- Kalam, I.M.S and Khan, H.T.A. (2007). Determinants of health status of elderly people in Bangladesh, *Asian Profile* 35(1):71-82. .
- Khan, H.T.A. and Raeside, R. (1997).
- Khan, H.T.A. and Leeson, G.L. (2008). Attitudes towards bearing the cost of care in later life: *Evidence from the HSBC Global Ageing Study on the Future of Retirement*. Paper presented at the Radical Statistics Annual Conference held at Edinburgh, March 1.
- Khan, H.T.A. and Leeson, G.L. (2006). The Demography of Ageing in Bangladesh: *A Scenario Analysis of Consequence*, *Hallym International Journal of Ageing* 8(1):1-21.
- Kinsella, K. and Philips, D.R. (2005). Global ageing: The challenge of success. *Population Bulletin* 60(1):40.
- Kotlikoff, L.J. and Burnes, S. (2004). The coming generational storm. Cambridge, MA: MIT press.
- Kreager, P. (2006). Migration, social structure and old-age support networks: a comparison of three Indonesian communities, *Ageing and Society*, 26:37-60.
- Ikels, C. (1990). Family caregivers and the elderly in China. In D.E. Biegel & A. Blum (eds), *Ageing and care giving theory, research, and policy* (pp. 270-284). Newbury Park, CA: Sage.
- Li, H and Tracy, M.B. (1999). Family support, financial needs, and health care needs of rural elderly in China: A field study. *Journal of Cross-Cultural Gerontology* 14(4):357-371.
- Johnson, R.W. and Lo Sasso, A.T. (2000). *Parental care at midlife: Balancing work and family responsibilities near retirement*. Brief Series No. 9, Urban Institute, Washington.
- Leeson, G.W. and Khan, H.T.A. (2007). Factors affecting intergenerational financial, help and care transfers: Evidence from a global ageing survey. Paper presented at

- the NSC-IIAS conference on Public and private old-age security arrangements in Asia and Europe, 5-7 September, Den Haag, the Netherlands
- Lee, Y. and Xiao, Z. (1998). Children's support for elderly parents in urban and rural China: Results from a national survey. *Journal of Cross-Cultural Gerontology* **13**:39-62.
- Levene, T. (2005). Pay more – or pay price in old age. *The Guardian*, Saturday, November 12, UK.
- Lloyd-Sherlock, P. (2000). Population ageing in developed and developing regions: Implications for health policy. *Social Science and Medicine* **51**:887-895.
- Lloyd-Sherlock, P. (2006). Identifying vulnerable older people: Insights from Thailand. *Ageing and Society* **26**:81-103.
- Lo Sasso, A.T. and Johnson, R.W. (2002). Does informal care from adult children reduce nursing home admissions for the elderly?, *Inquiry* **39**(3):279-97.
- Lutz, W., Samir KC, Khan, H.T.A., Scherbov, S. & Leeson, G.W. (2007). *Future ageing in South-East Asia: Demographic trends, Human Capital and Health Status*, Interim Report IR-07-026, IIASA.
- Martin, L.G. (1990). The status of South Asia's growing elderly population. *Journal of Cross-Cultural Gerontology* **5**:93-117.
- MacErlean, N. (2006). Growing concern over provision of long-term care sparks campaign. *The Observer*, Sunday, July 30, UK.
- McCallum, J. (1989). Need versus status in services for the elderly in China. In: *Population Ageing in China*. The Institute of Population Studies, Chinese Academy of Social Sciences, Beijing: New World Press.
- McGuire, A. and Serra, V. (2005). The cost of care. Is there an optimal level of expenditure? *International Health* **27**(1).
- Morley, J.E. and Flaherty, J.H. (2002). It's never too late: Health promotion and illness prevention in older persons. *Journal of Gerontology: Medical Sciences*, **57A**, No. M338-M342.
- Moser, C. (1998). The asset vulnerability framework: reassessing urban poverty reduction strategies. *World Development* **26**: 1-19.
- Motel-Klingebiel, A. and Arber, S. (2006). Population ageing, genders and generations. *International Journal of Ageing and Later Life* **1**(2):7-9.
- Netten, A. and Curtis, L. (2002). *Unit costs of health and social care 2002*, Personal Social Services Research Unit, University of Kent.
- Netten, A., Bebbington, A., Darton, R. & Forder, J. (2001). *Care homes for older people: facilities, residents and costs*. Volume 1, Personal Social Services Research Unit (PSSRU), University of Kent at Canterbury.
- Ormston, R. and Curtice, J. (2007). *Different policies, different priorities? Comparing public attitudes to personal care and patient choice in England and Scotland*. Scottish Centre for Social Research, Edinburgh.
- OECD (1996). Organisation for Economic Cooperation and Development. *Ageing in OECD countries. A critical policy challenge*. OECD Social Policy Studies No. 20, Paris.
- Plsek, P.E. and Greenhalgh, T. (2001). Complexity science: the challenge of complexity in health care. *British Medical Journal* **323**(7313):625-628.
- Price, D. (2006). Gender and generational continuity: Breadwinners, caregivers and pension in the UK. *International Journal of Ageing and Later Life* **1**(2):31-66.

- Raeside, R. and Khan, H.T.A. (2007). *The Ageing Scottish Population: Trends, Consequences and Responses*, Oxford Institute of Ageing, Working Paper #207, University of Oxford.
- Rahman, O., Menken, J. and Kuhn, R. (2004). The impact of family members on the self-reported health of older men and women in a rural area of Bangladesh. *Ageing and Society* 24:903-920.
- Sherbourne, C.D., Meredith, L.S., Rogers, W. and Ware, J.E. (1992). Social support and stressful life events: age differences in their effects on health-related quality of life among the chronically ill. *Quality of Life Research* 1:235-246.
- Smith, A.E. (2000). Quality of life: a review. *Education and Ageing* 15(3):419-35.
- Smith, A.E., Sim, J., Scharf, T. and Phillipson, C. (2004). Determinants of quality of life amongst older people in deprived neighbourhoods. *Ageing and Society* 24: 793-814.
- Smith, J.P. and Kington, R. (1997). Demographic and economic correlates of health in old age. *Demography* 34(1):159-170.