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The Changing Demography of Scotland and the Impact on the Market for Volunteer Labour

By

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A dissertation presented in fulfilment of the requirements for the degree of Doctor of Philosophy

2012

This dissertation is the result of the authors' original research. It has been composed by the author and has not been previously submitted for examination, which has led to the award of a degree.

Signed: Date:

Acknowledgments

The research that constitutes this dissertation was supported by the Scottish Funding Council (SFC). The financial assistance of this organisation is gratefully acknowledged.

I would also like to acknoweledge the love and support I have received during this research from my wonderful and handsome husband Daniel and my two beautiful daughters, Taylor and Millie.

Abstract

Scottish demography is one of population ageing and decline in the longer term. According to the GROS 2008-based projections, the proportion of the working-age population will decrease from 62.6% in 2008 to 59.7% in 2033. Simultaneously, the proportion of those aged 65+ will increase sharply from 19.7% in 2008 to 24.1% by 2033. These changes in demography will affect individual prosperity and public welfare. This dissertation investigates the effects that various levels of migration, fertility, and mortality may have on reducing this ageing and declining population, as well as the ageing work force. It is found that a positive migration of 20,000 (young) migrants annually would maintain a stable working-age population over the projection period to 2050. Improvements in mortality rate will have little effect on the working-age population, while higher fertility may not have a short-term impact, however, may have a positive long-term impact.

This dissertation also examines an alternative approach to help maintain public welfare in the form of volunteer labour. A model of volunteer behaviour is derived and then combined with the population forecasts. The main findings of the empirical model tested in this dissertation show that fertility and mortality alone would not prevent the supply of volunteer labour from decreasing by 2050. A positive net-migration of 5,000 young migrants annually would maintain the level of volunteers. Given assumptions about the dynamics of volunteer behaviour and natural change only, a rise of 6% in the participation rates of people aged 45-74 would also maintain current volunteer levels by 2050.

Finally, this dissertation examines the role of people aged 65+ specifically. Over the last decade, they have accounted for the largest percentage increase in volunteer participation rates. Given both their propensity to volunteer and increasing number, it is reasonable to assume there will be a large pool of older volunteer labour in the future. It is found that the older volunteers can be organised in such a way, as to bring economic benefit in areas such as age-related care to their fellow cohorts; therefore, it would be a partial solution in maintaining individual prosperity and public welfare.

Table of Contents

List of Figures

List of Tables

Chapter 1 Introduction

1.1 Background

Scotland is one of many industrialised countries currently experiencing an ageing population with a redistribution of the population away from the younger to the older age groups. Scotland also has a declining population in the longer term (Scottish Government, 2009a). Currently, Scotland can be described as a country with a below replacement level of fertility, decreasing mortality and positive net-migration. The short-term increase in the fertility level and positive net-migration, along with decreasing mortality, has caused an increase in the growth of the Scottish population in recent years.

One person in every five in Scotland is over 50 years of age; consequently, the pensionable population of Scotland is projected to increase by 320,000 between 2008 and 2033, according to the General Register Office for Scotland (GROS) 2008-based population projections (GROS, 2009a). The pensionable age population could make up as much as 24.1 per cent of the total population by 2033 (1.34m), from its current level of 19.7 per cent (1.02m). This would cause the projected old age dependency ratio to increase from 31.4 per 100 working-age population to 40.4 per 100 during this period. It is reasonable to assume the effects of the aging population on the scale that Scotland faces will have major implications for public welfare. For this reason, the investigation into the future demography of Scotland and possible ways to reduce the pressure on future state supplied age-related provisions are both interesting and important.

The ageing and declining population will affect public finances by increasing the demand for a variety of government-supplied provisions. Provisions include state-supplied health and personal care that has shown to increase with age. Other provisions affected will be pensions and housing, which will be required by the growing elderly population. This increase in the demand for age-related provisions will be exacerbated by a reduction in the public purse as the number of people of working age declines. The working-age population, shaped by demographic factors and labour force participation rates, is expected to reduce (Wright, 2008; Scottish

Government, 2010a). This affects the government's ability to collect revenue from taxes and national insurance from this important economic group. The Scottish Government (2010a, p23) states there are two main considerations concerning a policy on an ageing population, "Consideration of how the labour market participation rate can be increased for older age groups; Consideration of how public services, and age-related public services in particular, can be funded as the proportion of the population of working age continues to fall".

The size of the working population in this analysis is particularly focused on the 20–64 age group, which accounts for 95 per cent of those employed in Scotland (Wright and Lisenkova, 2006). This group is significant in determining the level of economic welfare in Scotland, "Population growth (and growth of the working-age population in particular) is one of 3 key supply-side drivers of GDP growth, over the medium to long term, along with labour market participation and productivity" Scottish Government (2010a, p.6). What is of interest is what would the potential future impact on the size and age structure of the Scottish working population be if the current trends in fertility, mortality and net-migration continues?

The GROS assumes a long-term fertility rate of 1.7 live births per woman and a long-term positive net-migration flow of 12,000 migrants per year. These migrants are expected to be generated by 5,500 international net-migrations and 6,500 UK cross-border net-migrations. Given these assumptions, the GROS projections suggest the working-age population will decrease over the coming decades. This decrease is expected to shift from its current level of 62.6 per cent of the population to 59.7 per cent by 2033. In Chapter 3, several alternative scenarios will be produced using the demographic software 'Popgroup', developed at the Cathie Marsh Centre for Census and Survey Research, University of Manchester England. This will give an insight into what the impact of varying fertility levels, mortality rates and the level of net-migration will have on the working-age population of Scotland.

There is an expected reduction in the demand for provisions consumed by the younger generations, e.g., nurseries and schools. This will only go a small way to counter balance the overall public spending by the Scottish Government. The Scottish ageing population and long-term declining of the population will cause

significant economic and social changes. This will influence areas including savings, consumption, labour markets (tax transfers, pensions, and intergenerational transfers), investments, and economic growth. There are concerns as to Scotland's ability to provide the long-term intergenerational social support needed to accommodate the older population. The provision of pensions and other social benefits is a growing concern. Changes will need to be made if public welfare is to be maintained in the future.

The areas of provision, e.g., health and social care, needed for the growing older population is one of the main issues of concern. More females are entering paid employment reducing the level of social care available to older relatives; therefore, help from family members is no longer an option in many situations at a time when there is a growing need for provisions for an ageing country. Wood and Bain (2001, p.xi) state that "Meeting the needs of an ageing society is one of the main challenges that Scotland is facing at the beginning of the 21st century". According to the Scottish Government (2003a), older people, especially the 75+ age group, are major users of health and community care services. Further, that currently health and social work are two of the largest four areas of Scottish public expenditure.

Wood and Bain (2001) point out older individuals have a higher propensity to access health and social services, in particular the use of services, e.g., emergency hospital inpatient care. They found this propensity has increased significantly in recent years. In the future, Scotland will experience a sharp rise in the services needed for the older population as the country ages. Adding to this, Hatton-Yeo (2006) states that when people reach the age of 75 years old, between 40 and 50 per cent of older people will probably be living on their own. This places enormous geographical pressure on the provision of care. The reason for this geographical pressure is the dispersion of the Scottish population. In remote rural areas, 6 per cent of the population live on 69 per cent of the land. In accessible rural areas, 12 per cent of the population live on 25 per cent of the land. This leaves the rest of Scotland, 82 per cent of the population, living on 6 per cent of the land (Scottish Government, 2011f).

Currently, the remote rural and accessible rural areas are expected to age at a faster rate than elsewhere in Scotland. This is because these areas have the largest

proportion of 65+ year olds than the rest of the country. The GROS (2011a, p.5) found that, as the Scottish population has increased over the last two decades, the number of household has increased markedly more, "Since 1991, Scotland's population has increased by almost 2.7 per cent. The number of households has increased at a far greater rate (by 15.4 per cent) because the average household size is getting smaller, with more people living alone and in smaller households".

There is an expectation the number of one-adult households will increase significantly over the next twenty-five years or so, as a consequence of the ageing population (GROS, 2009b). The GROS (2009b) suggests that in some areas, the number of one-person households is projected to rise by a minimum of 20 per cent and expects this in 14 of the 32 Local Authorities. This will place a tremendous amount of pressure on the state provision of services over the country. The Scottish Government (2010a, p.29) recognises the future pressure the ageing population will bring to Scotland geographically, "...in relation to geographic variation, the greater proportion of older people in rural areas suggests higher demand for age-related health and social care services". This will mean greater demand for age-related services and provisions being met with a decreasing supply of labour expected to provide such age-related services and provisions. According to the Scottish Government (2010a, p.23), these are the two main consideration given the future demography, "Consideration of how the labour market participation rate can be increased for older age groups; Consideration of how public services, and age-related public services in particular, can be funded as the proportion of the population of working age continues to fall".

1.2 Aims

A need to find solutions that will ease the burden of supplying public provisions in an ageing society has been established. The aim of this dissertation is to find a way that could potentially reduce this burden. The research will focus on greater involvement from the voluntary sector as a way to achieve this. Voluntary organisations have many potential recipients and probably more so in the future. The scarcity in the sector is the availability of volunteers and this is what needs to be investigated. This dissertation will examine the current and future supply of

volunteers with the assumption that older people will account for a significant amount of volunteer labour in the future. This assumption has been made given recent trends in volunteering. Over the last decade, the Scottish voluntary sector has experienced its highest increase in volunteers from the 60+ population (Scottish Household Survey, 2000–2010; Findlay and Findlay, 2005).

If we understand the determinates of the voluntary sector and volunteer participation, then we can use this understanding to forecast what the potential response of this labour supply could be in the future. An examination of the Scottish voluntary sector will be carried out to help gain an insight into its current status and volunteer patterns; then, forecasts of future volunteering numbers will be produced. The purpose of these forecasts is to identify the potential number of age-specific volunteers. The strategic intention is to utilise this labour resource to elevate some pressure on the demand for future age-related provisions. The forecasts will include several scenarios, e.g., high and low fertility rates, high and low net-migration levels, and a change in mortality rate.

Further, the research will also produce forecasts of changes in age-specific volunteering rates. Examining the potential future supply of volunteer labour with varying demography effects will allow inferences to be drawn. These inferences have the potential to impact future policies aimed at age-related provisions. An example of which will be investigated during this research. Given the future demography of Scotland and if current trends in volunteer participation continue, the amount of older volunteer labour available will increase. This ‘third army’ of labour supply can contribute to the Scottish economy by providing age-related provisions to older people. As Alexis de Tocqueville (1805–1859, p.1) said, “We succeed in enterprises which demand the positive qualities we possess, but we can excel in those which can also make use of our defects”. A greater economic engagement by older volunteers not only allows them to maintain the link to the labour market but also to continue to add significant value to society.

In this dissertation, the action of volunteering is considered as supplying labour with ‘no concern for financial gain’ and not as ‘working for free’. Further, the intention to use the volunteer labour is not as a replacement of paid employees. The intention is

to fill the future labour shortage in Scotland of age-related provisions in such a way, as it will bring about social-economic benefits to the stretched public services and ensure living standards do not decline in the future. Putman (1995, p.67) saw volunteering as a way of maintaining and improving living standards "For a variety of reasons, life is easier in a community blessed with a substantial stock of social capital". Putman goes on to explain what these blessings are "Civic engagement and social connectedness produce such results - better schools, faster economic development, lower crime, and more effective government".

This research focuses on the impact of the older retired volunteers in Scotland, but this is one of many groups that can be targeted. Other groups include migrants, young adults, disabled, people from less well-off areas, unemployed and ethnic minorities. These groups are underrepresented in the Scottish voluntary sector and if focus was placed on recruiting them, this may help alleviate some of the extra demand on public services, as a result of the ageing and declining population.

1.3 Outline of the Study

The overall structure of the dissertation will be as follows: In Chapter 2, the three components of population change (fertility, mortality, and net-migration) will be investigated. This investigation will include historical and current trends in order to build a demographic profile and aid in our understanding of how Scotland has arrived at its present situation. Comparisons with the trends in the rest of the UK and the EU will also be examined to help give some perspective to the Scottish situation.

After examining the current demography of Scotland, the next step is to investigate possible future population trends. For this, the GROS 2008-based population projections will be analysed and replicated using Popgroup. Once this has been carried out, a number of alternative forecasts will be produced. The forecasts will focus on the working-age population as this group has a substantial economic impact on the Scottish economy and on individual prosperity. These forecasts will include varying fertility rates, mortality rates, and net-migration levels that will highlight the level of significance each component has on the future demography of Scotland.

Having established the outcome of several future demographic scenarios in Chapter 3, the focus will then move to the voluntary sector and volunteers. In Chapter 4, the theory of the evolution of the sector will be investigated. A number of main theories will be included, e.g., demand-side, social origins, partnership, supply-side, and transaction cost. The theories on why individuals volunteer will also be examined, including the functional approach, consumption (public, private and impure altruism), investment, relational and life satisfaction. In addition, in Chapter 4, the theory of moonlighting will be introduced and extended as a way of aiding our understanding of a volunteer's choice and behaviour. The extended moonlighting theory will examine an individual's decision to volunteer, given both constrained and unconstrained hours in the individual's main (or paid) job.

Given the importance of the older people in the size and age structure of the Scottish population, Chapter 5 will specifically examine the theory of the older volunteer. A greater understanding of the older volunteer is one of the key ways to increasing the future volunteer labour supply, the value of this group in the Scottish population cannot be overstated. The analysis begins by addressing the ageing society in Scotland, the UK, and the World as a way of establishing the current and future ageing environment.

The complexities of the older population will be examined. The chapter will include practical areas of analysis such as motivation of older volunteers and the benefits volunteering is reported to bring to older people. In addition, the recruitment, retention, and management of the older volunteers will be discussed. Areas in which current older volunteers operate in will be highlighted; finally, some of the main barriers preventing older people from volunteering will be discussed.

Once the general theories of the voluntary sector and the volunteers in both Chapter 4 and 5 have been considered, the Scottish voluntary sector and the volunteers will then be able to be discussed with greater insight in Chapter 6. It is important to have an understanding of the sector and its volunteers prior to any future strategies being introduced. The investigation will begin by highlighting some statistics on volunteering in other countries by way of establishing some comparisons; then, the Scottish sector itself will be examined. Areas investigated will include the size and

scope of the sector and both the local and national infrastructure. Important bodies relating to voluntary sector, both internal and external, will be examined. In addition, partnerships with government and their effects will be discussed.

The demography of the Scottish volunteers will be investigated with social-economic characteristics examined in order to build up a profile of the current volunteers. The weakness in the sector will also be discussed along with the economic value. In measuring the economic value of the sector, a variety of theories will be highlighted. This will then allow an economic value to be derived for the Scottish voluntary sector. Positioning and branding of the sector will also be discussed, because of its growing importance, given an increasingly hostile economic climate. Finally, current initiatives in the sector will be discussed.

Having examined the Scottish voluntary sector and its volunteers, Chapter 7 will investigate the Scottish volunteer in greater detail and create a more usable profile. The characteristics that may help in determining a Scottish person's choice to participate in volunteering activities will be investigated; they will form the independent variables that will be included in a logit model. The variables considered are sex, age, marital status, level of education, employment status, social-economic status, income level, the Scottish Index of Multiple Deprivation (SIMD), area of residence, Local Authority, health status, presence of children and neighbourhood satisfaction rating.

The dataset used in this analysis will be the Scottish Household Survey (2009). By estimating a series of logit models, this will aid in our understanding of volunteer behaviour. Once this understanding is established, it is possible for assumptions to be drawn from the results. This chapter will produce a number of predicted probability examples regarding a combination of different social-economic characteristics. This will enable a deeper understanding of volunteer behaviour in Scotland and facilitate in identifying important trends in volunteering, e.g., the propensity to volunteer by specific age groups.

In Chapter 8, the implications of the changing demography of Scotland and the impact on the market for volunteer labour will be investigated by combining the

population projections produced in Chapter 3 and the regression results in Chapter 7. Varying levels of volunteer labour will be identified given different fertility rates, mortality rates, net-migration levels and age-specific volunteer rates.

A summary of the results from previous chapters will then be discussed along with weaknesses of the research. An example of a policy for utilising the older volunteers will be examined. This policy will use the older volunteer labour supply to provide provisions to older people living in care homes and to enable older people living in their own homes to do so for as long as possible through the provision of homecare. There will be a number of steps illustrated given the ageing and declining population. They will include the provision of care for the elderly in the free market, the older volunteer labour supply without added encouragement to volunteer, and the older population targeted in late working life, mobilised prior to retirement and 'nudged' by the government to volunteer in retirement.

This last step will highlight the impact of using this third army of volunteers. The impact will be that demand and supply will be in equilibrium and the wage rate for supplying labour for age-related care to older people in their own homes and care homes will be maintained at its initial rate. Finally, a discussion on the direction of future research will be identified. This will be examined using financial incentives to encourage volunteer participation and the use of migrant labour to fill the future labour shortage in age-related provisions and services.

Chapter 2 Scottish Demography, Past and Present

2.1 Introduction

According to Siegel and Swanson (2004), demography can be defined by several aspects of the human population, which are (1) size, (2) distribution, (3) composition, (4) population dynamics, and (5) socioeconomic determinants and consequences of population change. The dynamics of population change is an important issue. Any changes in the population structure, both in size and age, will have significant consequences for the economic growth of Scotland, the overall spending ability and the overall demand for public services. As mentioned, Scotland is one of many industrialised countries currently experiencing an ageing population. There is a redistribution of the population away from the younger age groups to the older age groups. Scotland also has a declining population over the longer term.

The ageing population means the median age of the country is increasing. In 2000, the median age was 37 years for males and 39 years for females. By 2010, the median age increased to 39 years for males and 42 years for females (Office for National Statistics (ONS), 2011). This increase in the median age has been caused by two main factors, a long-term decrease in the birth levels and an increase in the age of mortality. The population is declining in the longer term because of a historically long period of decreasing fertility levels and a traditionally negative net-migration level.

Currently, Scotland can be described as a country with a below replacement level of fertility, decreasing mortality rate and having positive net-migration. This has contributed to the overall growth in the Scottish population in recent years. Population growth is important to a country for a number of reasons. Population growth brings an increase in demand for all manners of goods and services. That in turn, leads to employment and business opportunities, along with an increasing labour pool and productivity. This increase in output potential, may lead to an increase in tax revenues and therefore, an increase in the government's spending capabilities.

To understand the current demographic situation, it is important to examine the past mortality, fertility and net-migration, as these are the three fundamental components of the demographic processes. A detailed examination of these components will be carried out. Creating this demographic foundation allows for estimates to be drawn on what the future demographic profile could be if the current trend continues. This will be done by producing population projections based on the assumptions of current trends in fertility, mortality, and net-migration. The population projections are the responsibility of the GROS and they are the subject of Chapter 3.

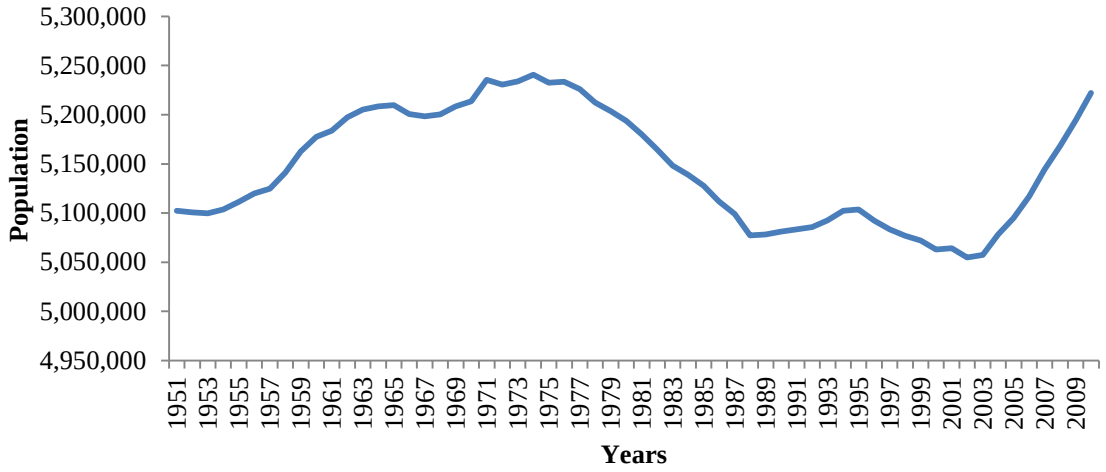
2.2 The Scottish Demographic Past and Present Population Size and Structure

Change in population size is given by a basic demographic equation (or demographic balancing), which is the sum of natural increase (or decrease) and net-migration. Natural increase (or decrease) is the difference between number of births (B_t) and deaths (D_t) and provides a more sustainable longer-term answer for a growing population. Net-migration is the difference between the number of immigrants (I_t) and emigrants (E_t) from a country during the same period. Net-migration can be a short to medium-term solution to population growth. The population change is given by $P_t+_1 - P_t$ (at some point in time $_t$, contains P_t persons, one year later contains P_t+_1 person) that leads to the expression:

$$P_t + _1 = P_t + B_t - D_t + I_t - E_t \qquad [2.1]$$

This is a basic demographic equation. It is possible to add more variables, e.g., marriage and divorce, sickness or morbidity, and social-economic characteristics, to produce a more realistic representation of the causes and consequences of demographic change (Siegel and Swanson, 2004). The current demographic profile of Scotland is a reflection of the country's history, culture, and social-economic environment. Figure 2.1 shows the population growth and decline patterns of Scotland over six decades. The population of Scotland in 2010 was reported by the GROS (2011c) to be 5,222,100 (highest population recorded since 1977) and shows a constant growth since 2003.

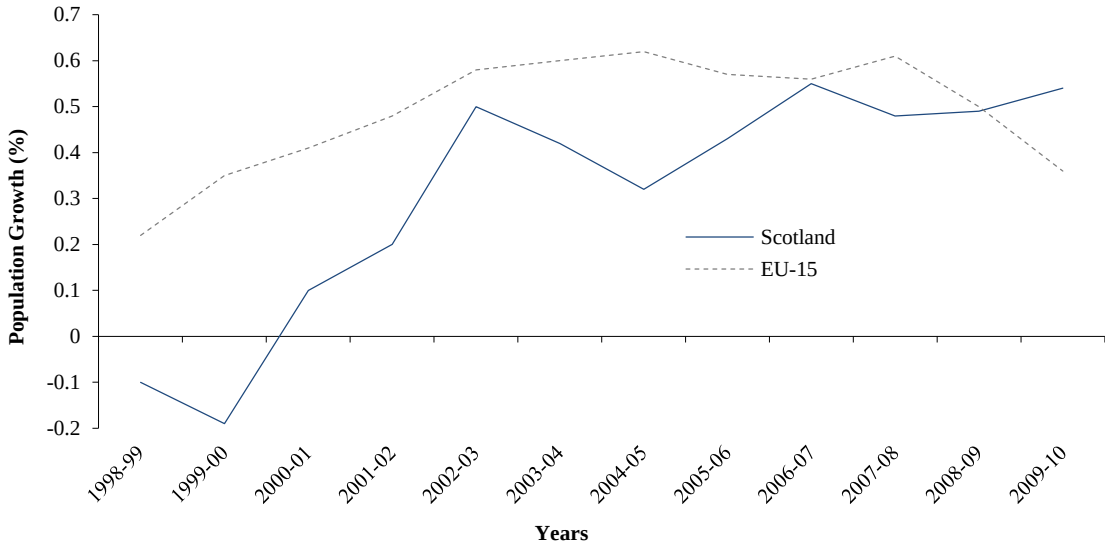
Figure 2.1 Population of Scotland, 1951–2010



Source: GROS (2012e)

The Scottish Government set an objective for the country to match the population growth rates of the EU-15 population growth rates, during the period 2007 to 2017 (Scottish Government, 2010a). Figure 2.2 shows the recent population growth as a percentage for Scotland and the EU-15[1]

Figure 2.2 Population Growth (%), Scotland and EU-15, 1989–1999 to 2009–2010

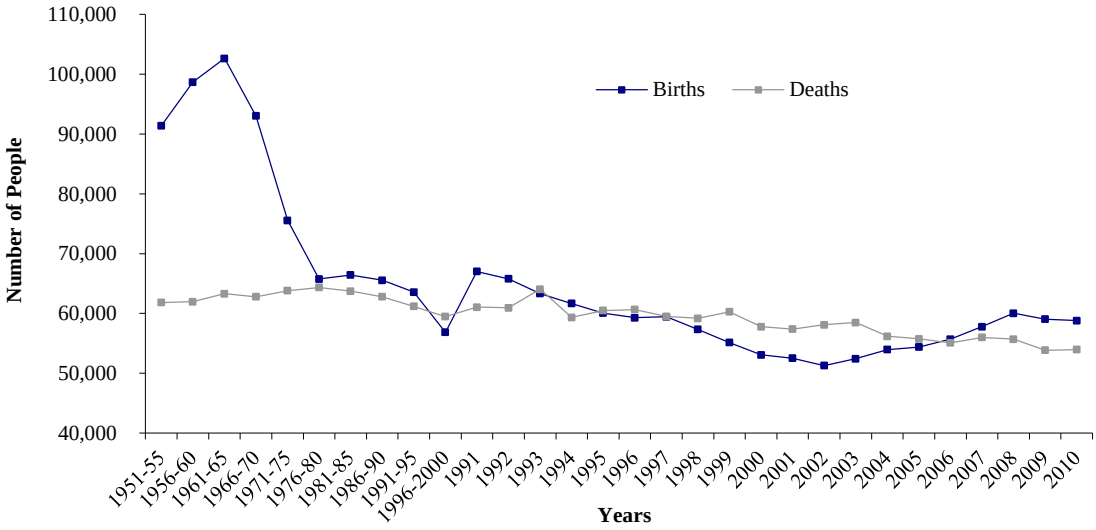


Source: GROS (2011c)

[1]EU-15 include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom

Figure 2.3 shows the natural change in the Scottish population from 1951 to 2010. Historically, Scotland has experienced declining death and birth levels. In recent years, there has been an increase in the birth levels. During 2010, the total number of deaths was 53,749 and the number of births was 58,791 (5,188 more births than deaths).

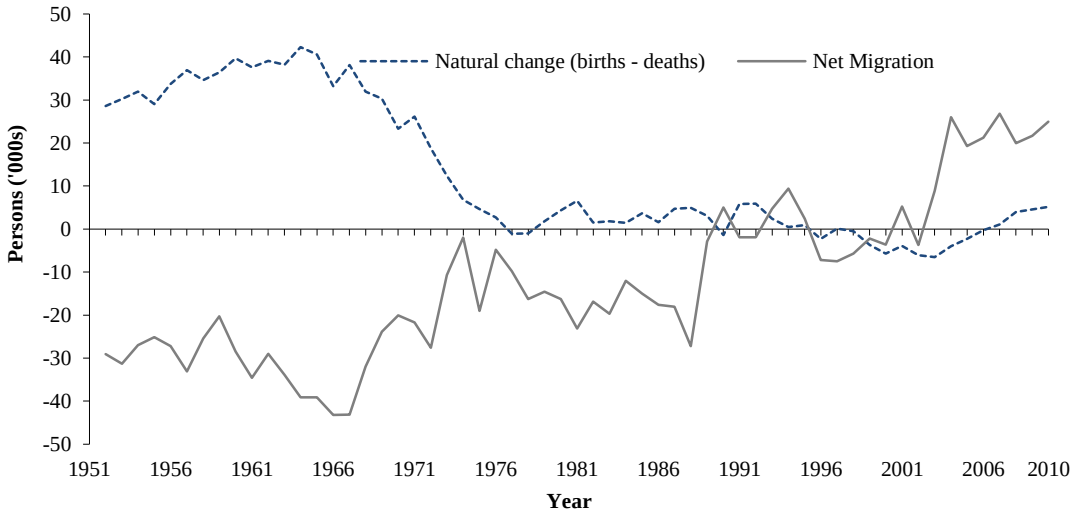
Figure 2.3 Natural Population Change, Scotland, 1951–2010



Source: Data from GROS (2011c)

Figure 2.4 shows the natural change in the Scottish population and the net-migration level. In 2010, the net-migration was substantially higher (24,968) than the natural change (5,188).

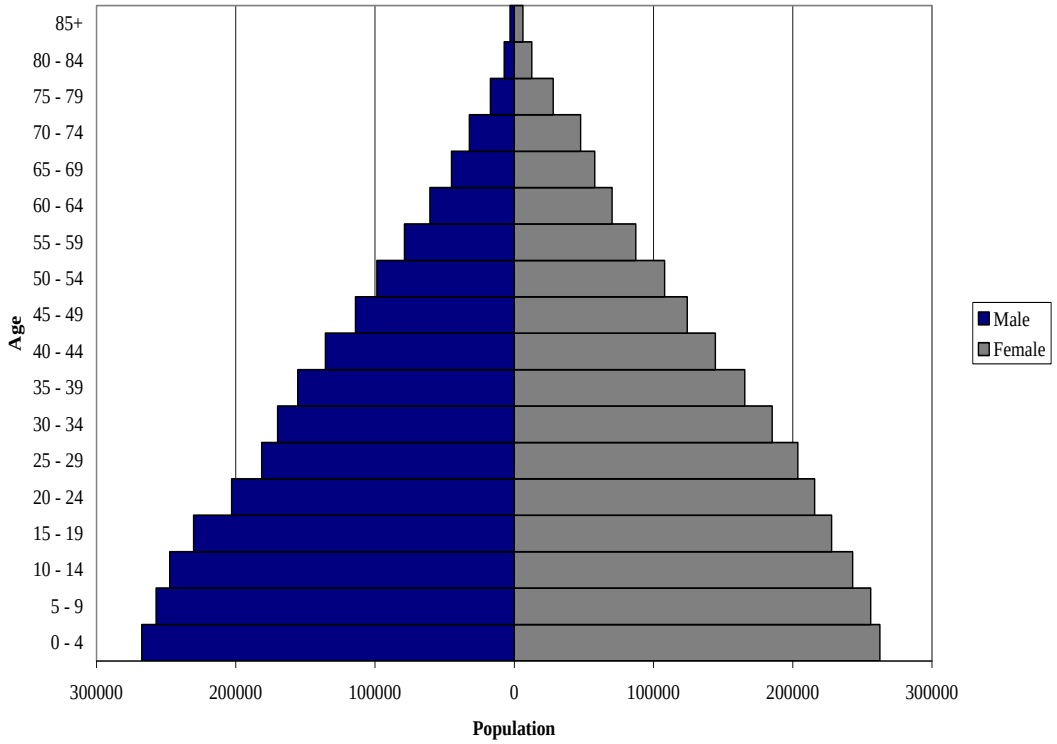
Figure 2.4 Natural Change rate and Net-Migration Rate, Scotland, 1951–2010



Source: GROS (2011c)

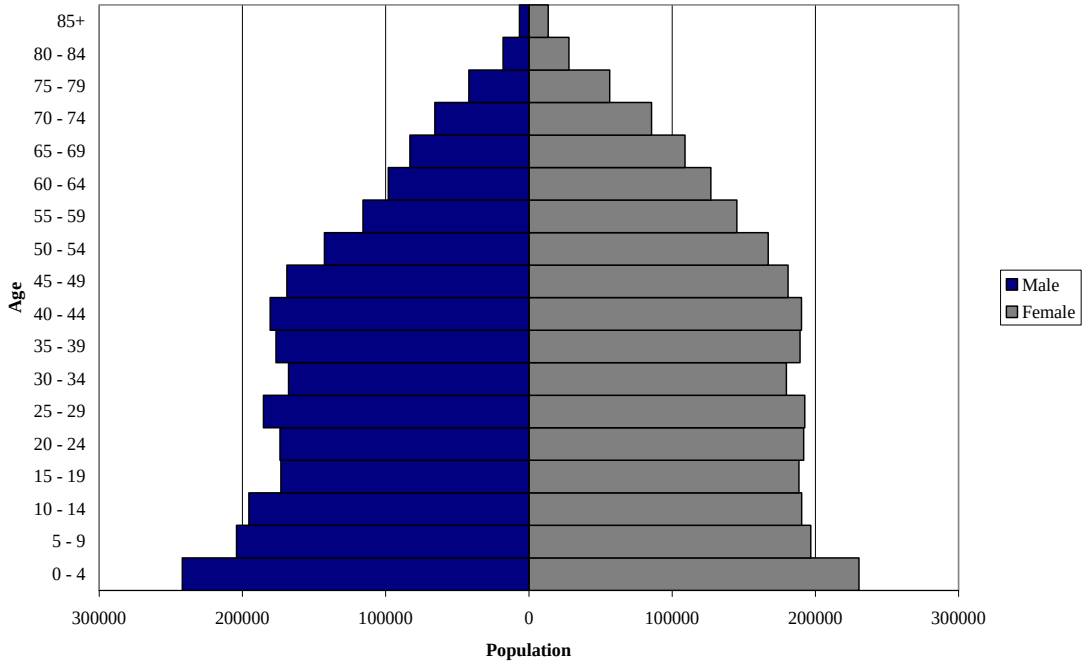
An examination of the shape of the population pyramids gives an overview of the population growth and its age structure over time. In 1911, Scotland had a ‘pyramid shape’, but it currently has a ‘cruise ship shape’, as shown in Figures 2.5 to 2.8. Scotland had a pyramid shape in 1911 because of the shorter life expectancy, mainly due to the limited health care available; also, the number of births was high and the replacement level was above 2.10. This is evident with the broad width at the base of the population pyramid and the narrow top. By 2001, this pyramid shape is not as obvious; indeed, the people in their late thirties is the peak age group, and the younger age group is declining. The bulge in the middle is evidence of a declining population.

Figure 2.5 Estimated Age Structure, Scotland, 1911



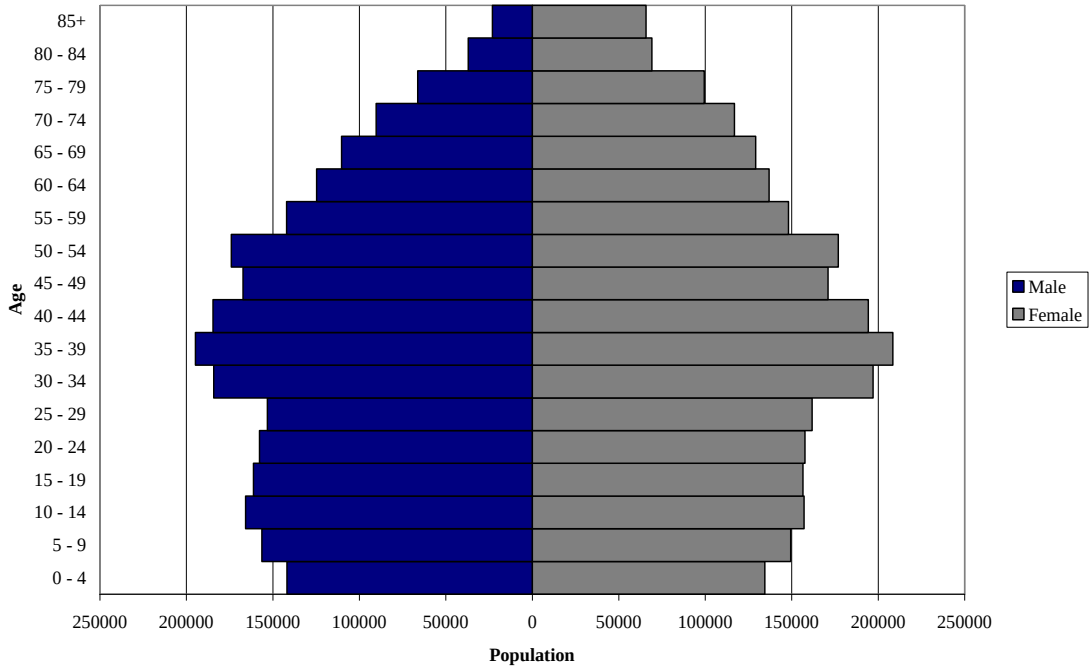
Source: Randall (2002)

Figure 2.6 Estimated Age Structure, Scotland, 1951



Source: Randall (2002)

Figure 2.7 Estimated Age Structure, Scotland, 2001

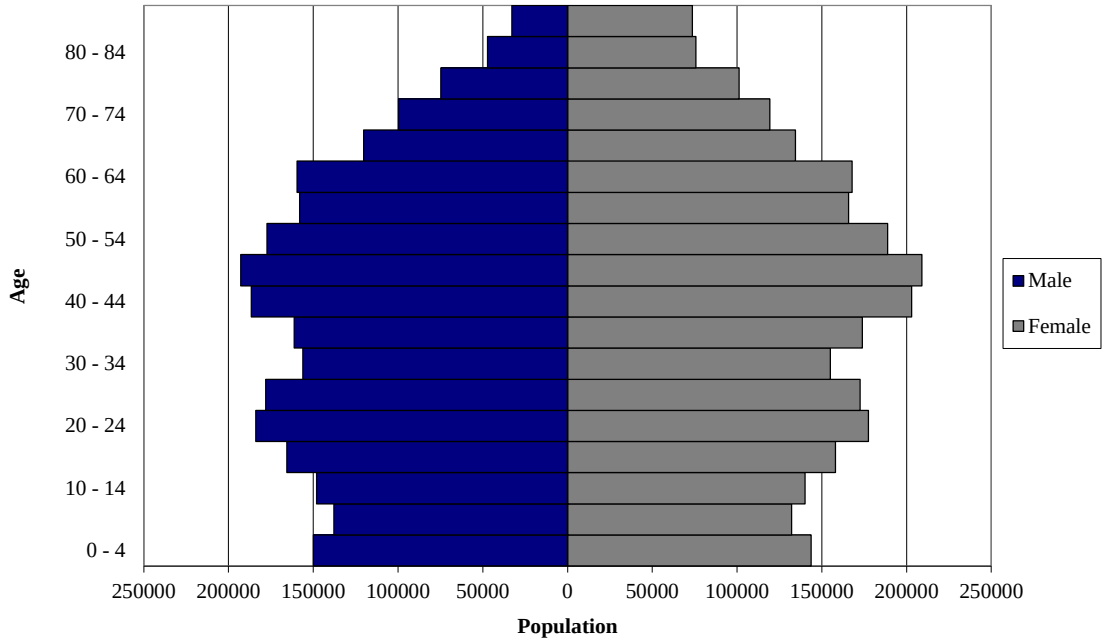


Source: Randall (2002)

By 2010, the age structure of Scotland, represented by the Figure 2.8, shows an increase in the bars at the base of the pyramid. This is a result of the recent break in

the long-term fertility trend since mid-2000. There is an observable reduction in the 5 to 9 year old age group and the 30 to 34 year old age group, because of the low fertility in the early 2000's and in the late 1970's respectively. There is also an increase in the 36–51 year old age group, this is the result of the 'baby boom' years of the 1940's and 1960's. At the top of the pyramid, there are a greater number of females than males because of the difference in life expectancy between the sexes. The pyramid that exhibits a narrower base than halfway up is evident of a declining population. While at the same time, the higher proportion of adults than children is also evident of a low fertility population. Scotland exhibits both.

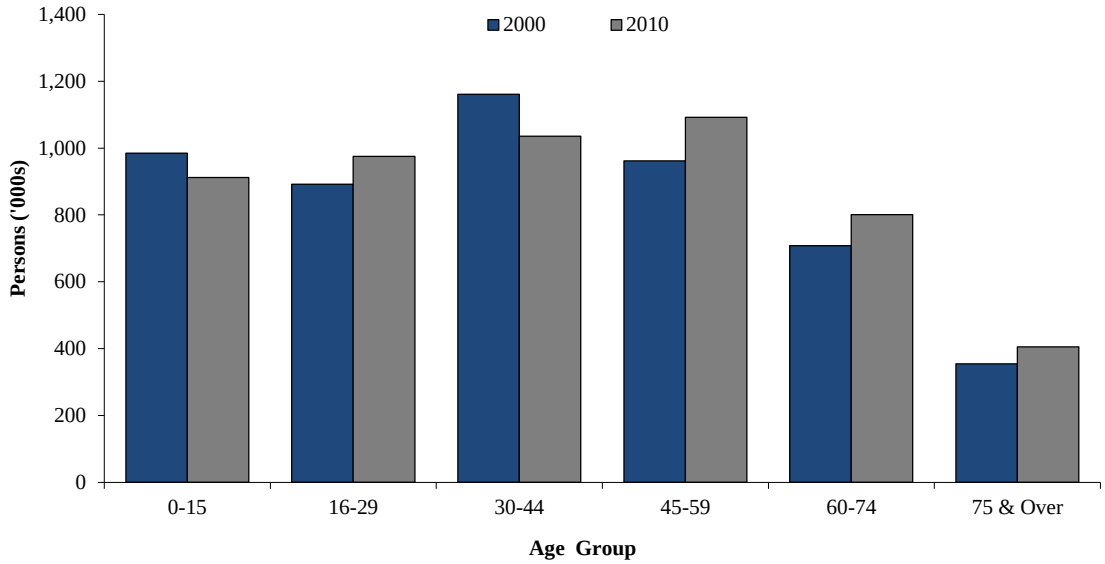
Figure 2.8 Estimated Age Structure, Scotland, 2010



Source: GROS (2011c)

Over the last decade, there have been significant changes in the age structure of Scotland, as shown in Figure 2.9. Despite recent increase in the birth level, the number of children in the population has still decreased (-7%) while at the same time the number of people within the pensionable age group has increased (+13% for 60–74 year olds and +14% increase in the 75+ year olds).

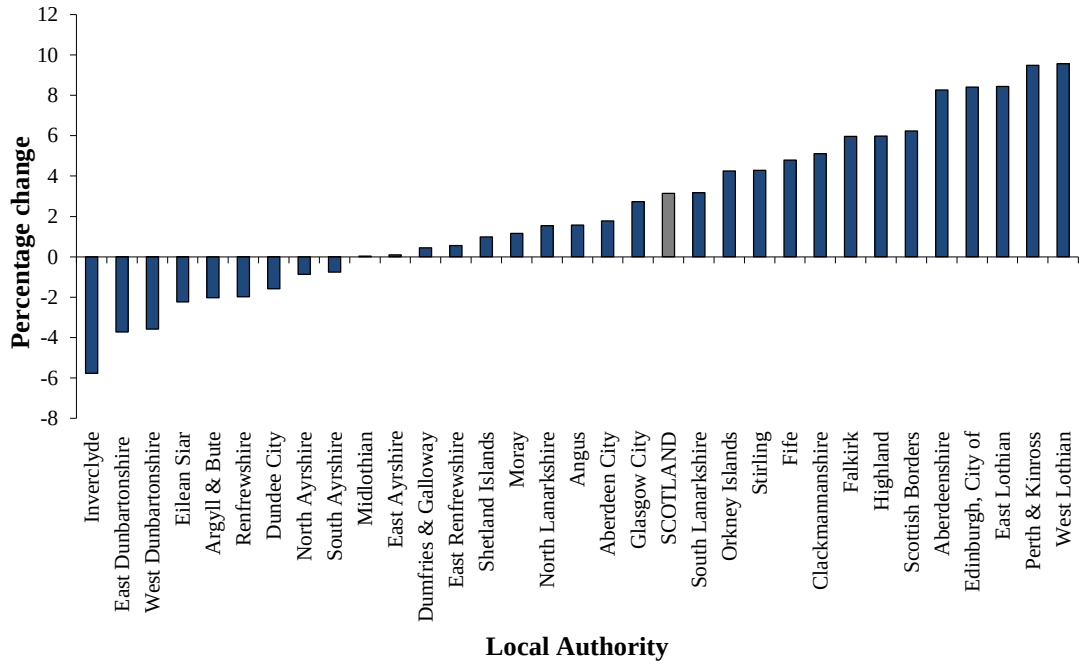
Figure 2.9 Comparison Age Structure, Scotland, 2000 and 2010



Source: GROS (2011c)

Figure 2.10 shows the comparison of the population by Local Authority between 2000 and 2010. Nine of the Local Authorities have experienced a drop in their population size over this period. The largest drop is found in Inverclyde and the largest population increase was found in West Lothian.

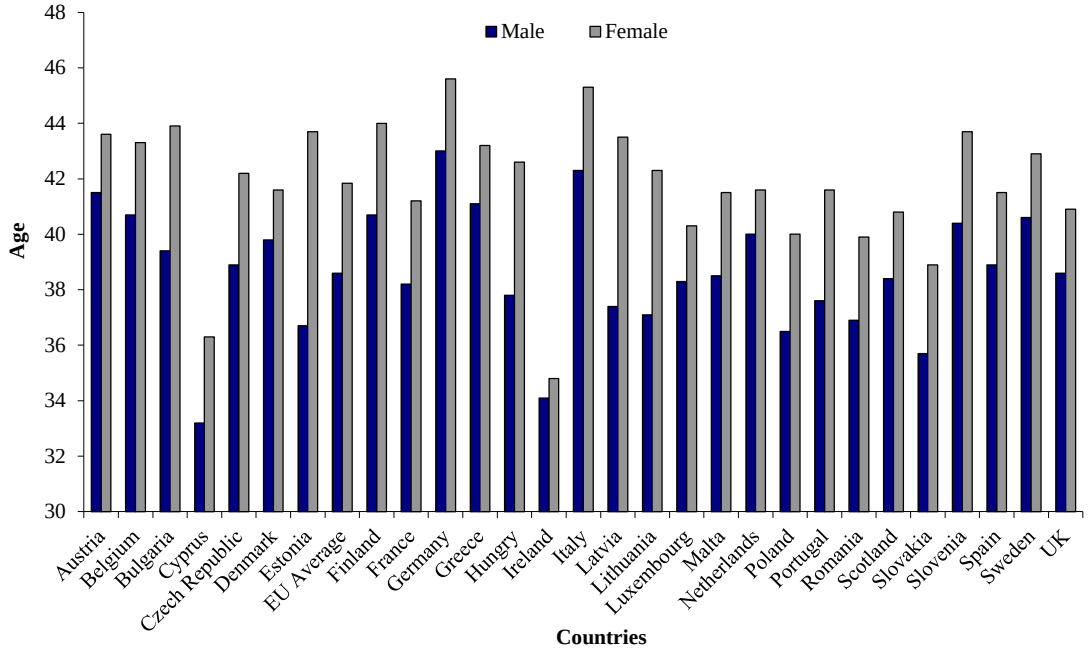
Figure 2.10 Comparison Population by Local Authority, Scotland, between 2000 and 2010



Source: GROS (2011c)

In Figure 2.11, the median age for Scotland and the median age for the EU-27 are compared. The median age in Scotland in 2010 was 39 years for males and 42 years for females. In comparison, the EU-27 average was 38.6 for males and 41.84 for females. This shows the Scottish average is slightly higher for both sexes. The Scottish median age is higher than the UK average for females (40.9 years) and slightly higher than the UK male (38.6 years). The oldest country for both males and females was Germany, followed closely by Italy. The youngest countries were Ireland and Cyprus for both males and females.

Figure 2.11 Median Age, Male and Female, EU-27 and Scotland, 2010



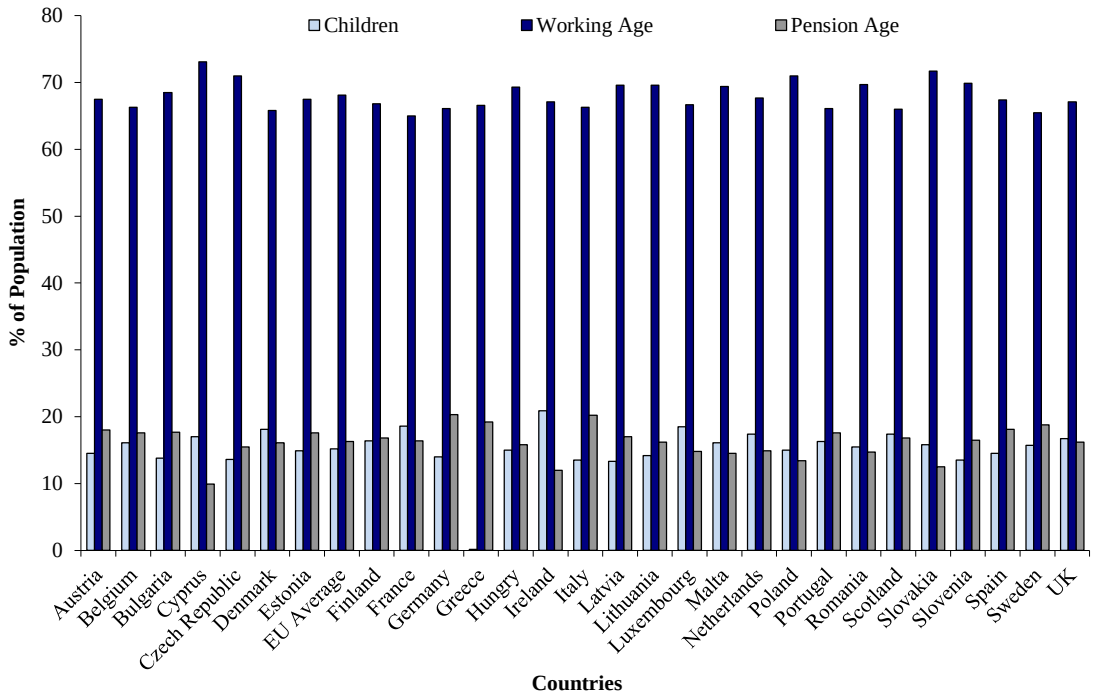
Source: CIA (2011) and GROS (2011c)

Examining the 2010 Scottish population further, the 5,222,100 total can be broken up into three economic groups, children (neontic), working-age population, and people of retirement age (gerontic). Both the children and the people of retirement age are dependent on the working-age population who are the potentially economically active group. Over the last decade, there has been a significant reduction in the number of children and a slight increase in the number of people of working age; also, there has been a significant increase in the number of people of pensionable age. According to the GROS (2011c), in 2000, the three groups were made up of 1,020,949 children (under 16 years of age) (or 20% of the population), 3,291,933 of

working age (16-64 years of age) (or 64.7% of the population) and 770,448 of pension age (65+ year olds) (or 15.1% of the population). In 2010, the three groups were made up of 911,794 children (or 17.4 % of the population), 3,430,841 of working age (or 65.7% of the population) and 879,492 of pension age (or 16.8% of the population).

Figure 2.12 shows a comparison between the Scottish and the EU-27 age structure. The population of the European Union in 2010, according to CIA (2011) was estimated to be around 492,387,344. This age structure was made up of the children at 15.4 per cent of the population (male 38,992,677 and female 36, 940,450), the working-age group at 67.2 per cent (male 166,412,403 and female 164,295,636) and the pensionable age group accounting for the remaining 17.3 per cent (male 35,376,333 and female 49,853,361). Scotland has a higher younger population and a slightly lower pensionable age population than the EU-27 average, but it also has the lowest working-age population of all the countries in the EU-27.

Figure 2.12 Comparison of the Age Structure, EU-27 and Scotland, 2010

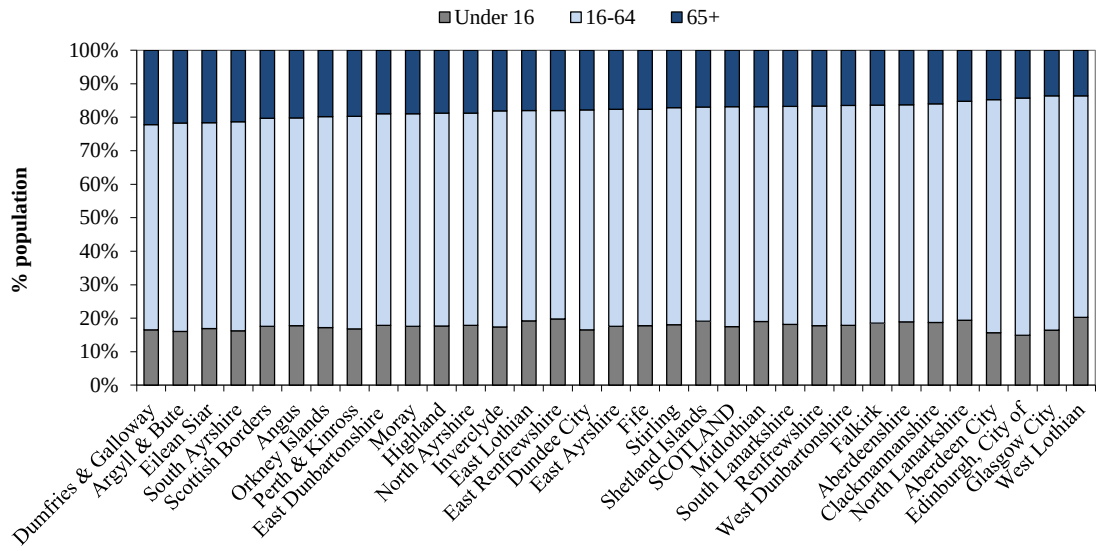


Source: CIA (2011) and GROS (2011c)

Figure 2.13 shows the current percentage age structure of Scotland by Local Authority, ranked by the 65+ age group. The largest amount of each age group is

found in Dumfries and Galloway for the older people with 22.2 per cent, Edinburgh for the working-age population with 70.8 per cent and West Lothian for the children with 20.3 per cent.

Figure 2.13 Current Percentage Age Structure by Local Authority, Ranked by 65+ Age Group, Scotland, 2010



Source: GROS (2011c)

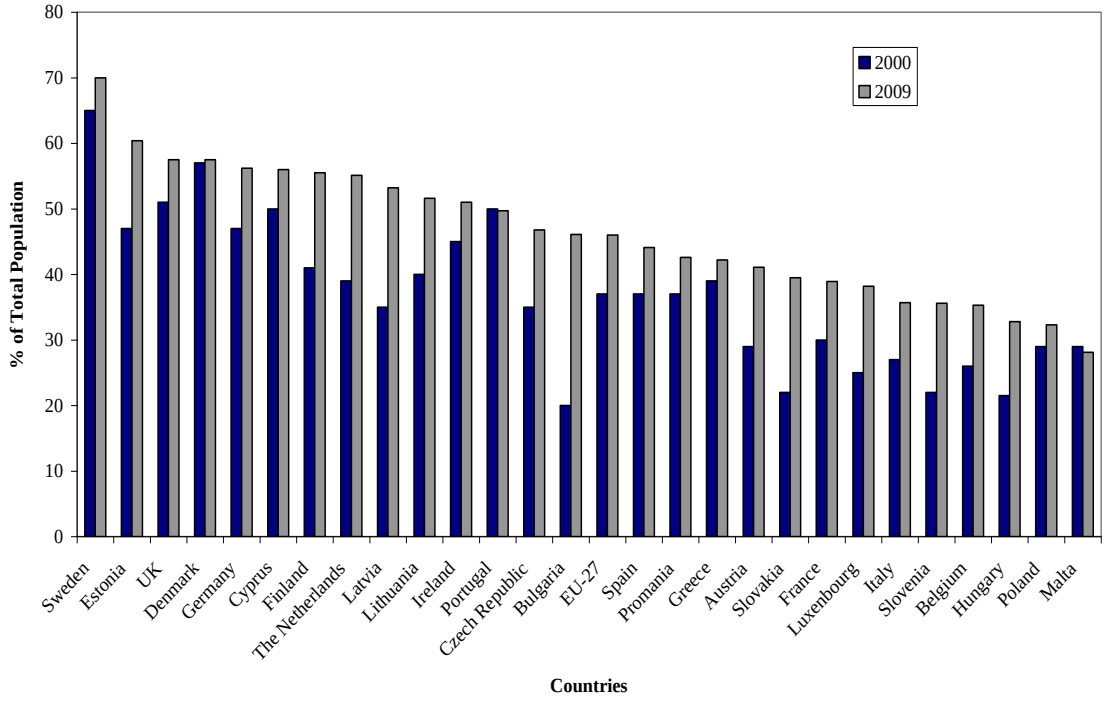
Figure 2.14 shows the age profile for the people of working age in Scotland and the EU-27. There are 70.8 per cent of older people (50–64 year olds) in employment in Scotland (ONS, 2010a). Scotland does have an ageing workforce but is not in isolation. The working-age profile of many of the EU-27 countries has also been ageing over the last decade. In 2001, the Stockholm European Council set a target[2] of 50% for a workforce between the ages of 55–64 years by 2010, to help achieve economic growth and greater society cohesion within the EU. According to the European Commission Report (2010), 11 countries out of the EU-27 had above 50 per cent of their workforce between the ages of 55–64 years

The country with the highest older workforce was Sweden (70% of the working population above 55 years old) and the one with the youngest working population

[2] Further to the Lisbon 2010 targets made by the 2000 Lisbon European Council

was Malta (28.5% of the working population above 55 years old). Józwiak et al (2008, p221) also found the working-age profile in Europe is currently ageing and declining, suggesting this will continue in the future, "...the shrinking and ageing of the working-age population, are unavoidable characteristics of the Europe of the future. The decline in the working-age population will already take place in most countries in 2005–2015, and will culminate around 2025–2035". Figure 2.14 shows that, employment rates for people aged 55–64 years have increased between 2000 and 2009 in all of the countries of the EU-27 but Malta, which experienced a decrease.

Figure 2.14 Employment Rates for Persons Aged 55–64, EU-27, 2000 and 2009



Source: European Commission (2010)

The next step is to examine the cause of the Scottish demographic changes, fertility, mortality, and net-migration.

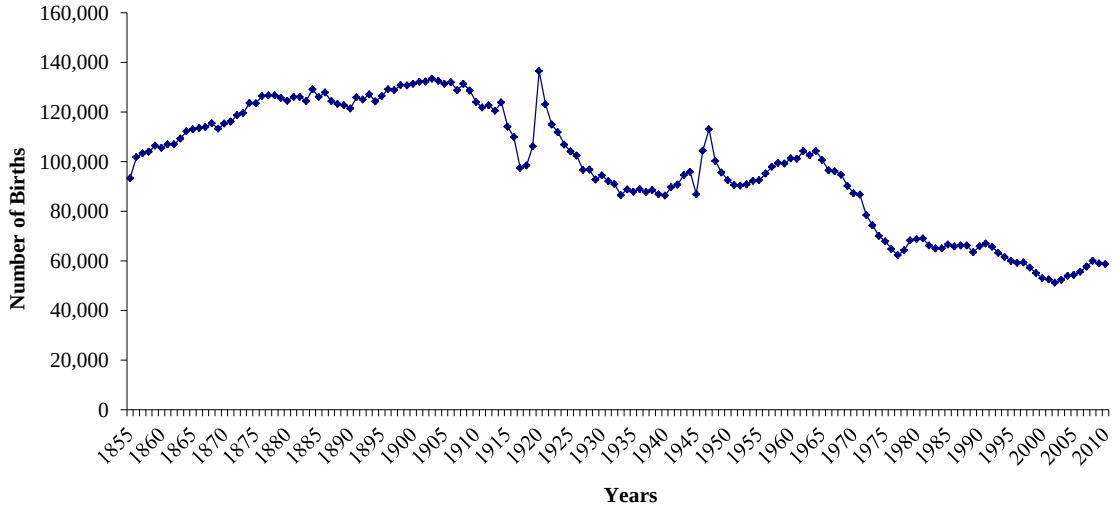
2.2.1 Fertility

Fertility deals with a woman's propensity to have children, which can include repeated events. These events are subject to a woman's choice in light of social, economic, and cultural factors (e.g., timing of the first child, financial implications

such as state benefits and the cost of bringing up a child, the work / life balance). Fertility is one of the most important components of demographic change as this determines not only a large part of the current size of the population, but in a generation's time, it determines the amount of women of childbearing age. The fertility rate also determines the future supply of working-age people and has an impact on the dependency ratio.

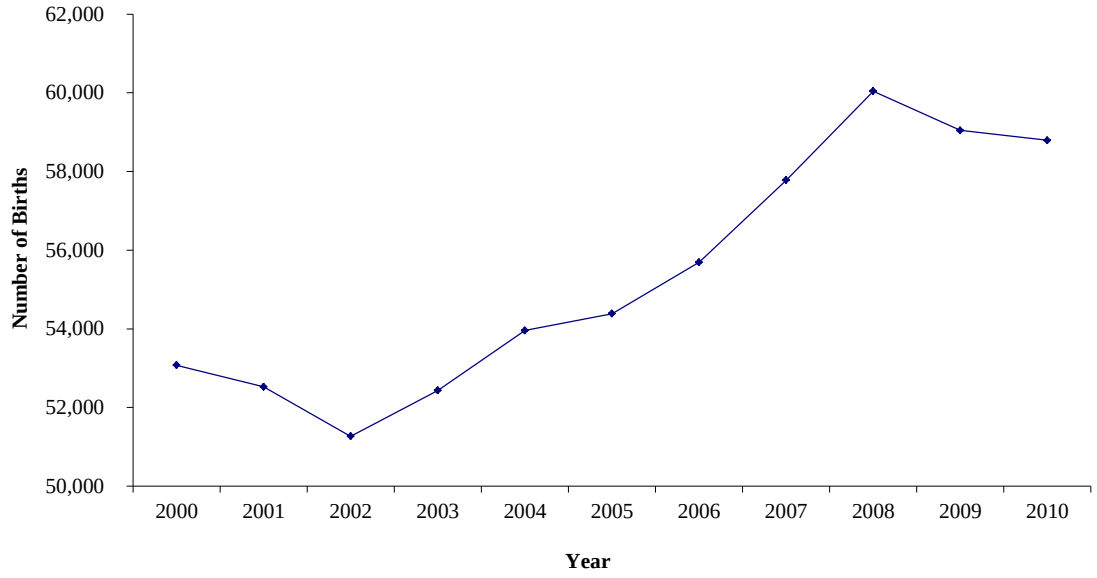
The birth level in Scotland has been one of long-term decline, as shown in Figure 2.15, although this is globally true. Since 1950, according to the UN (2002), the total fertility rate decreased globally by around a half, from 5.0 to 2.7 children per woman. The UN (2002, p.5) found that this will decrease further in the future, "Over the next half century, it is expected to drop to the replacement level of 2.1 children per women. Fertility is well below the replacement level in the more developed regions. Fertility decline in the less developed regions started later and has proceeded faster" UN (2002, p.5). In the shorter term, the birth level in Scotland has been increasing overall, as shown more clearly in Figure 2.16. In 2010, the number of births was 58,791, where non-Scottish born mothers account for 24 per cent, which is nearly double than in 1977 when the percentage was 13 per cent (GROS, 2011h).

Figure 2.15 Birth Level, Scotland, 1855–2010



Source: GROS (2011f)

Figure 2.16 Shorter Term Birth Level, Scotland, 2000–2010



Source: GROS (2011f)

In Scotland, the chance of females having children is considered to vary across the age span of 15–44 years (GROS, 2011f). The peak usually is around 25–31 years of age, and there is a rapid decrease in the last years (assumed to equal zero at age 45 years). As a result, examining the age-specific fertility rate (ASFR) is important. Age-specific fertility rates (f_x) for women aged *x* last birthday can be defined by an *m*-type rate, where births in year *t* to women aged *x* last birthday at the time of birth (B_x) is then divided by the mid year population of women aged *x* last birthday (P^f_x), as follows:

$$f_x = \frac{B_x}{P_x^f} \qquad [2.2]$$

It can also be defined as a *q*-type rate, where the number of births to women aged between exact ages *x* and *x* + 1 (B_x) is divided by the number of women reaching exact age *x* ($P^f_x + 1/2\ \theta^f_x$, where θ^f_x is the number of deaths between exact ages *x* and *x* + 1 occurring to women), as follows:

$$f_x = \frac{B_x}{P_x^f + \frac{1}{2}\theta_x^f} \qquad [2.3]$$

By assuming no mortality between the ages of 15–45 years (exact childbearing years), which is usually extremely low, both m and q rates are the same. The rate measures the number of children an average women has between her *x*th and (x + 1) birthdays.

The total fertility rate can be calculated by summing up the age-specific fertility rates over the entire span of childbearing age (e.g., a woman from her 15th to her 45th birthday). We can express the number of children she has between her 15th and 16th birthday as equal to f_{15} and so on, until we get the number of children a women would finally end up having, on the condition she is alive until 45 year old. This sum is referred to as the total fertility rate and is expressed as:

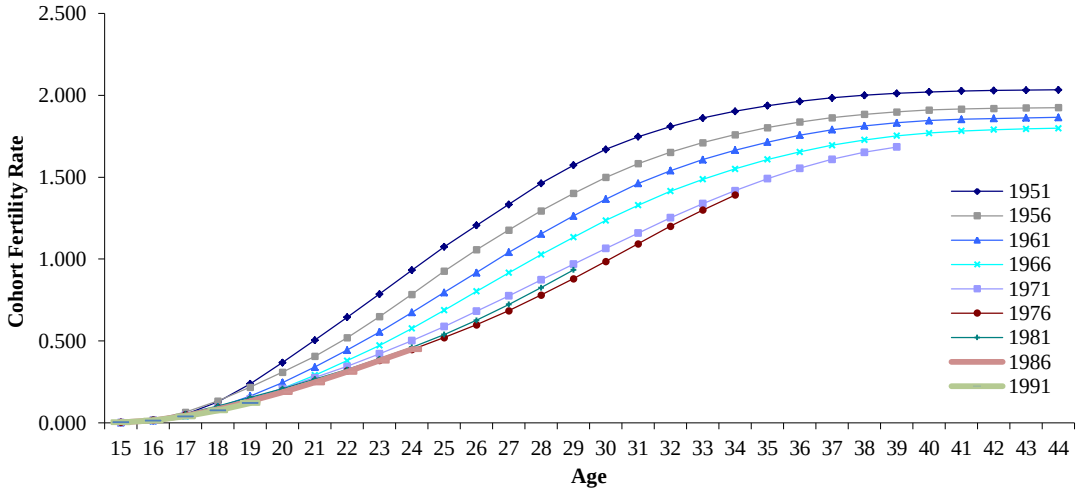
$$TFR = \sum_{x=15}^{44} f_x \qquad [2.4]$$

TFR is an indicator of the number of children that could be born to a woman over her childbearing period if the fertility rate in each age group was to remain unchanged. The total fertility rate is used to measure the level of fertility. This can be distorted by shifts in the timing of childbearing years as it is based on one year's events. It does not take account of the fact that women in Scotland are having children in later life for example; therefore, by underestimating this amount, the total fertility rate can miscount the number of children a woman will eventually have. The total fertility rate can be calculated in two ways. As with mortality measurements, fertility can also be analysed from a period perspective (births in a particular period based on total fertility rate). This is a theoretical number so it does not apply to the actual experience of women. There is also the cohort approach (births to a group of women born during a specific period based on completed fertility rate), a perspective where the cohort total fertility rate can only be calculated when all surviving women in the birth cohort have reached the end of their childbearing years.

The cohort approach is more representative of what 'real' women experience. The cohort total fertility rate shows the completed fertility rate and it is not warped by temporary period events, as it uses data from a long period; therefore, it is not possible to have up-to-date cohort total fertility rates. The completed fertility rate

(average number of children born to women from a specific cohort group) for Scotland, shown in Figure 2.17, reveals that women who were born in 1951 had achieved a completed family size of 2.03 on average, decreasing to a family size of 1.87 for women who were born in 1961. By examining the number of children a woman has at specific ages by different birth cohorts, it was found that overall, family sizes have been decreasing at all birth cohort periods. In 1951, at the age of 26 years old, an average family size was 1.20 and by 1981, the family size at the same age was almost half, at an average of 0.62. Although the 0.62 only reflects what has happened to date and it is unknown what will happen in the future until their 45th birthday, it would appear unrealistic to expect them to catch up.

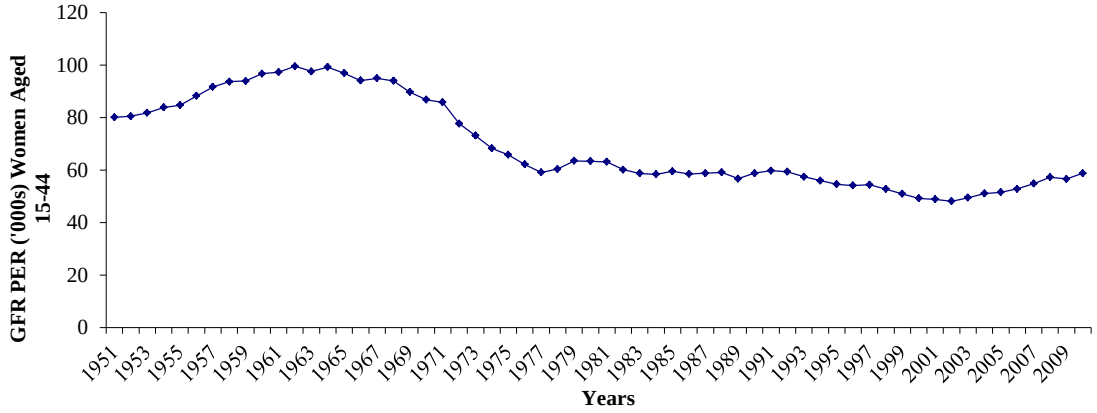
Figure 2.17 Estimated and Projected Cohort Fertility Rate for Selected Birth Cohorts, Scotland, 1951–2010



Source: GROS (2011f)

In the period approach, there are several ways to measure fertility rates, one of the simplest being the general fertility rate (GFR). This takes the total number of births in a year and divides it by the population of women of childbearing age (aged last birthday). This figure is then scaled up, reflecting the fact the general fertility rate is relatively small; therefore, it is usually multiplied by 1,000 to give the number of births per 1,000 women, aged 15–44 years. The general fertility rate in Figure 2.18 shows that in Scotland, there was a peak during the early 1960's (baby boom period), followed by a sharp decreasing trend from the 1970's, a steady decrease during the 1980–1990's and an increase in recent years.

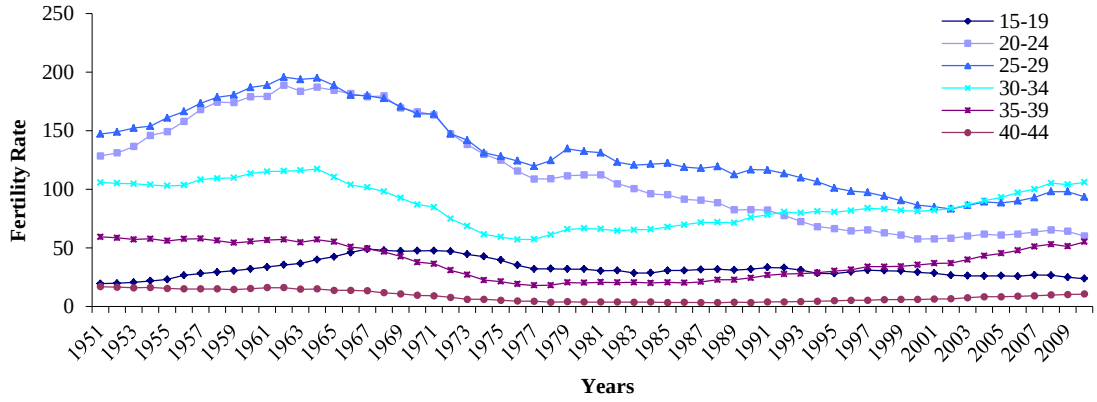
Figure 2.18 General Fertility Rate, Scotland, 1951–2010



Source: GROS (2011f)

Figure 2.19 shows the age-specific fertility rates by five-year age groups of mother's age, from 1951 to 2010. This shows that, for the 15–19 year old group of mothers, the fertility rate has a high in the late 1960's and shows an overall decrease thereafter. Both the 20–24 and 25–29 year age groups show a high rate during the early 1960's then a sharp decrease until the late 1970's, followed by a more moderate decreasing trend. For the 30–34 and 35–39 year age groups, there is also a decline from the high in the early 1960's until the early 1980's followed by an increase in the fertility rate. Finally, the 40–44 age group of mothers shows a steady and slow decline until the late 1980's, followed by a steady and slow increase.

Figure 2.19 Age-specific Fertility Rate per 1,000 Women, by Age of Mother, Scotland, 1951–2010

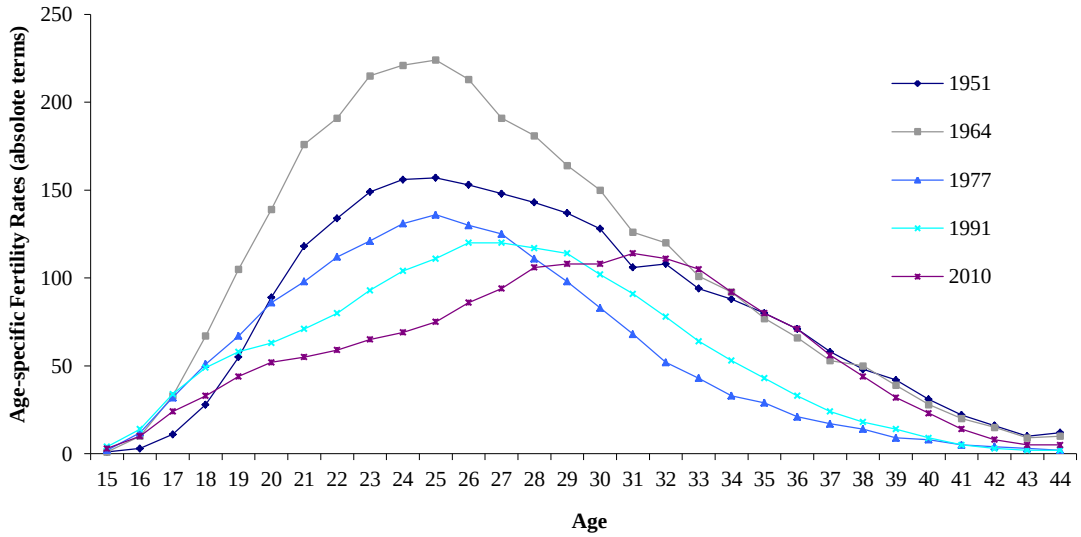


Source: GROS (2011f)

By taking an example of selected years, this shows in detail the shifting patterns in peak ages of mothers. Figure 2.20 shows the age-specific fertility rates by age of

mother for five different years. Although all years exhibit an inverted U shape where the rates are low at the edges (beginning 15–19 and ending 40–44), it is more interesting to note the peak age changes through time. From 1951 to 1977, the peak age of a mother was at 25 year old. By 1991, this peak age increased to 26–27 years of age and by 2010, it further increased to 31 years old. This highlights the fact that women in Scotland are choosing to have their children at later stages in their life.

Figure 2.20 Age-specific Fertility Rates per 1,000 Women, Scotland, selected years (1951, 1964, 1977, 1991, and 2010)



Source: GROS (2011f)

The total fertility rate cannot be broken down by birth order for Scotland, as the GROS does not collect complete information by birth order. For historical reasons, the question on number of previous births is only asked of married mothers, and even then, the GROS only asks them to count births to their current husband or to a previous one. Table 2.1 shows the single-year age-specific and total fertility rate (TFR) for Scotland in 2010. This takes the average number of children that theoretically could be born to a cohort of females over their lifetime, given the exact fertility rates of the calendar year being investigated (on the assumption of her survival during the childbearing period); therefore, the TFR is the sum of the ASFR at each age divided by 1,000.

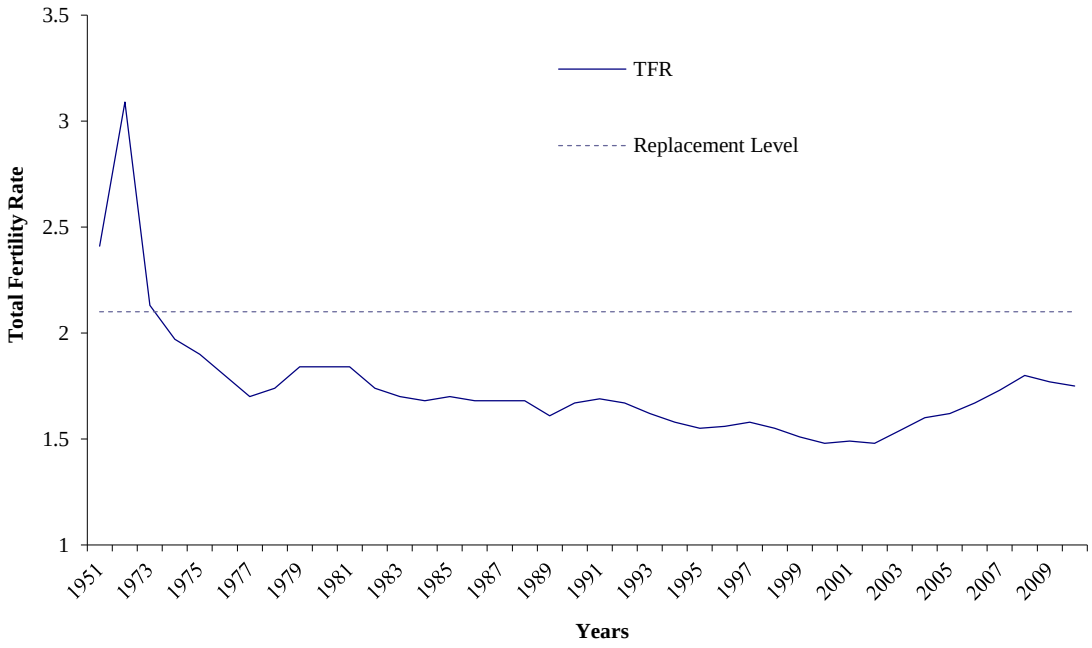
Table 2.1 Single-Year Age-Specific and Total Fertility Rates, Scotland, 2010

Age of Mother	***Age-specific fertility rate (per 1,000 women)***
15	0.003
16	0.010
17	0.024
18	0.033
19	0.044
20	0.052
21	0.055
22	0.059
23	0.065
24	0.069
25	0.075
26	0.086
27	0.094
28	0.106
29	0.108
30	0.108
31	0.114
32	0.111
33	0.105
34	0.092
35	0.080
36	0.071
37	0.056
38	0.044
39	0.032
40	0.023
41	0.014
42	0.008
43	0.005
44	0.005
$TFR_{2008} = \frac{\sum_{x=15}^{44} ASFR_{x,2008}}{1{,}000}$	***1.75***

Source: GROS (2011f)

The Organisation for Economic Co-operation and Development finds the replacement level for industrialised countries to be around 2.10, when assuming no net-migration and unchanged mortality rates. Figure 2.21 shows the TFR for Scotland has decreased from a previous high of 3.2 in 1965 to its 2010 level of 1.75. The fertility rate has been below the replacement level of 2.10 since the mid 1970's, and is now around 20 per cent lower.

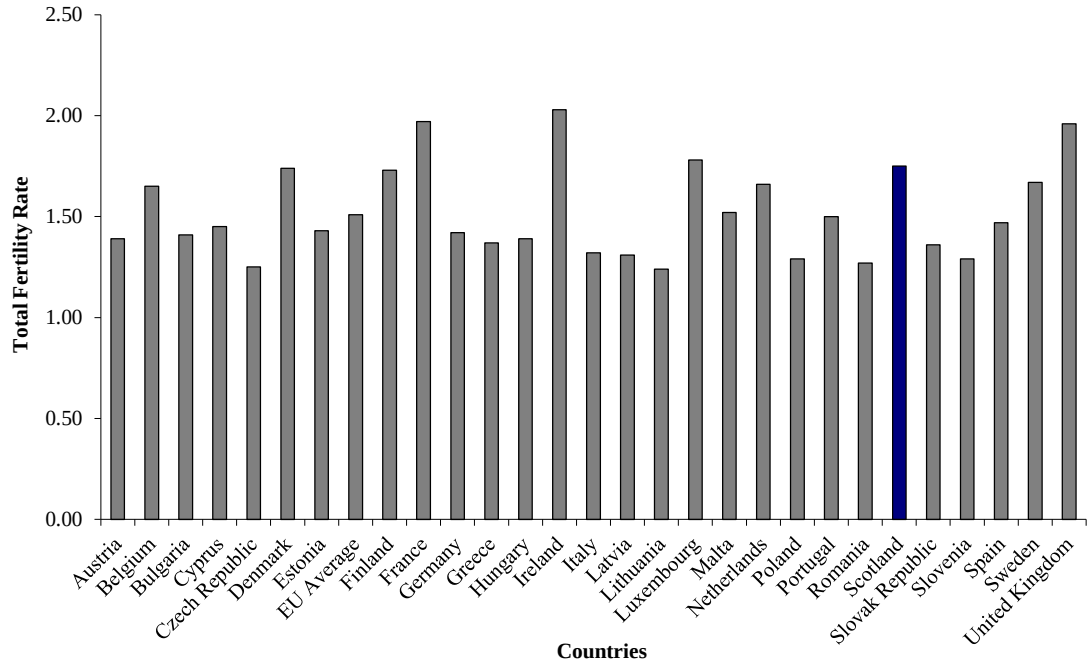
Figure 2.21 Total Fertility Rate, Scotland, 1951–2010



Source: GROS (2011f)

When comparing the total fertility rate of Scotland of 1.75 for 2010 to that of the EU-27 countries, the results show Scotland was above the EU-27 average of 1.51, with only Ireland, France UK and Luxembourg having rates above that of Scotland (2.07, 1.96, 1.98 and 1.78 respectively), as Figure 2.22 shows.

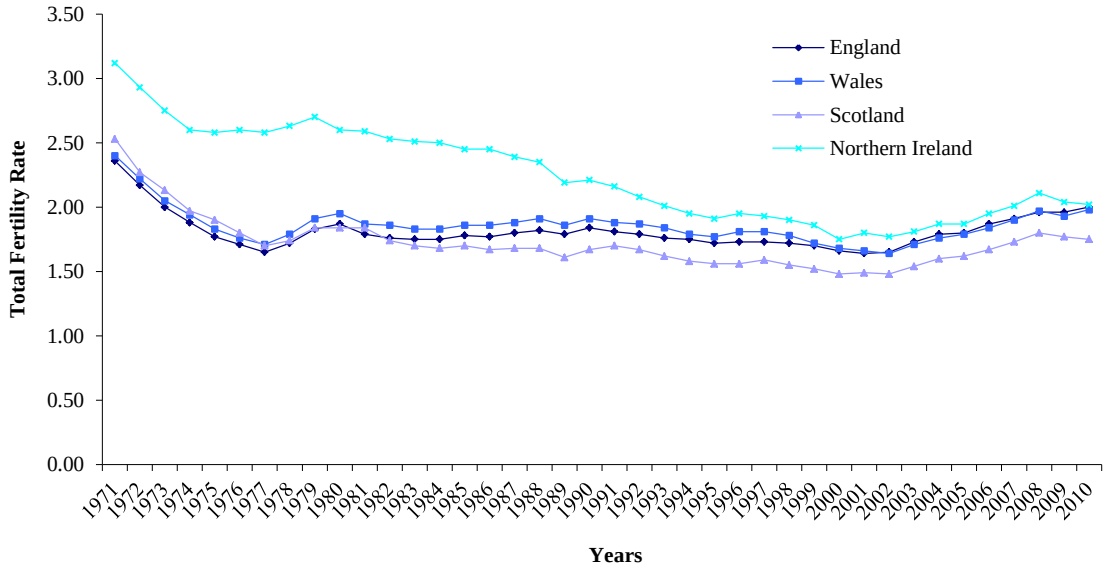
Figure 2.22 Total Fertility Rate, EU-27 and Scotland, 2010



Source: CIA (2011) and GROS (2001f)

Breaking down the constitute countries of the UK for 2010, the results show that Scotland has the lowest total fertility rate (Scotland 1.75, England 2.0, Wales 1.98 and Ireland 2.07) and this has been evident over a long period of time, as Figure 2.23 shows, with Northern Ireland currently and historically exhibiting the highest total fertility rate.

Figure 2.23 Total Fertility Rate, UK Countries, 1971–2010



Source: ONS (2011)

2.2.2 Mortality

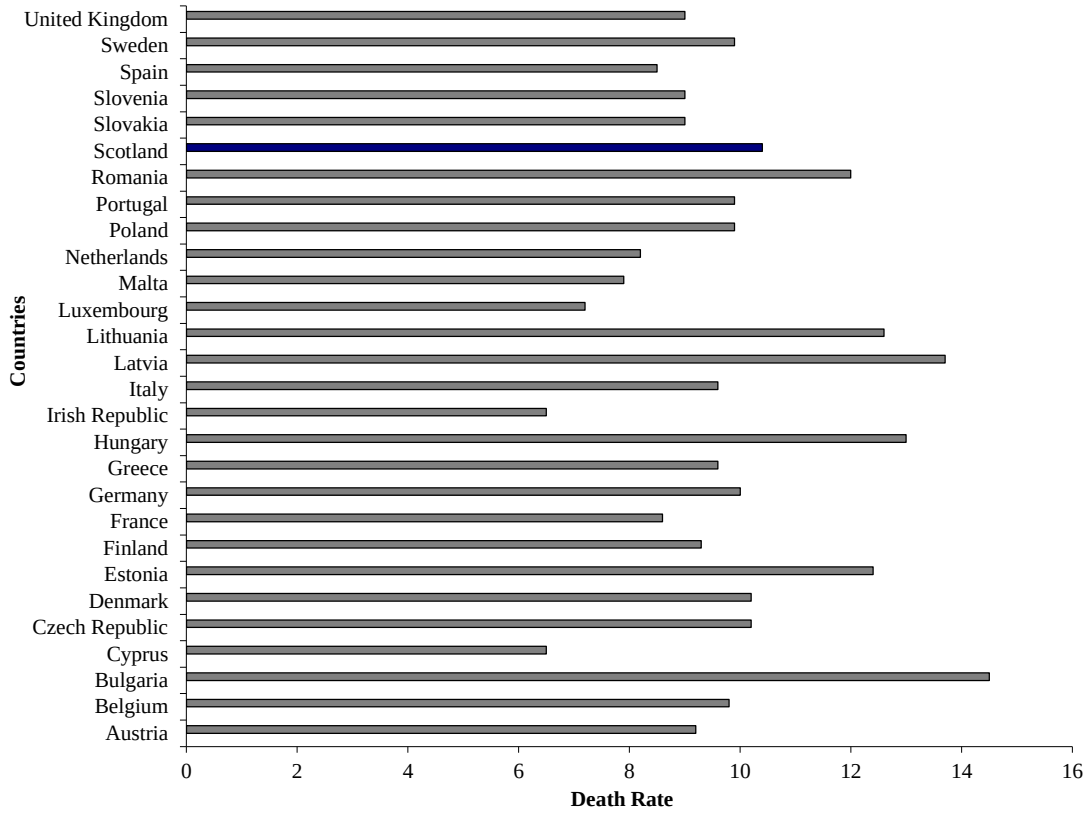
Statistics, not only from Scotland but also for the UK and the European Union, will be examined in order to gain an insight of how the domestic and external environment Scottish mortality is set. There are many methods used to study mortality, one of the simplest measures is the crude death rate. This is a general indicator (or index) that measures the mortality rate by using the total number of deaths per year (θ_t) and then divides this by the total mid-year population P_t (or person-years at risk) the mid-year date in Scotland is on the 30th June. Resulting in the crude death rate (d_t) expressed as:

$d_t = \frac{\theta_t}{P_t}$ or scaled up to $d_t = \frac{\theta_t}{P_t} \times 1{,}000$ (where, the 1,000 represents the number of deaths per thousand of the population). [2.5]

In examining the crude death rate in the EU, the UK and Scotland allows a general geographical comparison to be made. What the crude death rate does not do is to measure the actual mortality risk, and does not allow an investigation of the scale of the death rate as it varies greatly with age. This can be an issue, as countries vary in their population age structure because of their history of death, net-migration, and birth levels. The crude death rate is influenced greatly by the person-years at risk.

Figure 2.24 shows in 2010, only six countries had a higher death rate than Scotland (10.4 per 1,000 of the population) out of the EU-27. These six countries are Bulgaria (14.5 per 1,000), Latvia (13.7 per 1,000) Hungary (13 per 1,000), Lithuania (12.6 per 1,000), Estonia (12.4 per 1,000), and Romania (12 per 1,000). These countries only recently became part of the EU and if they had not joined, Scotland would then be at the top. This is a pattern that has been repeated for a number of years, "Scotland's position relative to the UK and EU-27 average Figures is not improving and has worsened over the past 5 years" GROS (2010a, p.1).

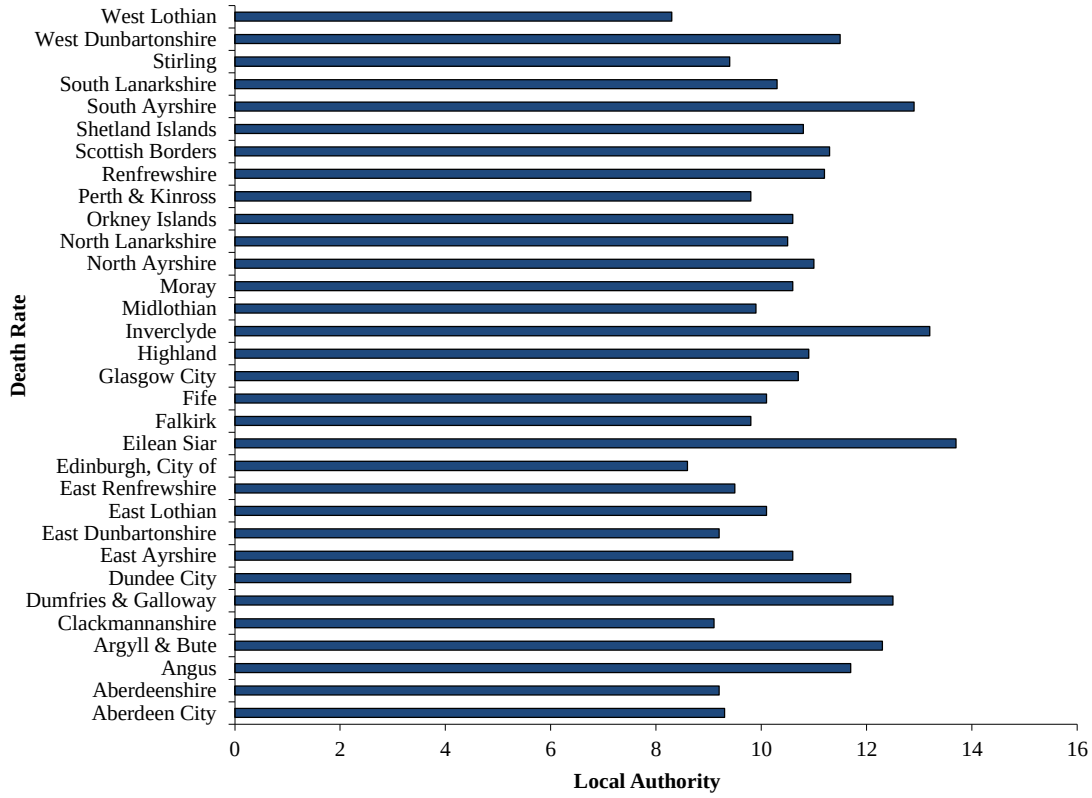
Figure 2.24 Crude Death Rate per 1,000 Population, EU-27 and Scotland, 2010



Source: GROS (2011c)

Figure 2.25 shows the crude death rate for Scotland in 2010, broken down by Local Authorities. Most deaths occurred within the local authority area of Eilean Siar at a rate of 13.7 per 1,000 population and the least number of deaths occurred in the local authority area of West Lothian at a rate of 8.3 per 1,000 population.

Figure 2.25 Crude Death Rate per 1,000 Population by Local Authority, Scotland, 2010



Source: GROS (2011c)

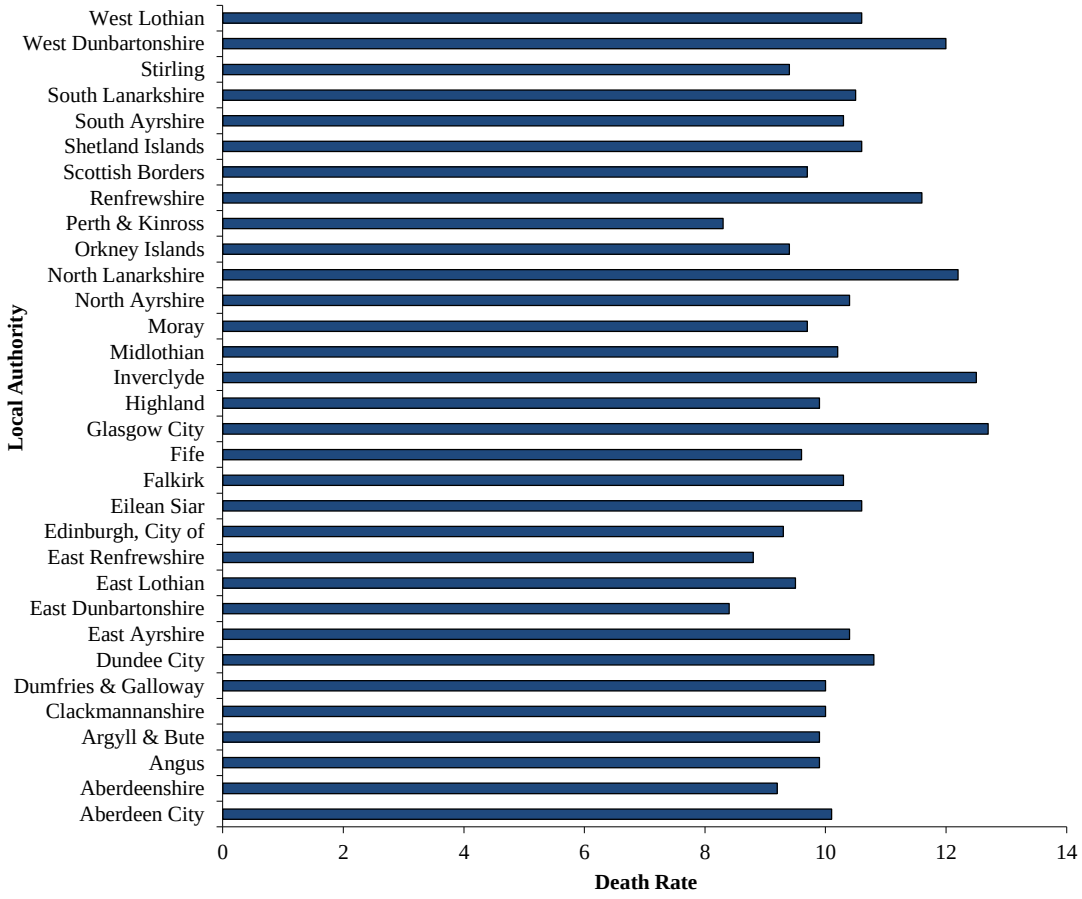
A more accurate measure to use is the standardised death rate, as the number of death of a population varies by an individual's sex and age. This measure helps to compare independently of different age structures of populations between groups at different times by using a standardised death rate. An example of such is the Local Authority age structure being compared to Scotland as a whole. This rate basically takes the total expected number of deaths in the standard age structure and then divides this by the total standard population (or can also be seen as a weighted average of the Local Authority age-specific rates, for example, using the standard population structure as weights).

The standardised death rate can be expressed as:

$$A = \frac{\sum_x ({}^{A}M_x \, {}^{S}P_x)}{\sum_x {}^{S}P_x} \qquad [2.6]$$

where the ${}^{A}m_x$ is the m-type age-specific mortality rates at age *x* last birthday in a population *A.* The population exposed to risk of death, taken from some standard population *S,* letting the population exposed to the risk of death at age *x* last birthday in this standard population to be denoted as ${}^{S}P_x$. The standardised death rate for Scotland as a whole was 10.3 deaths per 1,000 populations in 2010. Figure 2.26 shows the death rate standardised by differences in sex and age, by Local Authority. The highest death rates in Scotland are currently found in Glasgow (12.7) and Inverclyde (12.5), and the lowest in Perth & Kinross (8.3) and East Dunbartonshire (8.4)

Figure 2.26 Standardised Death Rate by Local Authority, Scotland, 2010

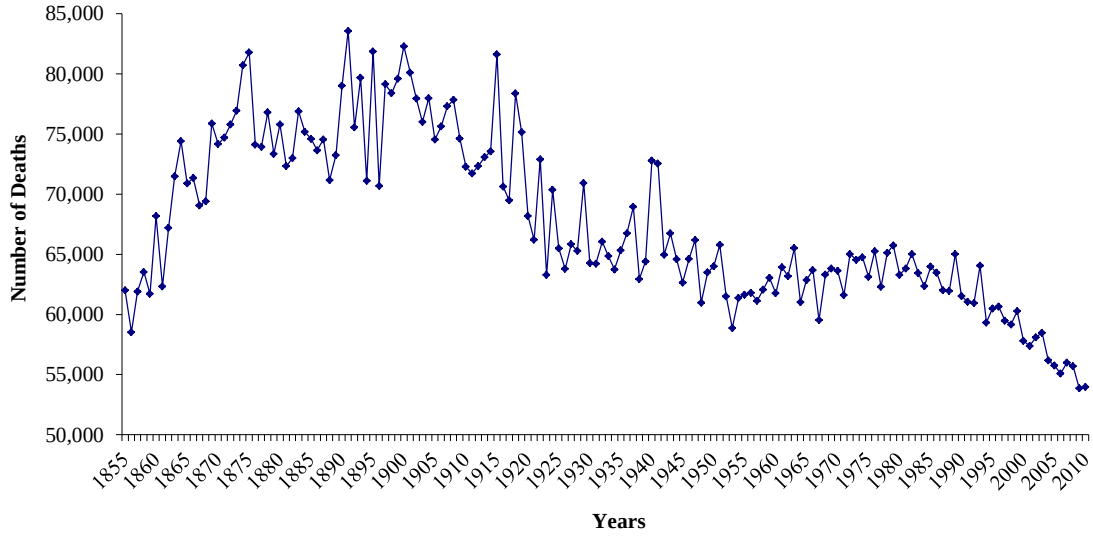


Source: GROS (2011c)

Examining the number of deaths in Scotland over the long-term, Figure 2.27 shows the total number of deaths from 1855 to 2010 has decreased overall, coming back from a high of over 80,000 around the end of the 19th century, and substantially decreasing since the last two decades. Figure 2.28 shows in more detail the recent

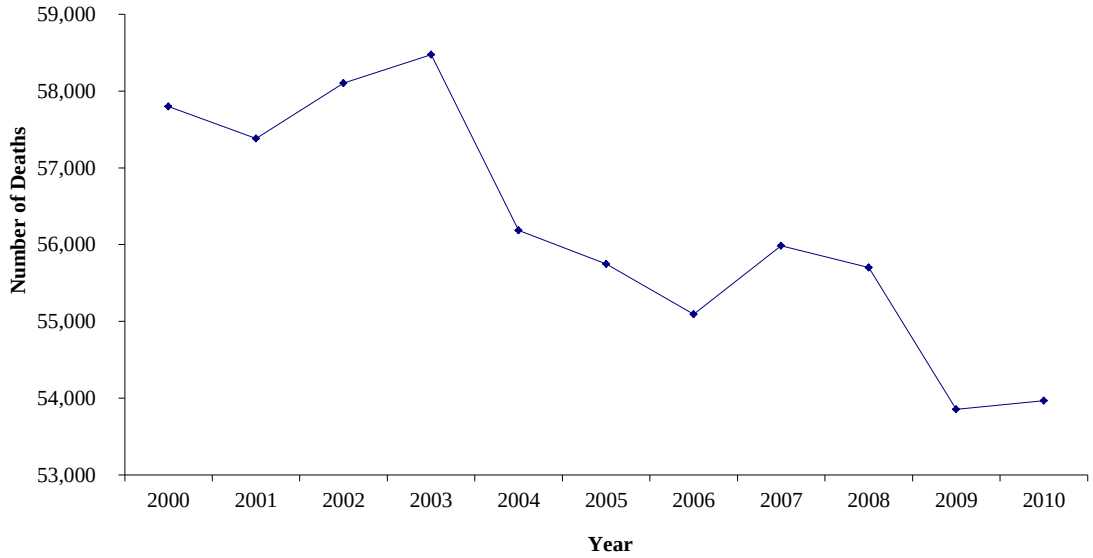
number of deaths in Scotland over the last decade. The number has reduced substantially over the period. In 2010, the number of deaths was 53,967, which is the lowest ever recorded since 1855. Within the total deaths, around 19 per cent of all deaths were found in the 65 and 74-year-old age group and around a further 60 per cent of all deaths were accounted for by the 75+ year olds (GROS, 2011c).

Figure 2.27 Number of Deaths, Scotland, 1855–2010



Source: GROS (2011c)

Figure 2.28 Number of Deaths, Scotland, 2000–2010



Source: GROS (2011c)

The life tables, first developed in the 17th century by John Graunt, are a valuable tool when investigating mortality rates. Lancaster (1990, p.38) explains life tables as "…a

mathematical model giving the survivorship l_x in a population subject to a schedule of mortality rates, (m_x) experiences throughout life". Further, Hinde (2007, p.30) says the life table is "…a convenient way of summarising various aspects of the variation of mortality with age…it is derived by following a birth cohort of persons through life and tabulating the proportion still alive at various ages". As the risk of dying varies greatly with age, a better measurement is to use the age-specific mortality rate (ASMR) to investigate in more detail the mortality rate in Scotland. There are two types of age-specific mortality rates that demographers traditionally use, both are found in the life table (ONS, 2010c).

The first is the central rate (m_x) (or m-type rate or period approach) that is named because the exposed-to-risk is an approximation of the number of people aged *x* last birthday at the time when the event took place; therefore, the average age of the person is *x* + 1/2 years. It is based on specific calendar period, where the age-specific mortality rate at age x years last birthday (m_x) is equal to the number of deaths, people aged *x* last birthday (θ_x), divided by the number of people who are aged x years last birthday (P_x). The following formula can be used:

$m_x = \frac{\theta_x}{P_x}$ or scaled up to $m_x = \frac{\theta_x}{P_x} \times 1{,}000$ (where the 1,000 represents the number of deaths per thousand of the population) [2.7]

The advantage of this approach is its ease of calculation and data is usually assessable. The disadvantage is that it does not result in a reflection of the experience of a real group of people. In addition, this approach examines rates where the denominator is a mid-year population and the numerator is the number of deaths during all the calendar year. This violates the principle of correspondence, for example, if a person is included in the exposed-to-risk in the denominator and they experience the event during the relevant time period, then that event involving them must be included in the numerator also. If a person dies in the relevant year but this happens to take place before the 30th June, they will not be alive on that date; therefore this person is not accounted for in the mid-year population but will be included in the numerator. Further, if a person has its birthday on the 10th of September, dies on the 12th of November and is aged *x* years on his last birthday on

the 30th June, then, when he dies, he will be aged $x + 1$ years on his last birthday and be counted in the denominator of the age-specific rate at age x last birthday, but his death will be accounted for in the numerator of the age-specific rate at age $x + 1$ last birthday. This can be limited by using the mid-year population as an estimate of the proper exposed time.

The second type of age-specific mortality rate, according to the ONS (2010c), is the initial rate (q_x) (or q-type rate or cohort approach), this is the exposed-to-risk set at the beginning. The q_x is the mortality rate between age x and ($x + 1$), which is the probability a person aged x exact, will die prior to reaching age ($x + 1$). This approach is based on the experience of a specific group of people who are born during a specific calendar period. This works by finding the number of people who have their xth birthday within a certain period and then following these people until they either die or celebrate their next birthday. Dividing the number of people that have died by the original figure having their xth birthday, will give the age-specific mortality rate at age x that is a true reflection of the experience of real people. Although this approach does not violate the principle of correspondence, it can overestimate the length of the time exposed to the risk for all the people who die and can be difficult to calculate.

The q-type and m-type mortality rates are related to one another as long as deaths are uniformly distributed across each single year of age (certain groups cannot be evenly distributed, e.g., for the first year of life and particularly the first four weeks known as the neonatal death rate), and that mortality does not vary with calendar time, only with age. q_x can be worked out from m_x by using the following formula to approximate the q-type rates:

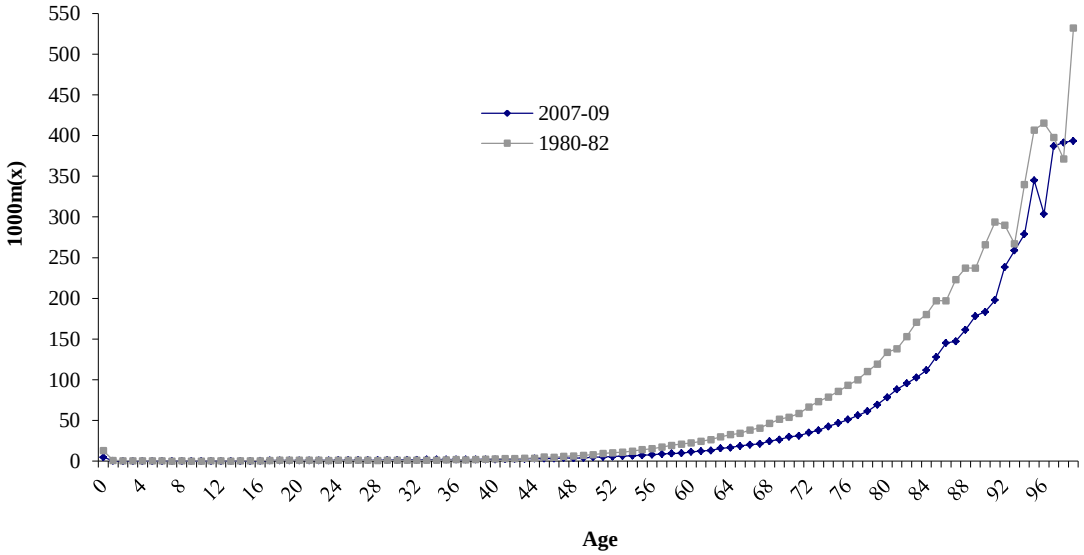
$$q_x = \frac{2m_x}{2 + m_x} \qquad [2.8]$$

Using the m_x age-specific mortality rate per 1,000 of the population in Figures 2.29 and 2.30 there has been a considerable drop in the number of deaths at age x last birthday for both males and females over almost three decades in Scotland, up until

2007–2009. Both figures show a pattern, with death rates rising considerably as the years of age increase.

For males, both trends in the two periods are slightly higher at age year 0. In 1980–1982, this figure was over twice as high than in 2007–2009 (12.9 compared to 4.8). Both trends have relatively low rates, between 0 and about 1, from the one year olds to around the late thirties, and increase quickly from fifty years with an expediential increase from the mid-seventies to ninety-nine years old. The 2007–2009 shows a large drop in the age-specific mortality rate from 1980–1982.

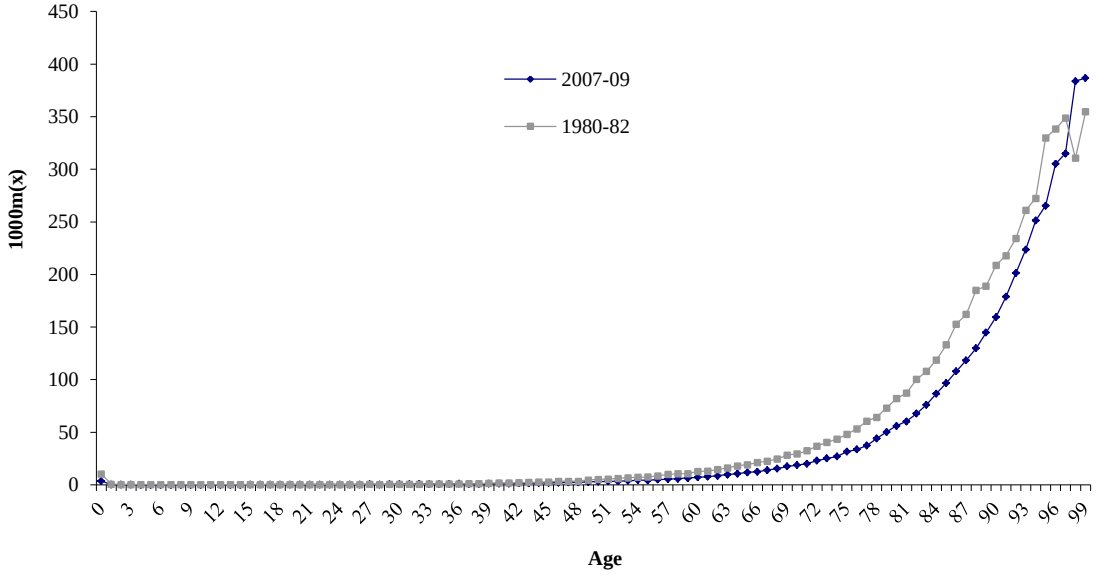
Figure 2.29 Age-Specific Mortality Rates, Male, Scotland, 1980–1982 and 2007–2009



Source: ONS (2010c)

For the Scottish females, in the same two time periods, the shape of the curve is almost the same, with both periods having a slightly higher beginning with age zero (10.2 in 1980–1982 and 3.7 in 2007–2009) and an extremely high end (354.7 in 1980–1982 and 386.7 in 2007–2009). Both trends have relative low rates of around 1 from the one year olds to the mid-forties, and increase quickly from fifty years with an expediential increase from the mid-seventies to ninety-nine years old; again, as with the males, there is still a drop in the age-specific mortality rate from 1980–1982 to 2007–2009. There is not as wide a gap as for the males and there actually is an increase in the death rate in the last two age groups.

Figure 2.30 Age-Specific Mortality Rates, Female, Scotland, 1980–1982 and 2007–2009



Source: ONS (2010c)

Corresponding to age-specific mortality rate is the survival function, the variable 'length of life' can be any value between 0 years ($S_{(0)} = 1$) and roughly 120 years ($S_{(120)} \approx 0$). This distribution can be explained using a survival function that is basically the proportion of the l_0 birth cohorts who survive to exact age x expressed as:

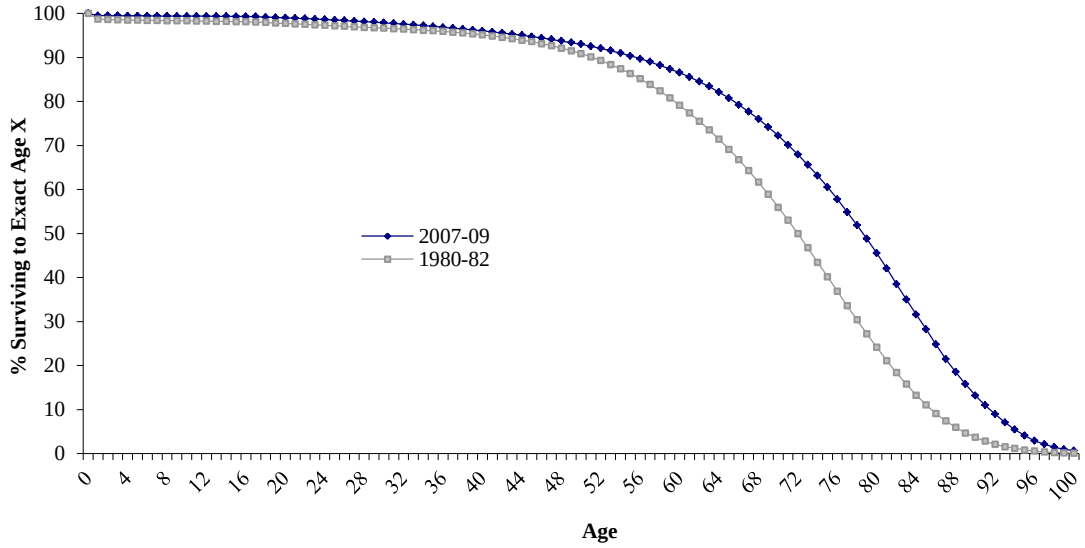
$$S(x) = \frac{l_x}{l_0} \qquad [2.9]$$

where l_0 is the number of people in an original cohort birth group that can be taken to be equal to either 1,000, 10,000, or 100,000, depending on the size of the population under investigation. l_x is the number of people from that original birth cohort group that survives to a particular exact age x (it can also be viewed as a probability that a person will survive to an exact age x).

By investigating the Scottish survival function for the years 1980–1982 and 2007–2009, it shows that in recent years in almost three decades, there has been an increase in the survivorship for all ages for male and female, as shown in Figures 2.31 and 2.32, and that female survival functions are higher than the males. Around 90 per cent of Scottish males were alive to reach 51 years of age in 1980–1982, increasing

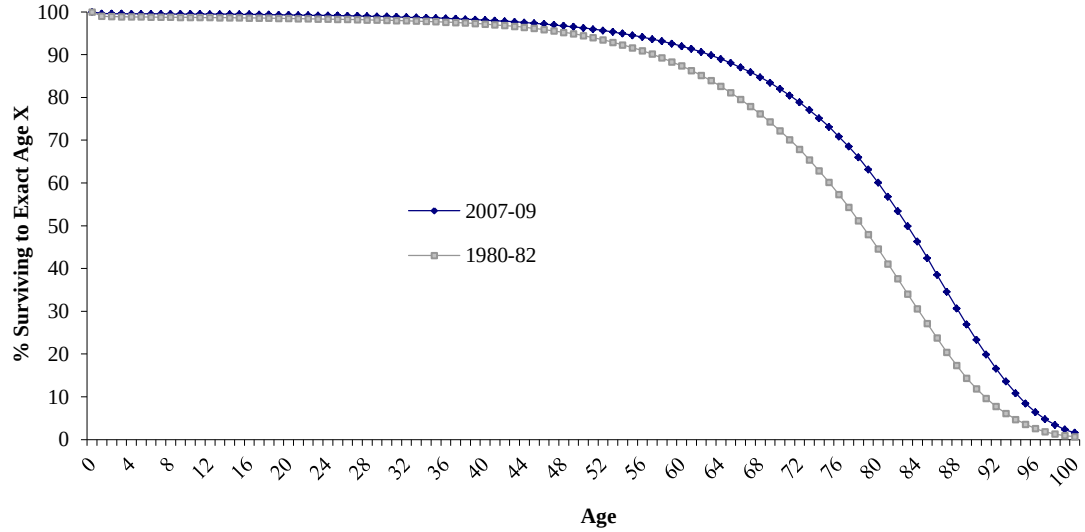
to 55 years of age by 2007–2009. In later life, at 90 years old, the male survival rate reached almost twice the one of the 1980–1982 figure in 2007–2009 (11.8% and 23.3% respectively). For females, over the same two periods, 90 per cent lived to reach 57 years of age in 1980–1982 and increase to 62 years of age by 2007–2009; also, in later life, at 90 years old, the female survival reached almost four times the one of the 1980–1982 figure in 2007–2009 (13.8% and 3.7% respectively).

Figure 2.31 Survival Functions, Male, Scotland, 1980–1982 and 2007–2009



Source: ONS (2010c)

Figure 2.32 Survival Functions, Female, Scotland, 1980–1982 and 2007–2009



Source: ONS (2010c)

Another way of investigating mortality is by using life expectancy measurements as this shows the profile of a country's health over time. Life expectancy is a theoretical measure and not a true prediction of life expectancy as the death rate can increase or decrease within an individual's lifetime. In addition, individuals can move to areas that have different mortality risks. Life expectancy, denoted by e_x in the life table, is basically an index. It indicates the average number of years to be lived by a person, or a cohort of people born in the same year, if mortality at each age remains in a constant state in the future. It refers to the average number of complete years of life remaining where fractions of a year are excluded. Life expectancy at birth can be seen as an indication on the general overall mortality level of a given population under investigation. It highlights the mortality trends across all age groups.

Calculating life expectancy using single year life tables can be done as follows: taking (1) age group (*x*), (2) mid-year population (P_x), (3) number of deaths (d_x), (4) central death rate (m_x), (5) probability of death (q_x), (6) number of surviving to age *x* (l_x), (7) person-years lived at age *x* (L_x), and (8) total number of years lived from age *x* (T_x). Then, to work out total life expectancy, take (8) and divide by (6) = (9) total life expectancy (e_x) or more specifically, to work out the life expectation at exact age *x*, the number of years alive at each individual age (L*x*) is found, which is done by using the formula:

$$L_x = \frac{1}{2}(l_x + l_{x+1}) \qquad [2.10]$$

where l_x is the average of the number of people still alive between exact ages *x* and *x*+1 (since a person must either die between exact ages *x* and *x*+1 or survive until their *x*+1 birthday). This formula is not efficient at capturing the population under one year old, as an even distribution of deaths is not a realistic assumption for this age group. For this group, a separate formula should be used:

$$L_0 = a_0 l_0 + (1 - a_0) l_1 \qquad [2.11]$$

where the addition of the a_0 represents the average age of death of those dying within the first year of life (usually taking on values between 0.10 and 0.30). The ONS

(2010c) assumes the average age of death for every period in order to calculate the infant death a_0. The assumptions regarding the average ages at death can be seen in the table 2.2.

Table 2.2 ONS Assumptions of the Average Age at Death

Age at Death	*Assumed Average age at death (Months)*
< 4 Weeks	0.2
1–2 Months	1.5
3–5 Months	4
6–8 Months	7
9–11 Months	10

Source: ONS (2010c)

Adding all the values of L_x at all ages older than the exact age *x* results in the total number of years lived (T_x) from age *x*. The average number of years people still have to live when they have celebrated their *x*th birthday is their life expectation (e_x) expressed as:

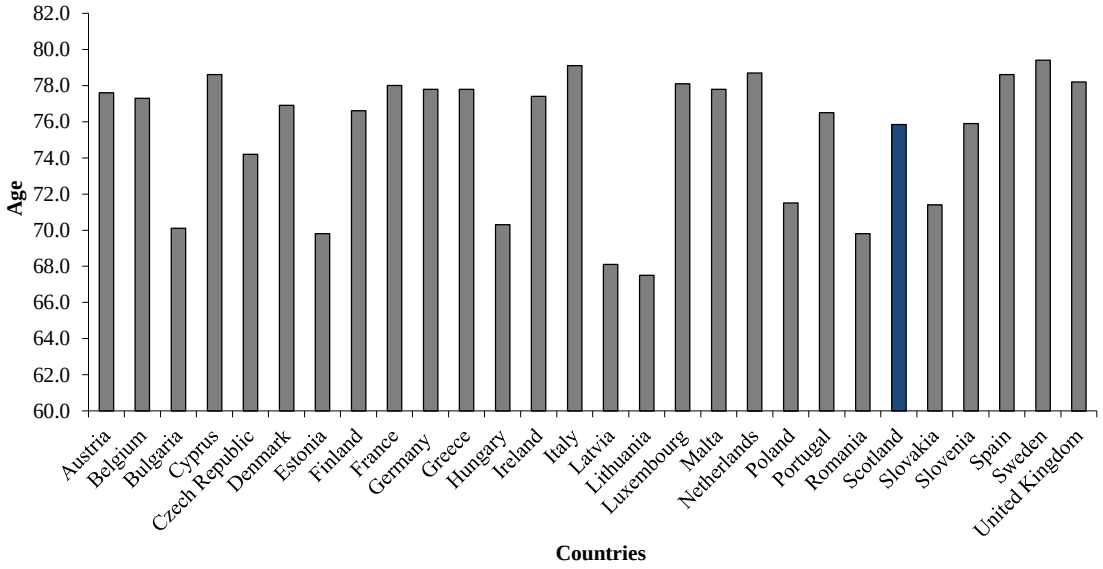
$$e_x = \frac{T_x}{l_x} \text{ (or life expectation at birth } e_0 \text{ expressed as } e_0 = \frac{T_0}{l_0}) \qquad [2.12]$$

Many factors affect an individual's life expectancy including age, sex, heredity factors, lifestyles, and social influences. Another important factor that can have an effect is living conditions, including food, housing, healthcare, unemployment, occupation and working conditions. All these socio-economic factors are taken into account when investigating the probability of surviving to a period of time (period expectation of life). The average life expectancy for the world is 64.29 years for a male and 68 years for a female (CIA 2011). For the EU-27, the male average is 75.2 years and the female average is 81.7 years (GROS 2011d).

In Scotland, as shown in Figures 2.33 and 2.34, the average life expectancy for males is 75.8 years of age, marginally higher than the EU average, and 4.6 years lower than the highest male life expectancy found in Sweden at 79.4 years. For females, it is 80.4 years, this is below the EU average and 4.6 years below the highest life expectancy found in France at 85 years. Scotland's life expectancy for males is more in line with the Eastern European countries with only Lithuania (67.5), Latvia (68.1),

Estonia (69.8), Romania (69.8), Bulgaria (70.1), Slovakia (71.4), Poland (71.5), and Czech Republic (74.2), currently having lower life expectancy. For Scottish females, this is also true with only Bulgaria (77.4), Romania (77.4), Latvia (78) Lithuania (78.7), Slovakia (79.1), Poland (80.1) and Estonia (80.2), currently having lower life expectancy.

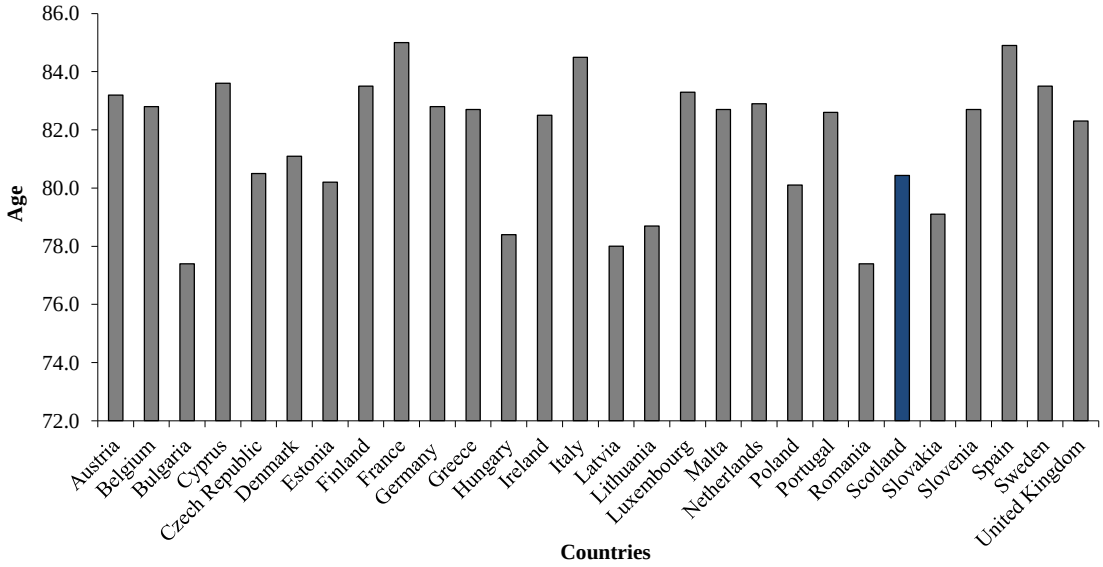
Figure 2.33 Life Expectancy for Males, EU-27 and Scotland, 2008–2010



N.B. Italy is 2007–2009 data

Source: GROS (2011d)

Figure 2.34 Life Expectancy for Females, EU-27 and Scotland, 2008–2010

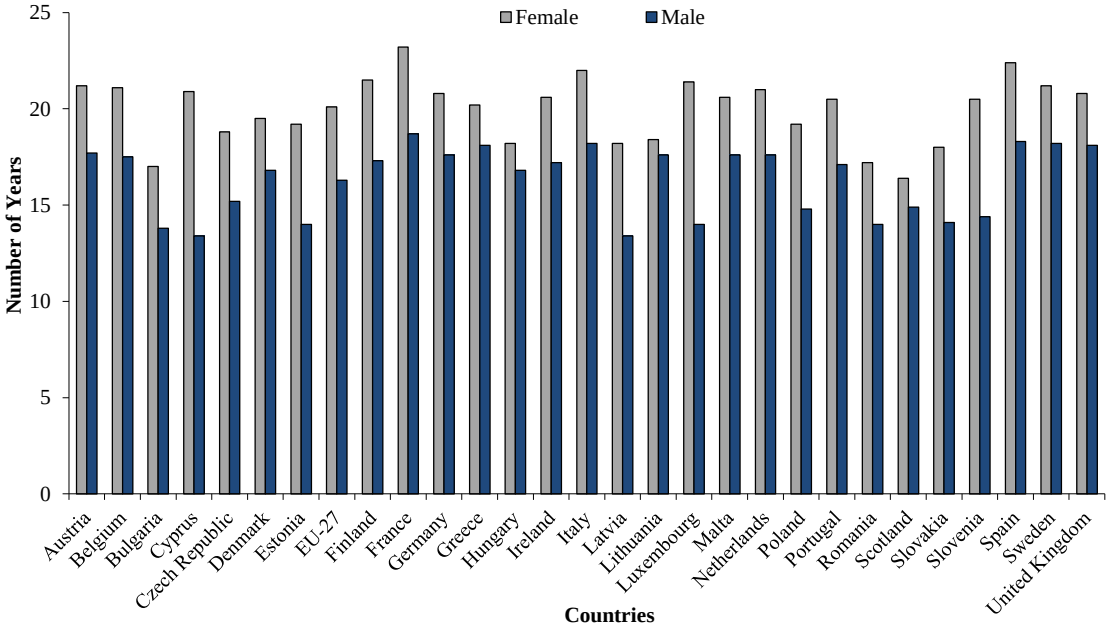


N.B. Italy is 2007–2009 data

Source: GROS (2011d)

Figure 2.35 shows the life expectancy for Scotland and the EU-27 for males and females of age 65+. For males, the EU-27 average was 16.3 years, which is higher than the Scottish male average of 14.9 years. For females, the EU-27 average was 20.1 years with Scottish females on average being below this figure at 16.4 years.

Figure 2.35 Life Expectancy at Age 65+, Male and Female, EU-27 and Scotland, 2009



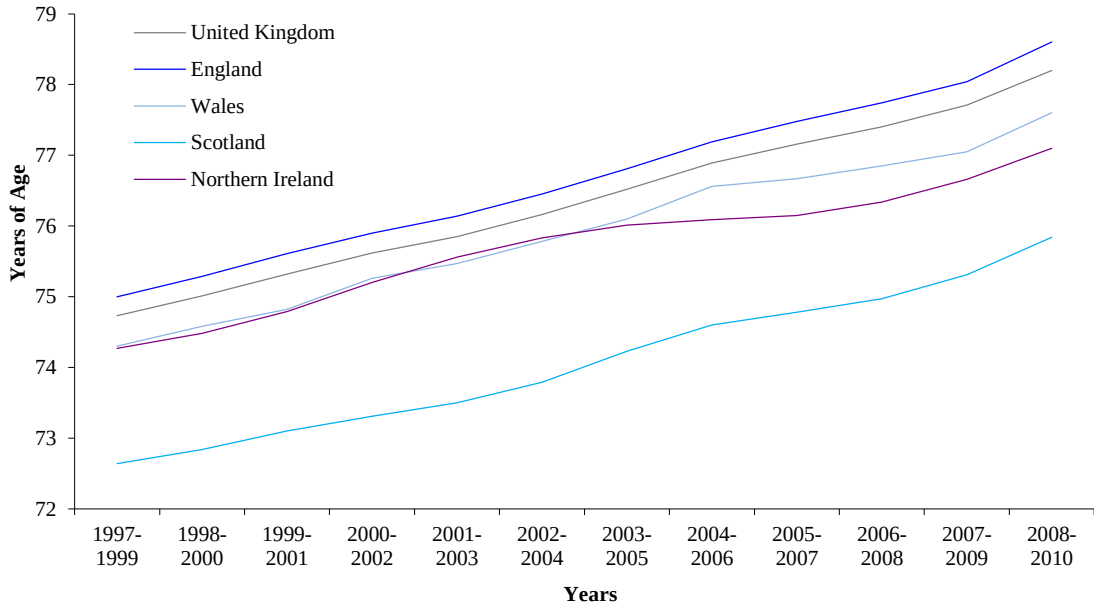
Source: Eurostat (2011)

By examining the UK life expectancy in more detail, it is found that, over the last decade, male and female levels have been historically, and still currently are, lower in Scotland than elsewhere in the UK, despite improvements being experience in the Scottish life expectancy. The Scottish Government (2010b) suggests the improvements in life expectancy mask significant intra-country variations.

Figures 2.36 and 2.37 show the UK life expectancy for males and females. England exhibits life expectancy levels above the UK average level for both males and females. Between 1997–1999 and 2008–2010, life expectancy for males in Scotland increased by 3 years (from 72.8 years to 75.8 years). During the same period, a smaller increase of 2.2 years was also observed for females (increasing from 78.2 years to 80.4 years). This compares to England with males' life expectancy

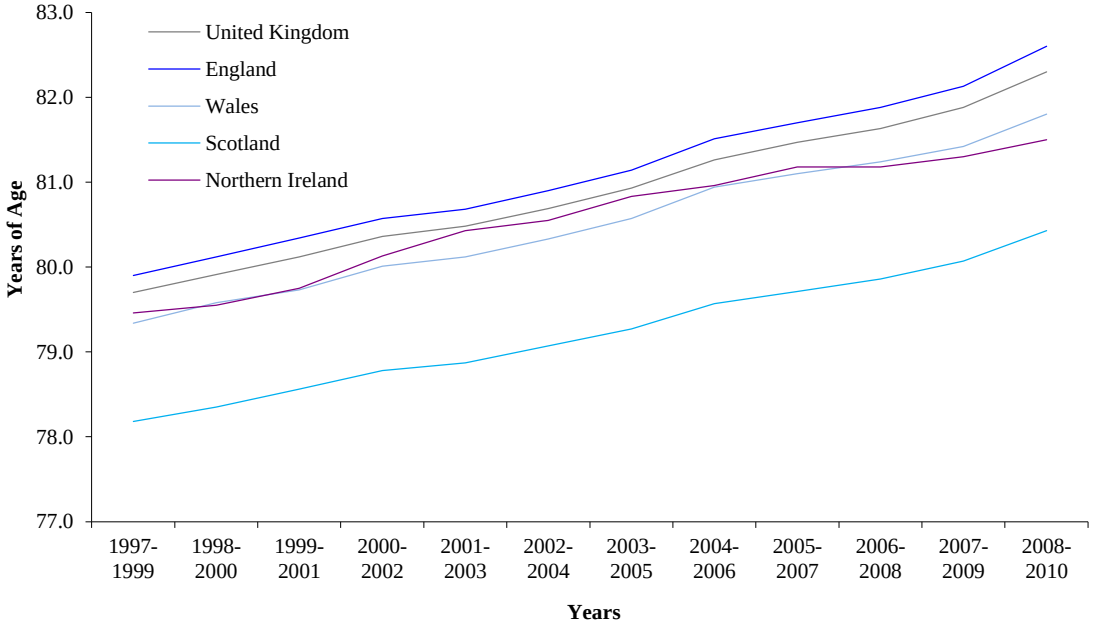
increasing by 3.6 years (increasing from 75 years in 1997–1999 to 78.6 years in 2008–2010). For females, life expectancy increased by 2.7 years (increase from 79.9 years to 82.6 years during the same period). In Figures 2.27 and 2.28, the difference between England, the top country, and Scotland, the bottom country, shows not only that a gap existed, but also that it is now getting wider.

Figure 2.36 Male Life Expectancy at Birth, UK, 1997–1999 to 2008–2010



Source: GROS (2011d)

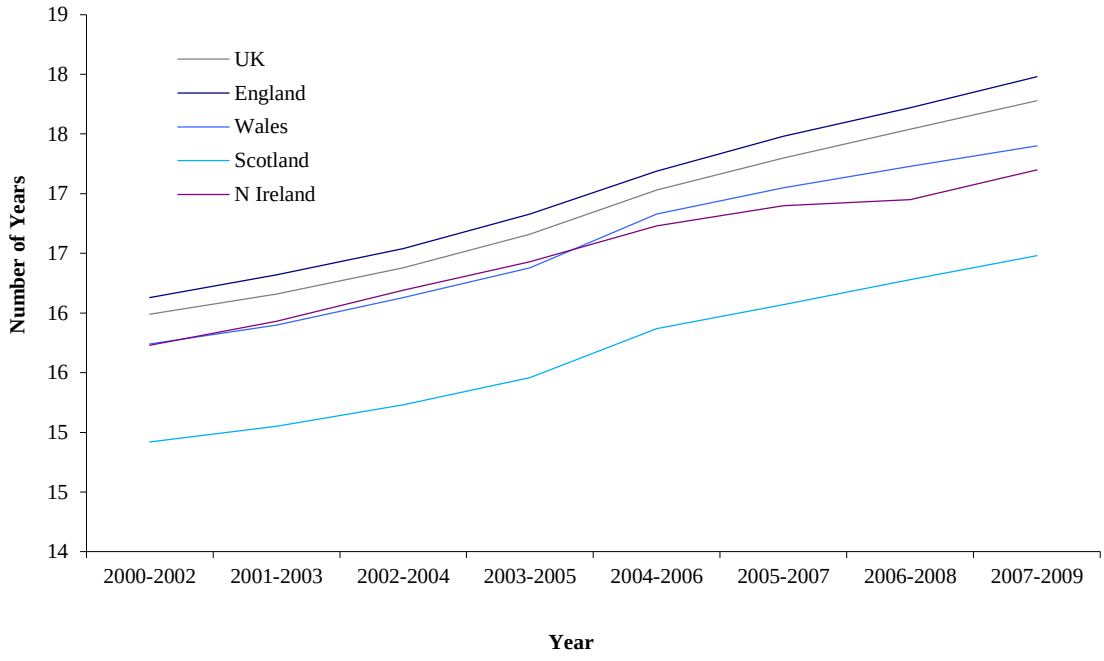
Figure 2.37 Female Life Expectancy at Birth, UK, 1997–1999 to 2008–2010



Source: GROS (2011d)

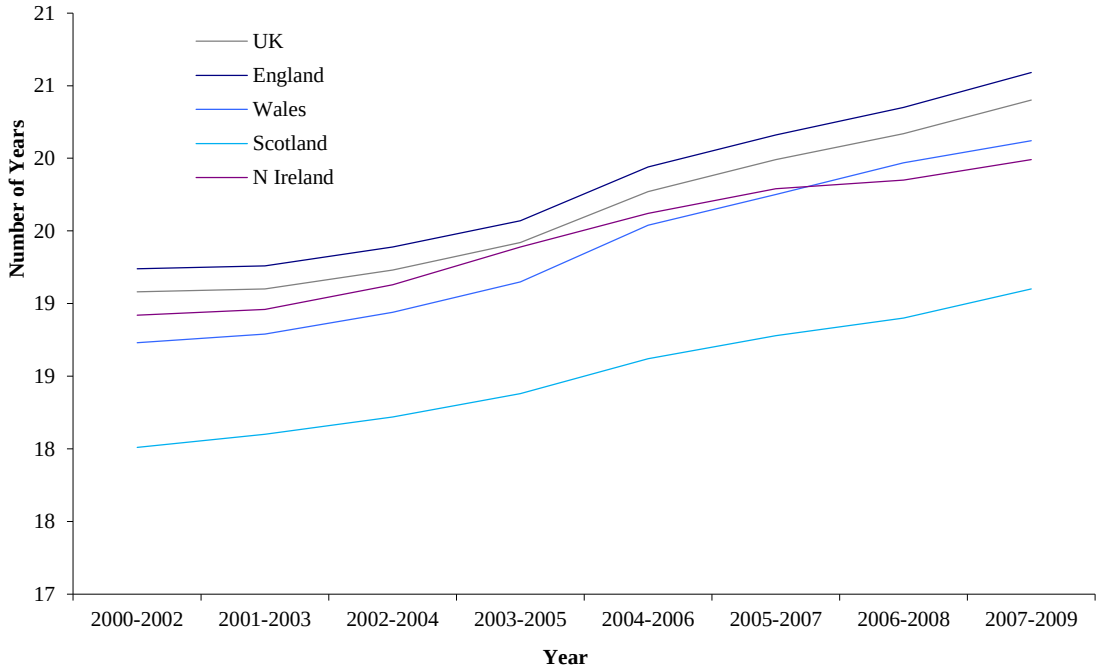
Life expectancy for the population of 65+ years of age in the UK over the last decade is shown in Figures 2.38 and 2.39. The results show there is a divergence between Scotland and the other UK countries, with Scotland remaining at low expectancy level for both sexes (ONS, 2010d). When comparing Scotland with the country with the largest improvement for males, England, it showed the difference between the two countries was getting slightly wider over the last decade (an improvement of 1.85 years for England and 1.56 years for Scotland over the two decades). For females, the largest increase was found in Wales, with 1.39 years and the lowest was found in Northern Ireland at 1.07 years, only slightly lower than Scotland with 1.09 years. There are some improvements within Scotland for both sexes. Males had a life expectancy of 14.92 years in 2000–2002, increasing to 16.48 years in 2007–2009 and females increasing from 18 years in 2000–2002 to 19.1 years in 2007–2009.

Figure 2.38 Male Life Expectancy at 65+ Years Old, UK, 2000–2002 to 2007–2009



Source: ONS (2010d)

Figure 2.39 Female Life Expectancy at 65+ Years Old, UK, 2000–2002 to 2007–2009



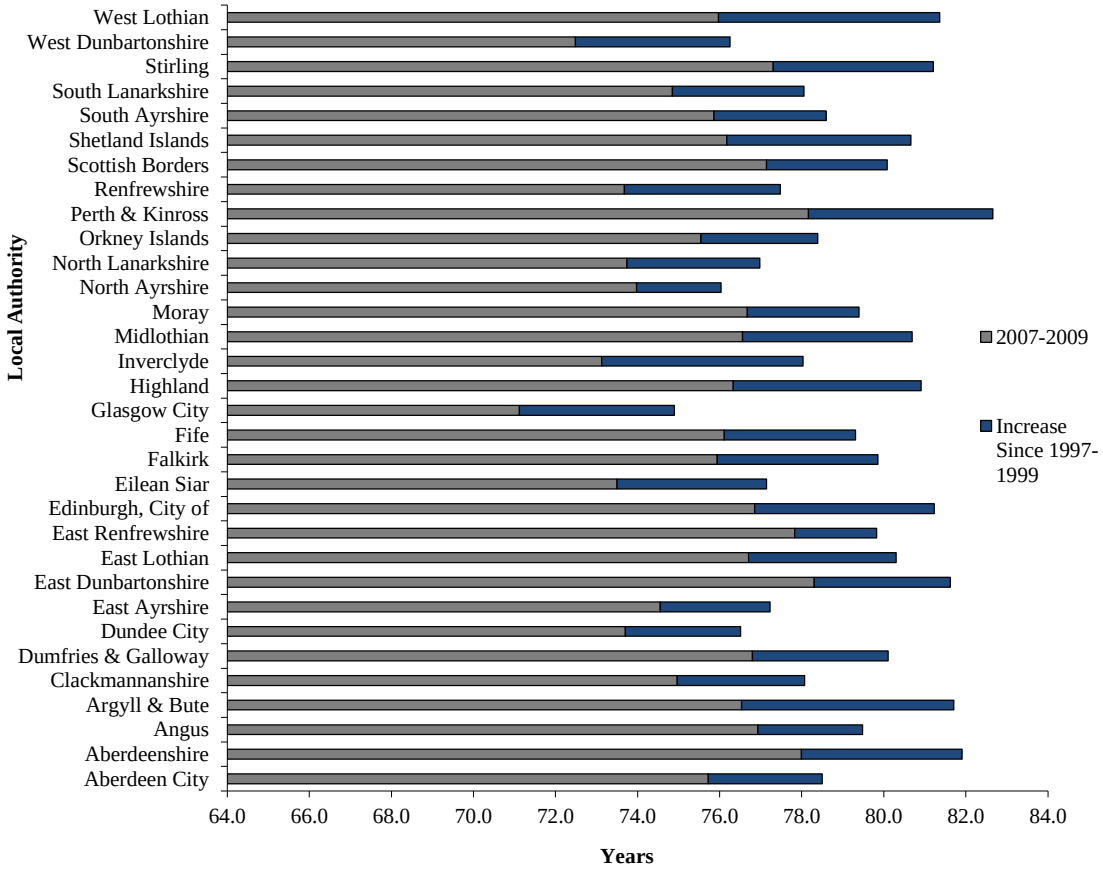
Source: ONS (2010d)

In Scotland, life expectancy varies significantly by deprivation level (Carstairs and Morris, 1989; Leon et al, 2003; Hanlon et al, 2005; Scottish Government, 2005a; Popham, 2006; Sciece2.0, 2008 and Sutherland and Coyle, 2009), which is measured by the Scottish Index of Multiple Deprivation (SIMD)[3]. Grant et al (2006) carried out research into the death rate in Scotland and found a strong correlation between higher amenable mortality rates (mortality that can theoretically be avoided by timely and effect health care) and higher deprivation. They further found that around 10 per cent of all deaths per year in Scotland were amenable and that deprivation increases your chance of mortality. They concluded that deprivation is associated with a higher level of possible 'preventable' deaths in Scotland. According to Leyland et al (2007, p.ii), in Scotland, "Deprivation accounts for most but not all of the regional differences in mortality rates…High mortality concentrated in deprived areas, particularly in the

[3] The Scottish Index of Multiple Deprivation adds 38 indicators across 7 weighted domains (income 28%, employment 28%, health 14%, education, skills and training 14%, geographic access 9%, crime 5% and housing 2%)

West of Scotland, has a substantial impact on national mortality rates". Figure 2.40 shows the life expectancy of the Scottish population broken down by Local Authority areas. All Local Authorities have experienced improvements in life expectancy, with West Lothian (5.4 years) and Argyll and Bute (5.2 years) having the highest increase. East Renfrewshire (2 years) and North Ayrshire (2.1 years) show the least improvements over the period.

Figure 2.40 Life Expectancy by Local Authority, Scotland, 1997–1999 and 2007–2009

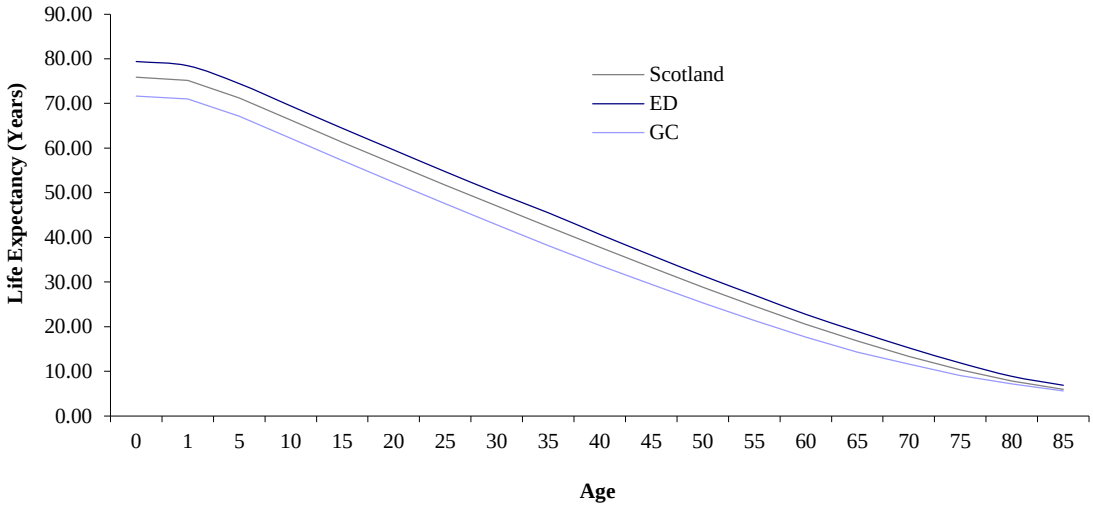


Source: GROS (2011c)

The deprivation within Scotland's Local Authorities and the death rate for each of the Local Authorities exhibits a pattern. Figure 2.41 shows the Scottish life expectancy at birth for males and the areas of lowest and highest deprivation. Over Scotland, the average life expectancy at birth for males, as noted previously, is 75.8 years. The lowest male life expectancy is found in Glasgow (GC), which also has the highest deprivation level with 71.6 years of age. The highest male life expectancy is

found in East Dunbartonshire (ED) with 79.4 years, which has the lowest deprivation level. This shows a difference of 7.8 years between the highest and lowest deprivation areas.

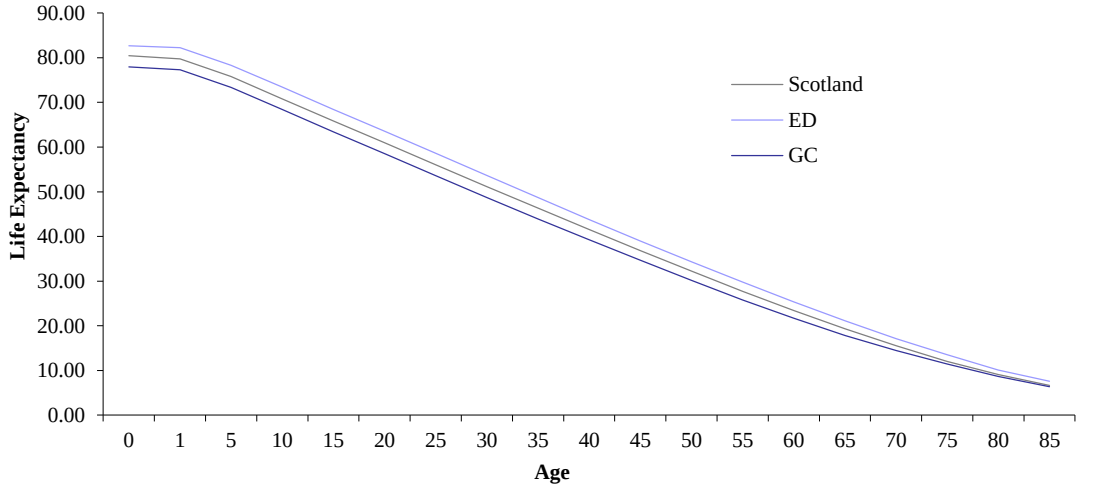
Figure 2.41 Deprivation and Male Life Expectancy at Birth, Scotland, East Dunbartonshire, and Glasgow City, 2008–2010



Source: GROS (2011d)

Figure 2.42 shows that, for Scottish females, the average expected lifetime from birth is 80.4 years. The lowest female life expectancy from birth is found in Glasgow City (GC) with 77.9 years and the highest is found in the East Dunbartonshire (ED) with 82.7 years, a difference of 4.8 years.

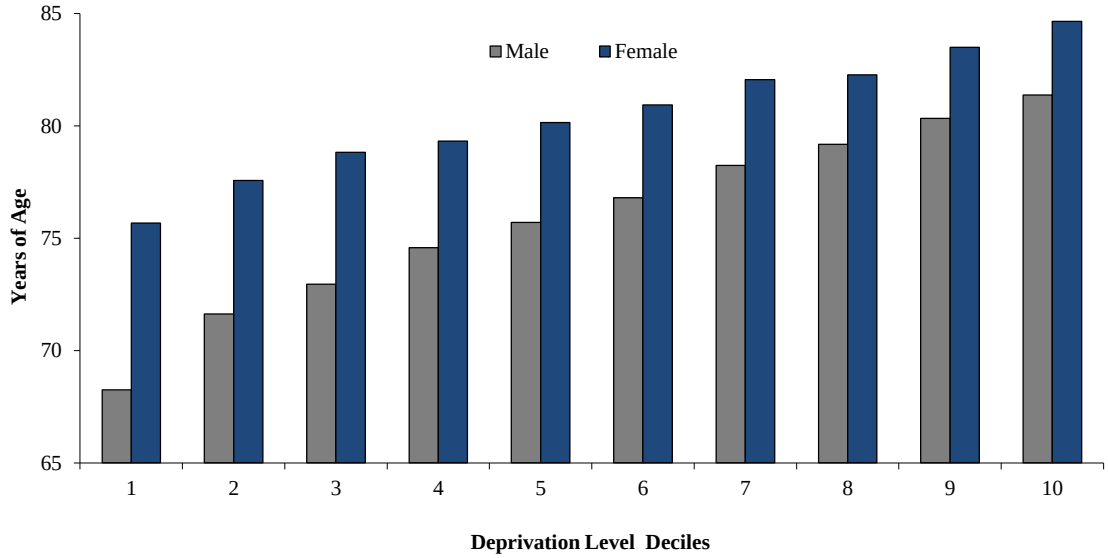
Figure 2.42 Female Life Expectancy from Birth, Scotland, East Dunbartonshire, and Glasgow City, 2008–2010



Source: GROS (2011d)

There is a big variation of life expectancy within the 10 most deprived areas deciles, as can be seen in Figure 2.43. This shows the average life expectancy for a male in the first most deprived area decile is 68.2 years of age and 75.7 years of age for females. This compares to the tenth least deprived decile area showing that for males, the life expectancy is 81.4 years of age and for females, it is 84.6 years of age. This highlights a negative correlation between deprivation and life expectancy in Scotland. The Scottish Government (2010b, p.27) states that, "Health inequalities in Scotland result in significant variation in mortality, life expectancy, and healthy life expectancy, with deprivation being a key determining factor".

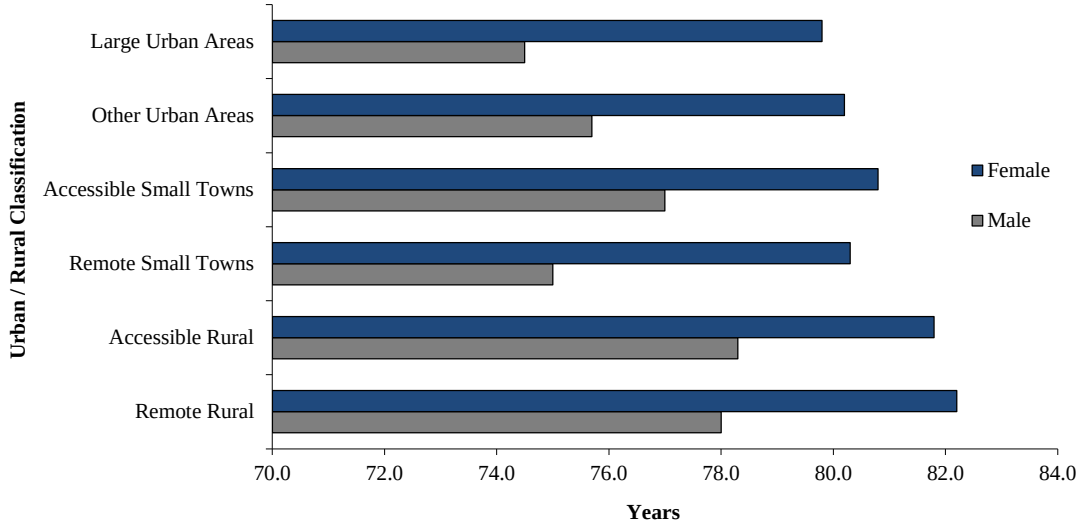
Figure 2.43 Life Expectancy by Deprivation Level Deciles, Scotland, 2008–2010



Source: GROS (2011d)

Figure 2.44 shows that, for both males and females, life expectancy is shorter for the population living in large urban areas and is highest for those living in rural parts of Scotland, which has been evident for a number of years. In the rural remote areas of Scotland, males are expected to live three and a half years longer than males living in larger urban areas, for women the difference is 2.4 years.

Figure 2.44 Life Expectancy by Urban / Rural Classification, Scotland, 2008–2010



Source: GROS (2011d)

Following on from life expectation, morbidity (an incidence of ill health) is another indicator of mortality; it is the stage before death. The measurement of the number of years prior to the morbidity stage is referred to as 'healthy life expectancy' (HLE), which is the time spent in good to fairly good health, sometimes referred to as disability free life expectancy (DFLE), which is life without a limiting chronic illness or disability. HLE is a theoretical measure first suggested by Sanders (1964, p.1069) as a way to measure efficiency of health care in terms of "…actual or potential increase in economic productivity-that is, productive man-years". Following this, healthy living indicator was then suggested by Sullivan (1971, p.347), "Using both mortality and disability rates as the components of such an index based upon a life table model". Healthy life expectancy can be seen as an index of the health status of a given country's population by using estimates for both mortality and morbidity.

It is of importance to ascertain if increases in life expectancy correspond with increases in healthy life expectancy. There can be adverse consequences for the demand for public welfare provisions if increases in life expectance are not met by the same level of increases in healthy life expectancy. In order to assess the healthy life expectations of the population, both mortality and morbidity tables need to be brought together into one aggregate total. By doing so, it will result in a more realistic indication of the social-economic activity of the population. This is because now, people within the population who suffer from illnesses or people who are

unable to contribute to the social-economic wellbeing of the country are accounted for.

In Scotland, the assessed health statistics that make up the healthy life expectancy are taking from the 'Self Assessed Health' question in the Scottish Household Survey that is, "Over the last twelve months would you say your health has on the whole been: Good? Fairly good? Not good?". With this question, 'good' and 'fairly good' categories are aggregated under the healthy heading and the not good category is placed under the not healthy heading. The figures can be unreliable as they depend on the participants' self-assed attitude towards their own health. The Scottish population are more likely to consider themselves to be in good health. According to the Scottish Health Survey carried out by the Scottish Government (2011a), 75 per cent of adults in 2010 described their health in general as 'good' or 'very good' while 7 per cent described it as 'bad' or 'very bad'. This varied by age, with 88 per cent aged 16–24 saying their health was 'good' or 'very good' compared with only 56 per cent of those aged 75+ years.

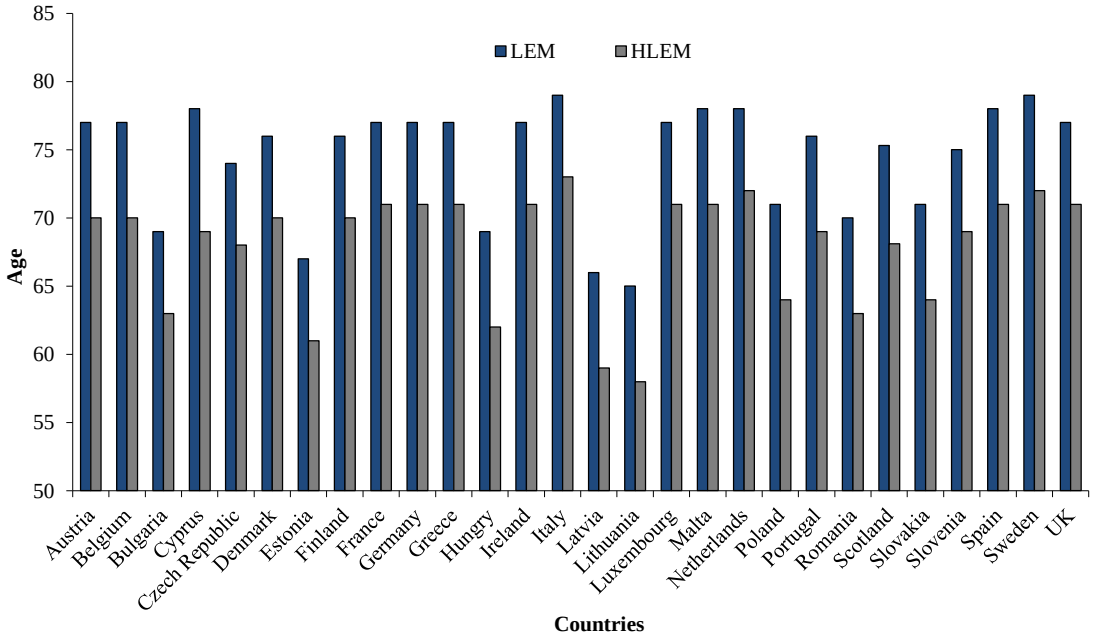
Scotland follows guidelines for the analysis of healthy life expectancy from the 'European Health Expectancy Monitoring Unit' (Jagger et al, 2006), which uses the Sullivan (1971) method referred to as EU-HLE. The data comes from the Eurostat survey 'Statistics on Income and Living Conditions (EU-SILC). Changes currently being made could cause a distortion in the comparison between countries in the future[4] as the categorising of the EU-SILC is altered. As of the end of 2011, the healthy life expectancy figures for Scotland will take account for the new changes that will affect the 2009 Figures. The current 2008 healthy life expectancy figures for Scotland (latest available in summer 2011), are registered with the Scottish Public Health Observatory (ScotPHO).

[4] The EU-SILC has changed the healthy life expectancy categories, previously this was divided up as follows; good heath that was 'good' and 'fairly good' and 'not good' equalled not good health. As of 2007 'very good' and 'good' now equals good health and 'fairly good', 'bad' and 'very bad' equals not good health. The problem then arises with the 'fairly good' category change that now distorts cross county comparisons.

The calculation of the healthy life expectancy using the Sullivan method (the number of years left to live at a specific age in a healthy state, whichever way that healthy state is defined) is based on age-specific proportion of the population that is living with or without a disability and on mortality information. This reflects the health of the real population, adjusted for mortality levels. The Sullivan method uses data from period life tables and other surveys and can be calculated using several methods constructed from single year and abridged life tables. The following method uses the single year life table: taking the method as before from the example of working out (9) total life expectation (e_x), following on from this, add (10) proportion living with disability (π_x), (11) person-years lived without disability at age *x* ($[1-\pi_x]L_x$), (12) total years lived without disability from age *x* ($\Sigma[1-\pi_x]L_x$), (13) disability free life expectancy (DFLE), and the (14) proportion of life spent disability free (%DFLE/e_x).

In examining the difference between life expectancy and healthy life expectancy for the EU-27 and Scotland, results in Figure 2.45 show that a Scottish male could spend on average 7.2 years of his life with a debilitating illness. This is significantly higher than the EU-27 average of 6.5 years for men.

Figure 2.45 Male Life Expectancy at Birth (LEM) and Male Healthy Life Expectancy at Birth (HLEM), EU-27 and Scotland, 2008

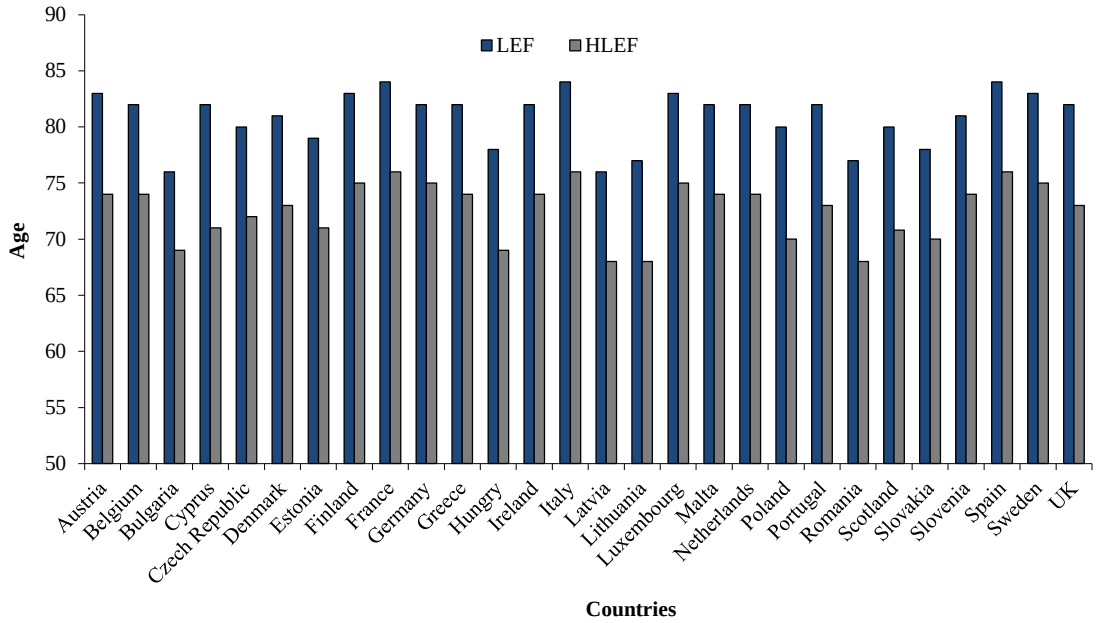


N.B. For Scottish Figures, 1997, 2003, and 2004 has been extrapolated

Source: WHO (2009) and Scotpho (2009)

Figure 2.46 shows that in Scotland, there was 9.2 years of difference (80 years – 70.8 years) between a female life expectancy and their healthy life expectancy in 2008, meaning there is a chance, on average, a Scottish woman will live those 9.2 years with a debilitating illness; again, this is more than the EU-27 average of 8.2 years for women.

Figure 2.46 Female Life Expectancy at Birth (LEF) and Female Healthy Life Expectancy at Birth (HLEF), EU-27 and Scotland, 2008

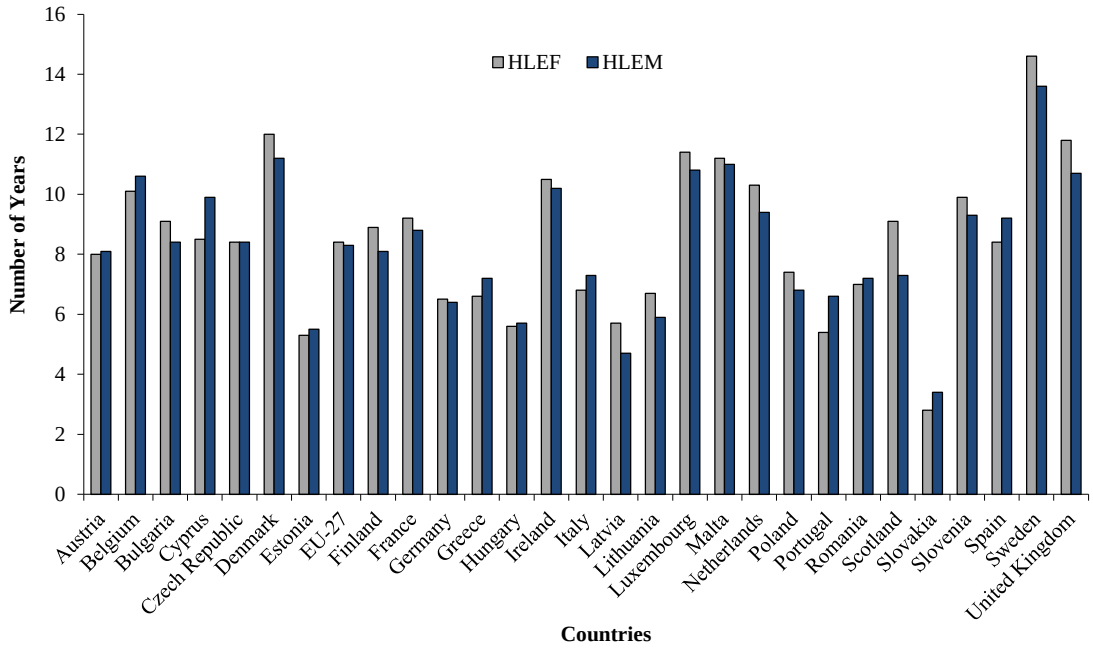


N.B. For Scottish Figures 1997, 2003, and 2004 has been extrapolated

Source: WHO (2009) and Scotpho (2009)

Figure 2.47 shows the healthy life expectancy for males and females over 65+ years of age. In Scotland, the healthy life expectancy average for males was 7.3 years, lower than for the EU-27 with 8.3 years, and 9.1 years for females compared to 8.4 years for the EU-27.

Figure 2.47 Healthy Life Expectancy at Age 65+, Male and Female, EU-27 and Scotland, 2009



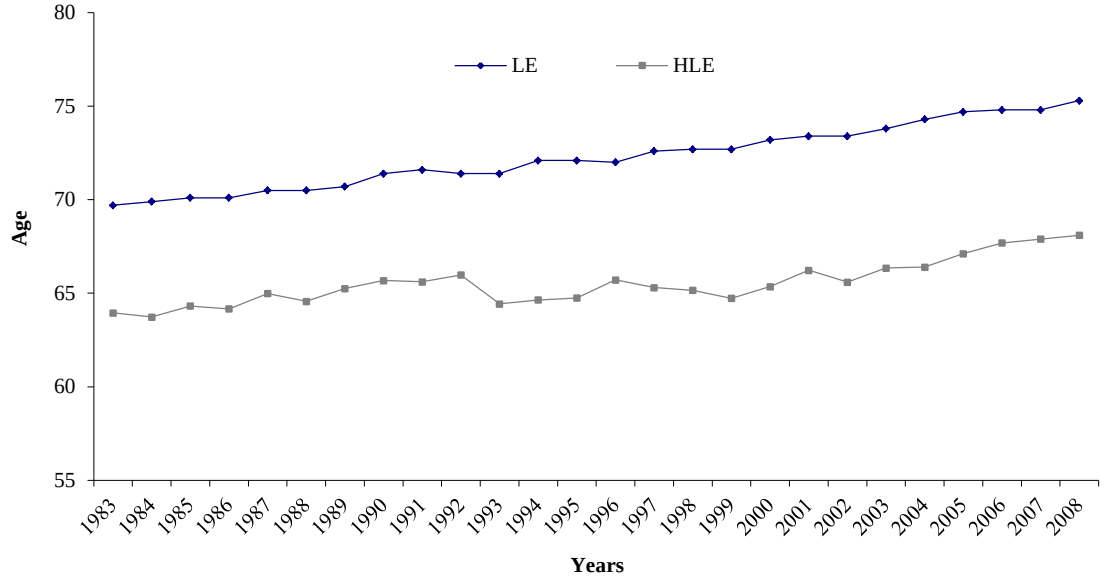
N.B. Italy and Scotland are 2008 data

Source: Eurostat (2011)

Investigating healthy life expectancy in Scotland specifically, the ScotPHO (2009) statistics show that both life expectancy and healthy life expectancy at birth have improved over recent time, however not at the same rate as the gap between the numbers of years expected to be spent in 'not good' health has widened (Scottish Government, 2010a). ScotPHO (2009) found that Scotland has a lower healthy life expectancy compared to the rest of the UK. Further, that both Scottish male and female healthy life expectancy are among the lowest in Western Europe, especially Scottish males. Wood and Bain (2001) found that more people are living longer but are spending more time in poorer health. They also found that disability and longstanding illness increase greatly with a person's age, especially for women aged 85+.

Figures 2.48 and 2.49 show the trend from 1983 to 2008 (latest comparable data available in summer 2011) for males and females. Figure 2.48 shows that, for males in Scotland, an increase in life expectation is associated with an increase in morbidity. In 1983, the number of years that were lived in non-healthy years was 5.8, this increased to 7.2 by 2008.

Figure 2.48 Life Expectancy and Healthy Life Expectancy at Birth for Males, Scotland, 1983–2008

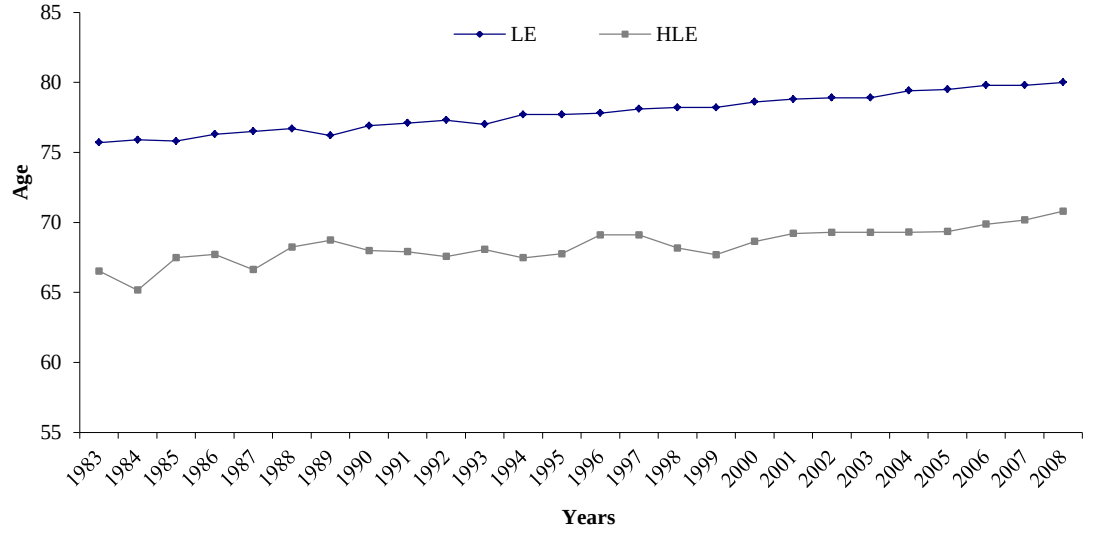


N.B. 1997, 2003, and 2004 has been extrapolated

Source: Scotpho (2009)

For females, Figure 2.49 shows that in 1983, the number of years for females in Scotland that lived in non-healthy years was 9.2. This has not shown any significant progress over the years, and recently the number of years living in non-healthy status was again 9.2.

Figure 2.49 Life Expectancy and Healthy Life Expectancy at Birth for Females, Scotland, 1983–2008

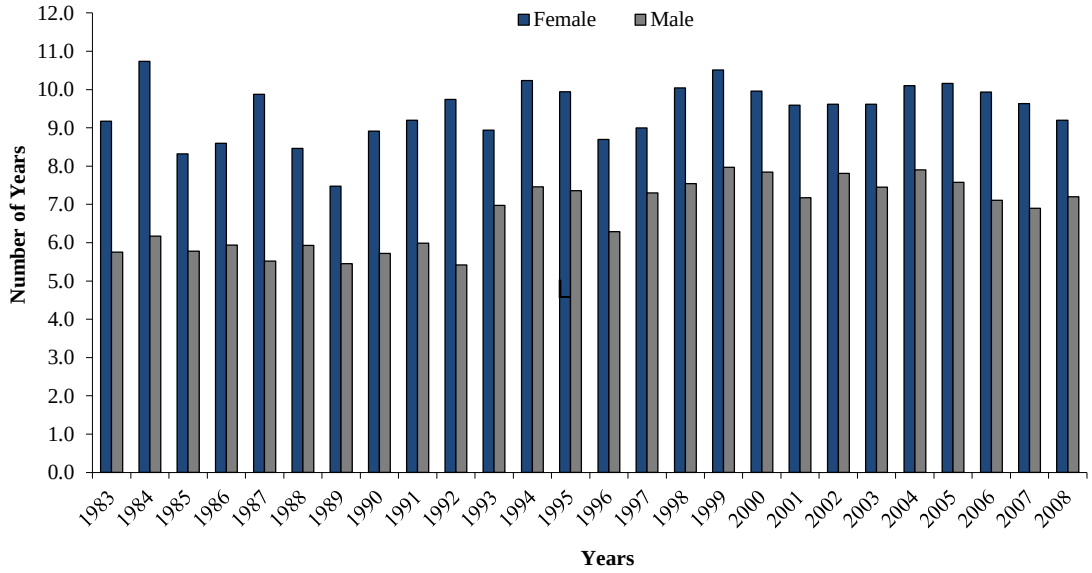


N.B. 1997, 2003, and 2004 has been extrapolated

Source: Scotpho (2009)

The difference between the male and female life expectancy and healthy life expectance is summarised in Figure 2.50.

Figure 2.50 Difference in Years between Life Expectancy and Healthy Life Expectancy, Male and Female, Scotland, 1983–2008



The 'International Classification of Diseases' (ICD) (WHO, 2010) is used to examine the main causes of death in most places in the world, including Scotland. This classification began in 1893 and it is updated every ten years. The ICD has been published by the World Health Organisation since 1948 (Sixth Revision) and has been extended to include morbidity, the cause of death being referred to as 'ICD10'. Examining the top cause of death in the EU-27 can be carried out using the standardised death rate (with the EU-27 age-specific rates using the standard population structure as weights). Data collected by Eurostat show that the biggest cause of death in the EU-27 was cancer, followed by heart disease and nervous system disease. The number of deaths can be seen in Table 2.3. According to the European Public Health Alliance (2006) the most common cause of death in Europe was accidents for the younger age group of 0–19 year old, suicide for the 20–44 year olds, cancer for the 45–64 age group and heart disease for the 65+ age group.

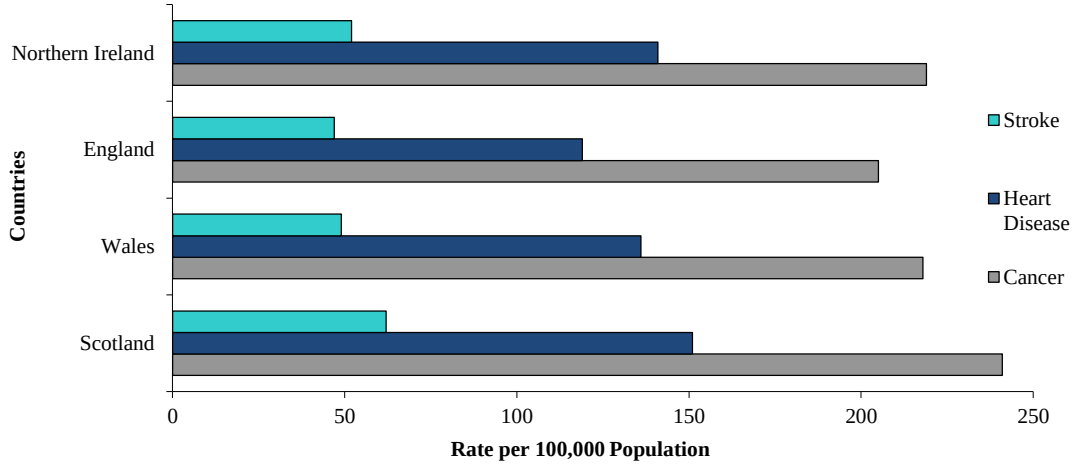
Table 2.3 Standardised Death Rate (per 100,000 inhabitants), EU-27, 2009

	Male	***Female***
Cancer	222.5	129.4
Heart Disease	110	55.7
Nervous System Disease	20.1	15.9

Source: Eurostat (2009a, 2009b, and 2009c)

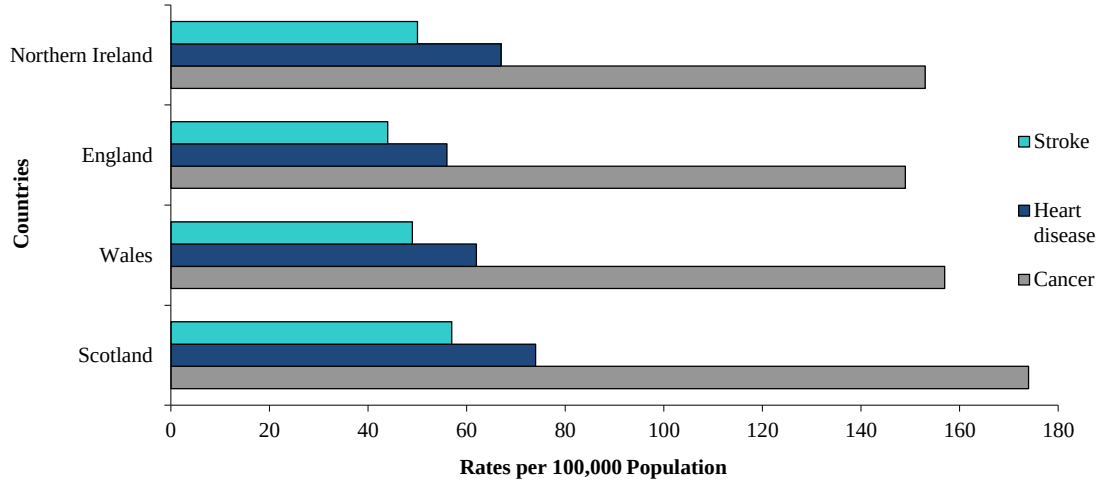
Figures 2.51 and 2.52 show the top three causes of death in the UK. These causes, often referred to as the 'three big killers', are cancer ICD10 'C00-C96' (this excludes the code 'C44' because of the Scottish Cancer Registry not using the code 'C97'), heart disease ICD10 'I20-I25', and stroke ICD10 '160-169' (even though respiratory system diseases ICD10 'J00-J99' accounted for the third highest cause of death, which was 6,896 deaths or 13% of all deaths in 2010). When comparing Scotland with the rest of the UK, Scotland shows a higher rate per 100,000 for all the three causes, for both male and female groups.

Figure 2.51 Age-adjusted Mortality Rates by Cause, Male, per 100,000 Population, UK, 2010



Source: GROS (2011c)

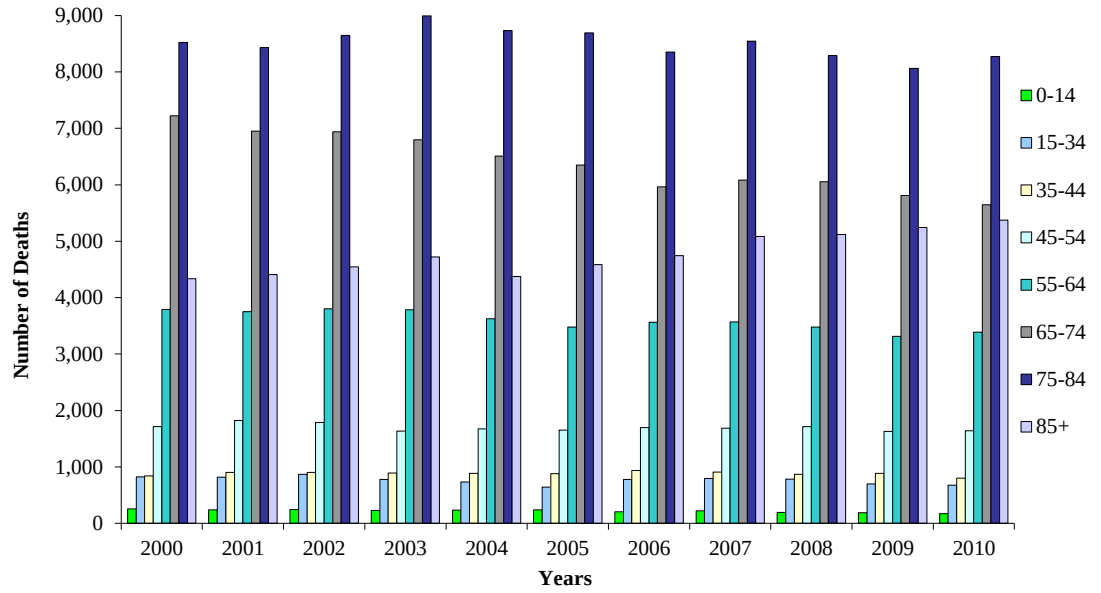
Figure 2.52 Age-adjusted Mortality Rates by Cause, Female, per 100,000 Population, UK, 2010



Source: GROS (2011c)

Figure 2.53 shows the number of deaths for Scottish males by age groups. From 2000 until 2010, the age groups within the 0–54 years has experienced almost no change, the number of deaths between the 55–74 age groups has slightly reduced, the age group of 75–84 year olds (where the highest number of male deaths occur) has overall reduced, and the age group 85+ has been overall increasing in size showing that a greater number of males are surviving longer.

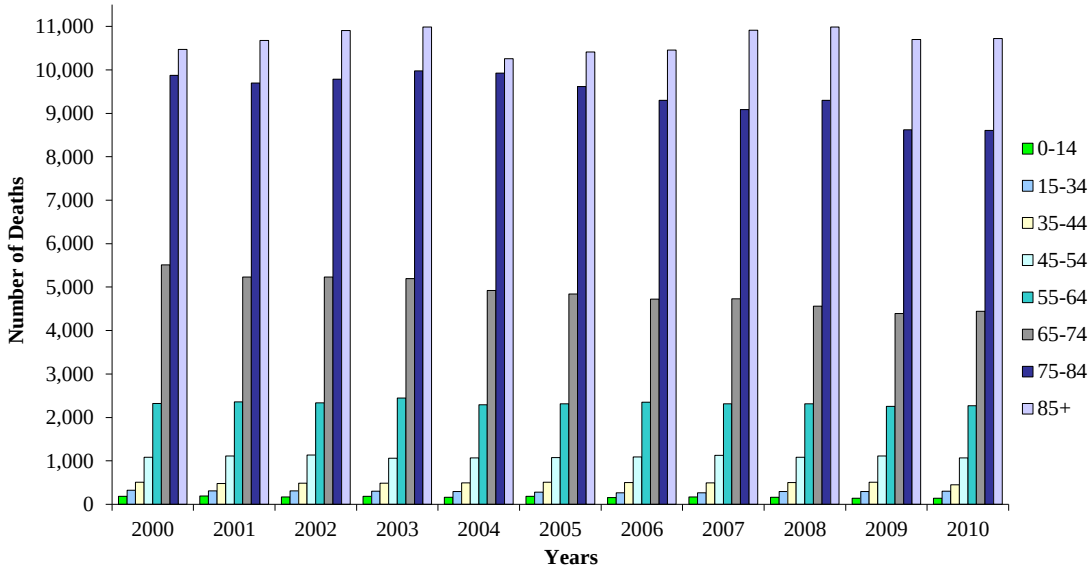
Figure 2.53 Death by Age Group, Male, Scotland, 2000 to 2010



Source: GROS (2011c)

For the Scottish females, Figure 2.54 shows that, during the same period, the number of deaths in the age group between 0–64 years have stayed relatively level, the 65–84 year age group have shown a drop in the number of deaths, and most female deaths occur within the 85+ age group where the overall number of deaths has slightly increased.

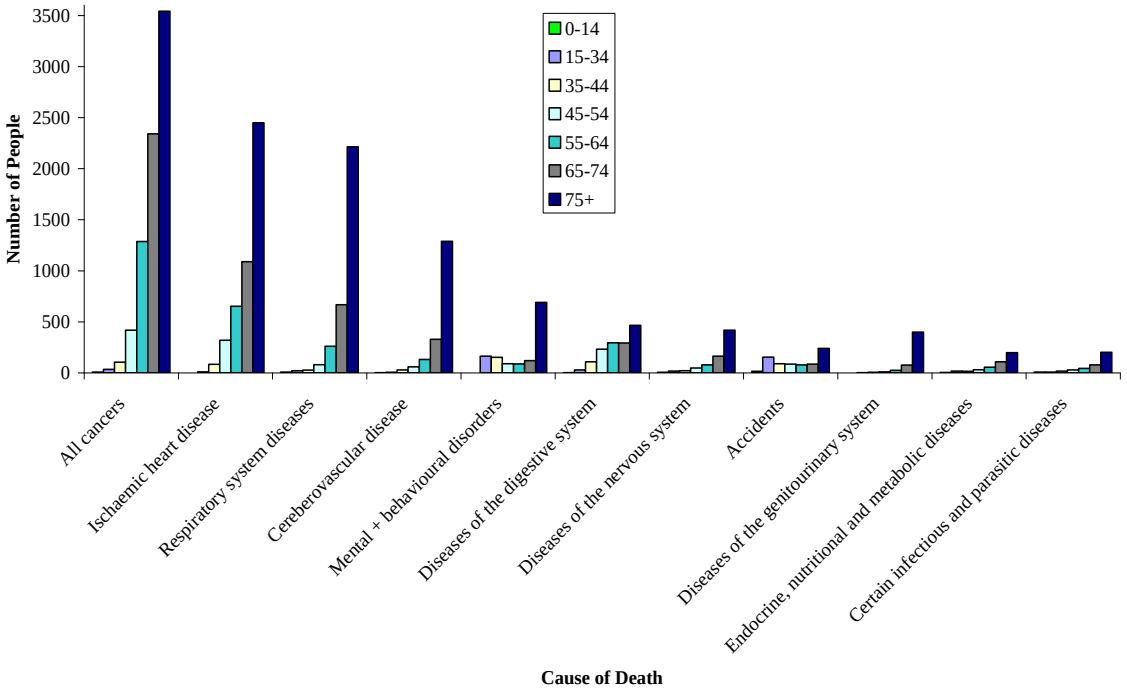
Figure 2.54 Deaths by Age Group, Female, Scotland, 2000 to 2010



Source: GROS (2011c)

The main causes of Scottish mortality exhibits similar pattern as the main causes of death in the EU-27 and the UK. Historically, the main causes of deaths in Scotland are from the 'three big killers', cancer causing 15,323 deaths accounting for 28 per cent of all deaths in 2010, heart disease causing 8,138 deaths accounting for 15 per cent of all deaths in 2010 and stroke causing 4,764 deaths accounting for 9 per cent of all deaths in 2010. Figure 2.55 illustrates the most recent data (2010) on causes of Scottish mortality, broken down by sex and age. For men, the most popular cause of death was accidents for the 0–14 years age group, mental and behaviour disorder reasons for the 15–44 age group, cancer for all age groups 45+.

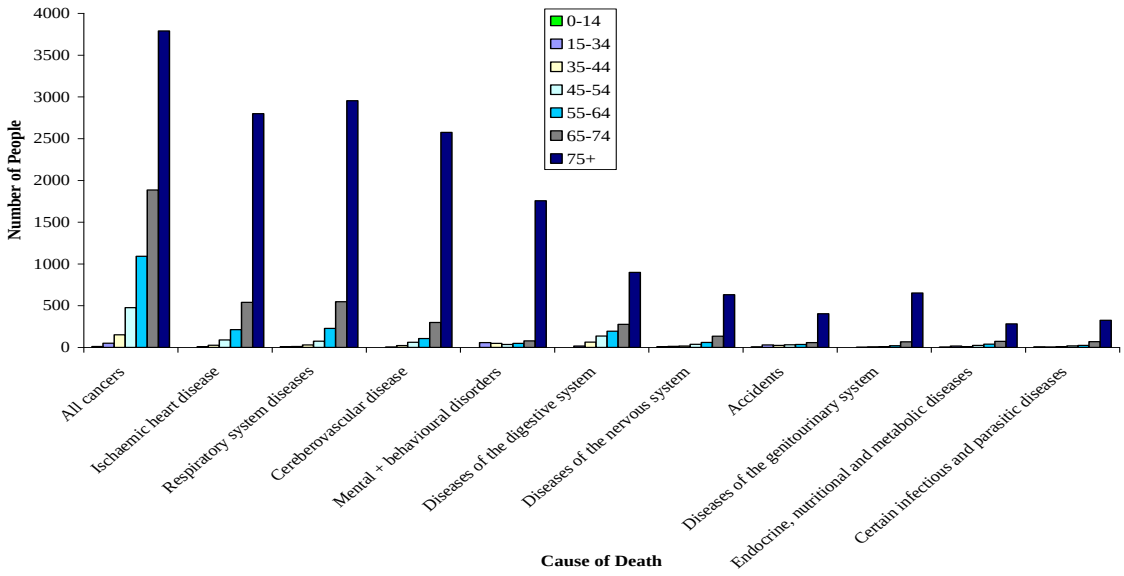
Figure 2.55 Causes of Death by Age Group, Males, Scotland, 2010



Source: GROS (2011e)

Figure 2.56 shows that, for females in Scotland, the most common cause of death were cancer for the 0–14 age group, mental and behaviour disorder reasons for the 15–34 age group and cancer for the 35+ age groups.

Figure 2.56 Causes of Death by Age Group, Female, Scotland, 2010



Source: GROS (2011e)

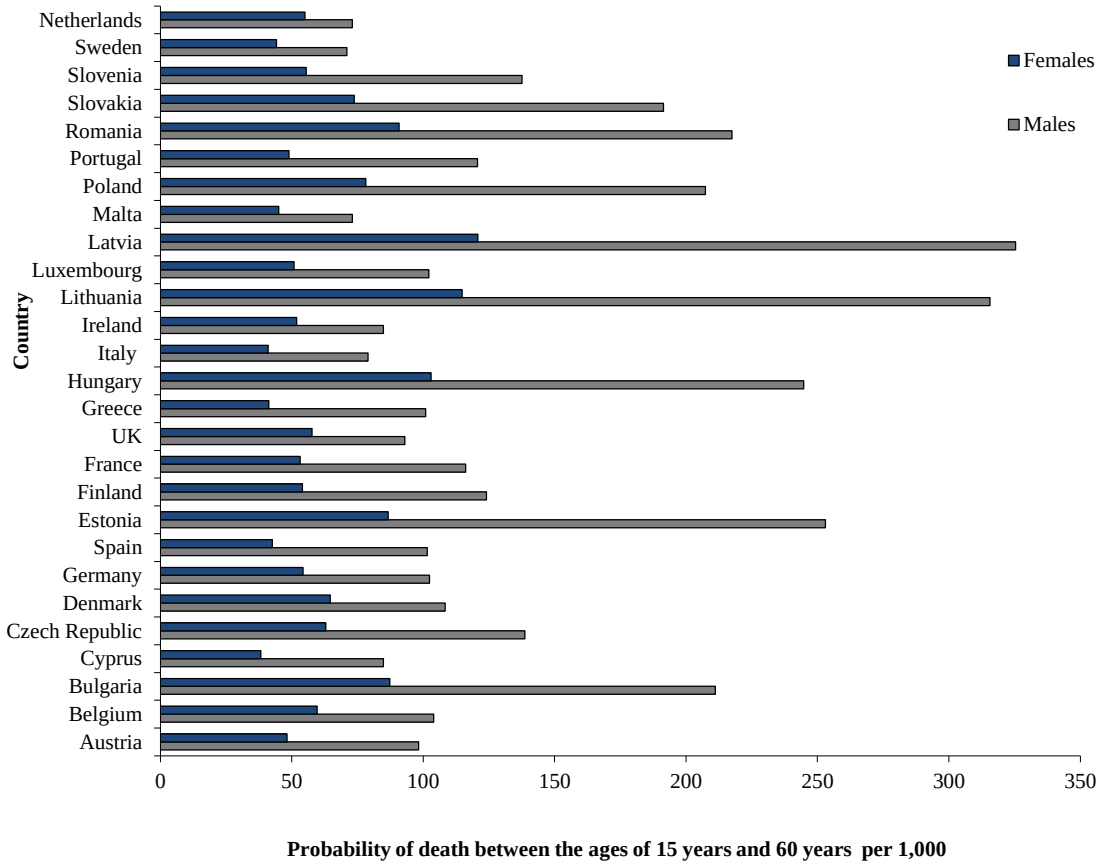
By dividing the number of deaths by the three economic groups, children, working-age population and retirement, it has been found that there is not a significant difference of deaths in infancy, childhood or in the older ages, when comparing Scotland with the rest of the EU-27 (Leon et al, 2003; Hanlon et al, 2005 and Popham, 2006). According to Leon et al (2003, p.5 and p.71)

> Scotland's overall poor position is driven, to a considerable extent, by the very high mortality among adults of working age. In these ages, men and women both lag well behind their European counterparts…At working ages it is Scottish women who have consistently had the highest mortality in Western Europe over the past 50 years, while Scottish men were second until the mid-1970s.

Leon et al found that female mortality rate has improved more than male's over the period from 1970 to 2010 (a decrease of 34% against 19%). During this time, the gap between females and males has increased (widening by 27%), "Women's health is improving faster than men's...Health disparities among countries and between men and women are widening around the world" Institute for Health Metrics and Evaluation (IHME) (2010, p.1).

Figure 2.57 gives an overview of the EU-27 probability of adult death in 2010. This shows the lowest risk of death was found in Cyprus for females (38 per 1,000) and in Sweden for males (71 per 1,000). The highest risk was found in Latvia for both females (121 per 1,000) and males (325 per 1,000). The average for the EU-27 was 63 per 1,000 for females and 143 per 1,000 for males (IHME, 2010). This shows that, in general, the Eastern European countries have the highest mortality rate between the 15 to 60 year old age group for both the male and female population. This also shows the UK as a whole (58 per 1,000 for females and 93 per 1,000 for males) is lower than the EU-27 average.

Figure 2.57 Adult Mortality Rate (Probability of Dying between 15 to 60 Years per 1,000 Population), EU-27, 2010



Source: IHME (2010)

2.2.3 The UK Migration System

Migration is the change in a permanent place of residence of an individual that involves crossing an international boundary. According to the UN, this should be for a period of 12 months or more. Following the Scottish devolution in 1999, under section five of the Scotland Act (1998), the rights of eleven policy-making areas were kept to the remit of the Westminster government. One of which was immigration policy; therefore, Scotland has had to make itself an attractive country for migrant to come to stay. Scotland already has policies in place to attract new migrants. This includes the Post Study Work strategy, Narrative of Economic Opportunity strategy, the Relocation Advisory Service and the Diaspora Plan. As Scotland does not have any control over immigration to the country, the UK immigration policy will be examined in this research. The UK government has

introduced a points-based system (PBS) for immigration, based on the Canadian's PBS of 1967, which also was adopted by Australia in 1973. The system works by allocating points for desirable characteristics the potential migrants have including education, work experience, and age.

The points based system applies to migrants from countries outside the European Economic Area[5] and Switzerland. The Home Office (2006) states the benefits of the PBS include a better way of identifying and attracting migrants who have most to contribute to the UK. They suggest that it creates a more efficient, transparent, and objective application process. Further, the system has improved compliance and reduced scope for abuse. They assume this system will lead to an increase in economic competitiveness and cultural exchange. The UK's PBS structure has five tiers, which are set out by the Home Office (2009b):

- Tier 1: A highly skilled individual who will contribute to growth and productivity – this tier was introduce on the 30th June 2008 and is composed of four categories: 1) General (currently not in use), 2) Investor, 3) Entrepreneur, 4) Post-study work. Its aim is to introduce people who are highly skilled and will add to the country's economic growth and productivity. Under this tier, people do not need a job offer or sponsorship from a UK organisation. The person will have to earn a minimum of 75 points from a possible total of 75 points for attributes including age, qualifications, previous earnings, and experience gained in the UK. The person will also have to earn a minimum of 10 points for English language and 10 points for maintenance in order to be allowed into the UK.
- Tier 2: Skilled workers with a job offer to fill gaps in UK labour force – this tier was introduced on the 27th November 2008 and is composed of four categories 1) General, 2) Intra company transfer, 3) Minister of religion, 4)

[5] The Economic Area includes the EU-27 and Iceland, Liechtenstein and Norway (even though they are not members of the European Union (EU) but citizens of these countries have the same rights to enter, live in and work in the United Kingdom as EU citizens.

Sportsperson. Its aim is to introduce people to areas where there are gaps in the UK work force. They will require a sponsorship from the employing company. The applicant must score a minimum of 70 points between attributes, English language, and maintenance in order to be allowed into the UK.

- Tier 3 (currently not in use): Limited numbers of low skilled workers needed to fill specific temporary labour shortages – under this tier low skilled workers are invited to fill any temporary labour gaps. It requires a sponsorship from the employing company. The UK Government has put this tier on hold until the proper assessments of temporary labour shortages are collected.
- Tier 4: Students – this tier was introduced on the 31st March 2009 (more restriction due in 2012) and has two categories 1) Adult student (also known as general student) 2) Child student. Under this tier, the students are required to show the support of the educational institution they wish to enter and must meet other criteria in order to obtain a minimum of 40 points.
- Tier 5: Youth mobility and temporary workers: people allowed to work in the UK for a limited period of time to satisfy primarily non-economic objectives – this tier was introduced on the 27th November 2008 and has six categories, all but the last are aimed at temporary workers, 1) Creative and sporting, 2) Charity workers, 3) Religious workers, 4) Government authorised exchange, 5) International agreement, and 6) Youth Mobility Scheme. Under this tier, young and temporary workers are allowed to come to the UK to work in areas of the economy not deemed solely as meeting economic objectives.

The immigration flow can be adjusted by increasing or decreasing the number of points required by a migrant. Presently, there are no measures in place to allow Scotland to adjust the flow of immigration to the country specifically. The fact the amount of immigration flow is determined by Westminster can make it difficult for Scotland to plan main services resources that are affected by the numbers of migrants. These include the provision of houses, school places, law enforcement, health, and child services.

There currently is not a systematic method in place in Scotland or even in the UK as a whole to record migrant movements. This makes the third component of demographic change difficult to measure. The UK depends on what is called 'symptomatic' data. Siegel and Swanson (2004, p.540) state that symptomatic data "...must be available on a continuing current basis, must relate to a substantial segment of the population, must be internally comparable from year to year, and must fluctuate principally in response to changes in population". The symptomatic data used comes from three main sources: 1) the National Health Service Central Register, which counts movements between NHS Boards within the UK (age and sex distributions of international in- and out-migrants), 2) the Community Health Index, which counts migration at a Local Authority level, and 3) the International Passenger Survey, which registers the flows in and out of Scotland for people travelling by air, sea, and through the Channel Tunnel, but only asks of the migrants' intended destination. A further tool used is The Labour Force Survey, which gives information on the 'actual' geographical distribution of immigrants. Overall, this information is far from perfect.

If we use the number of out-migration from an area *i* (O_i), in-migration to an area *i* (I_i), and the mid-year population (P_i), the migration rates can be expressed and multiplied to give persons per thousand of the population:

$$\text{Out-Migration rate} = \frac{O_i}{P_i} \times 1{,}000 \qquad [2.13]$$

$$\text{In-migration rate} = \frac{I_i}{P_i} \times 1{,}000 \qquad [2.14]$$

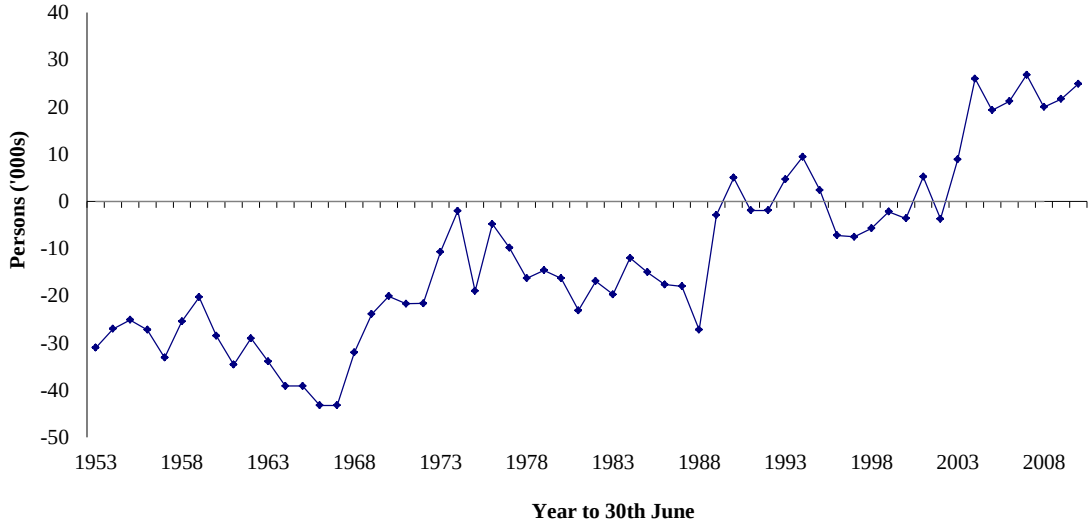
$$\text{Net-migration rate} = \frac{I_i - O_i}{P_i} \times 1{,}000 \qquad [2.15]$$

Scotland's population can grow if the number of people immigrating exceeds the number of people emigrating. Currently, the net-migration for Scotland is positive, which delays the decline of the population in the short-term. Depending on the age-specific characteristic of the positive net-migration, it can delay the population

ageing process. This highlights the importance of net-migration effects on Scotland. If younger immigrants chose to settle in Scotland, then this will help expand the number of people of working age and reduce the ageing workforce at the same time. By assuming this increase of younger migrants, this allows the Scottish Government a greater amount of tax returns (Home Office, 2007). This extra tax return has the potential to alleviate some of the pressure on the public finances and may help in areas where there are labour shortages (Scottish Government, 2009a).

Figure 2.58 shows that Scotland has historically experienced negative net-migration, with a low of minus 43,200 people in 1966. In recent years, net-migration has continued to be positive since 2003. In 2004, the net-migration reached 26,000 and continued with a positive net-migration level of 19,296 in 2005 and 21,200 in 2006. In 2007, there was the highest recorded positive net-migration of 26,811, which then dropped to 19,953 in 2008. The net-migration in 2009 increased to 21,700 and finally this number increased again in 2010 to 24,900.

Figure 2.58 Historic Net-Migration, Scotland, 1952–2010



Source: GROS (2011c)

According to the GROS (2011b), in 2010, the top five overseas countries of birth of migrants living in Scotland were from Poland (53,000), India (26,000), Republic of Ireland (22,000), Germany (20,000), and Pakistan (16,000). Comparing these Figures with those from 2001, shown in Table 2.4, shows a substantial increase of net-

migrants from Poland and India. There currently is one-fifth of the Scottish population living abroad (Scottish Government (2010a).

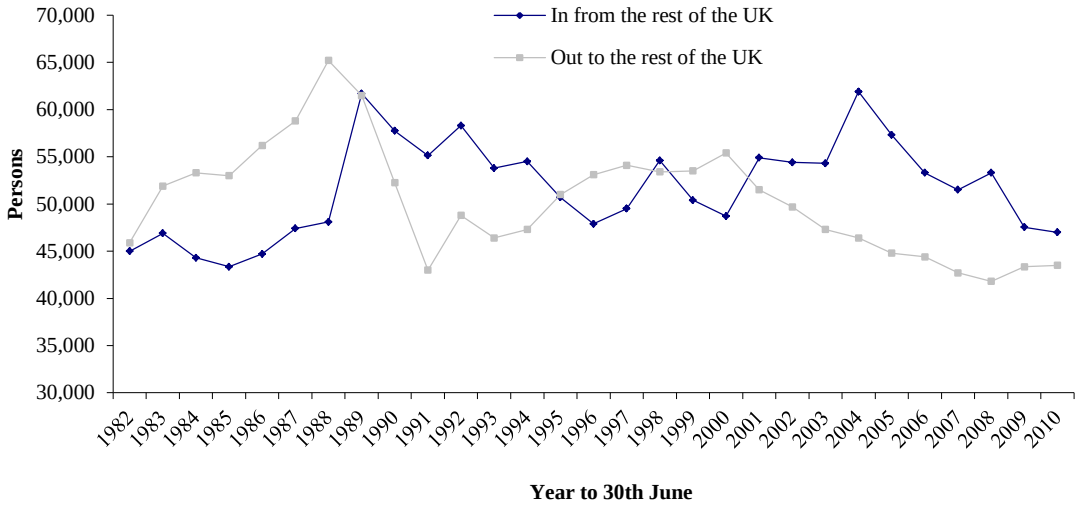
Table 2.4 Net-migration by Top Five Countries of Birth, Scotland, 2001 and 2010

	Poland	*India*	*Ireland*	*Germany*	*Pakistan*
2001	3,000	11,000	22,000	19,000	13,000
2010	53,000	26,000	22,000	20,000	16,000

Source: GROS (2011b)

Breaking down the net-migration, Figure 2.59 shows there has been a decline in the number of people migrating from Scotland to the rest of the UK in recent years. There has also been a drop in the number of people coming to Scotland from the UK. In 2010, there was a net gain of 3,500 people (47,000 in from the rest of UK and 43,500 out to the rest of the UK).

Figure 2.59 Net-Migration in From the Rest of the UK and Out to the Rest of the UK, 1982–2010

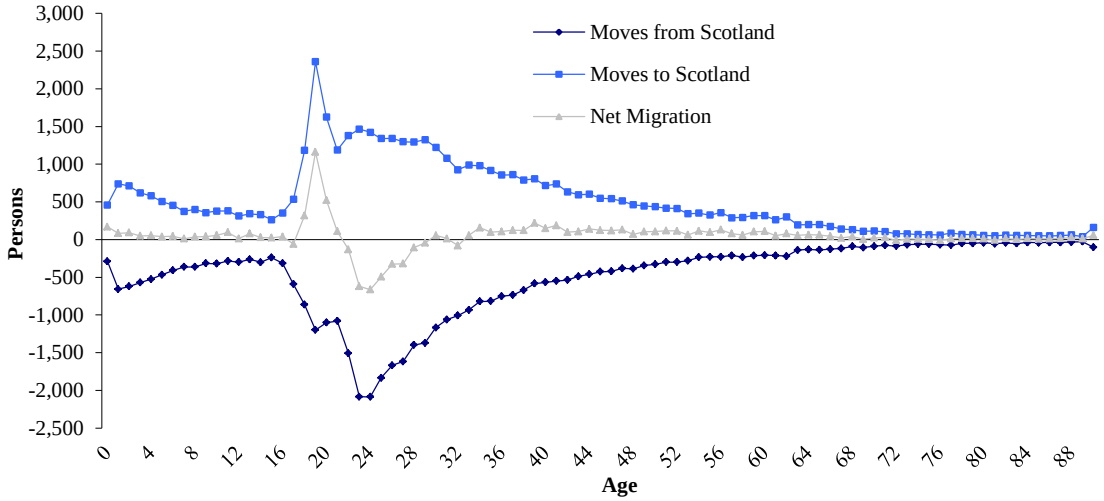


Source: GROS (2011c)

As the propensity to migrate varies with age (low in childhood, high in young adulthood and low in older adulthood), it is important to examine the age-specific rate of migrants. The peak age of migrants can have a great positive or negative impact on the economy of a country. The age-specific rate of the net-migration between Scotland and the rest of the UK can be seen in Figure 2.60 from mid-2009 to mid-2010. The statistics show the peak age of a person moving into Scotland from the rest of the UK was 19 years old. The peak net-migration shows an age range of

between 18 to 20 years of age, making a net gain of younger adults to Scotland. The peak ages of a person leaving Scotland for the rest of the UK were 23 and 24 years of age.

Figure 2.60 Age-Specific Net-migration in From the Rest of the UK and Out to the Rest of the UK, Scotland, mid-2009 to mid-2010

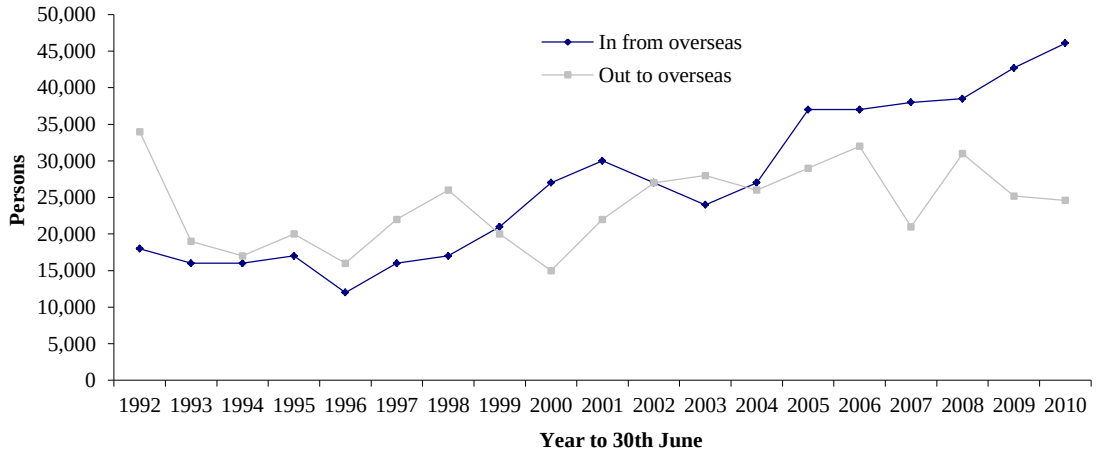


Including Armed Forces Total

Source: GROS (2011c)

In breaking down the net-migration with respect to overseas, as shown in Figure 2.61, there is a significantly higher number of people coming in to Scotland from overseas than leaving for overseas. In 2010, there was a net gain of 21,500 people (46,100 in from overseas and 24,600 out to overseas destinations)

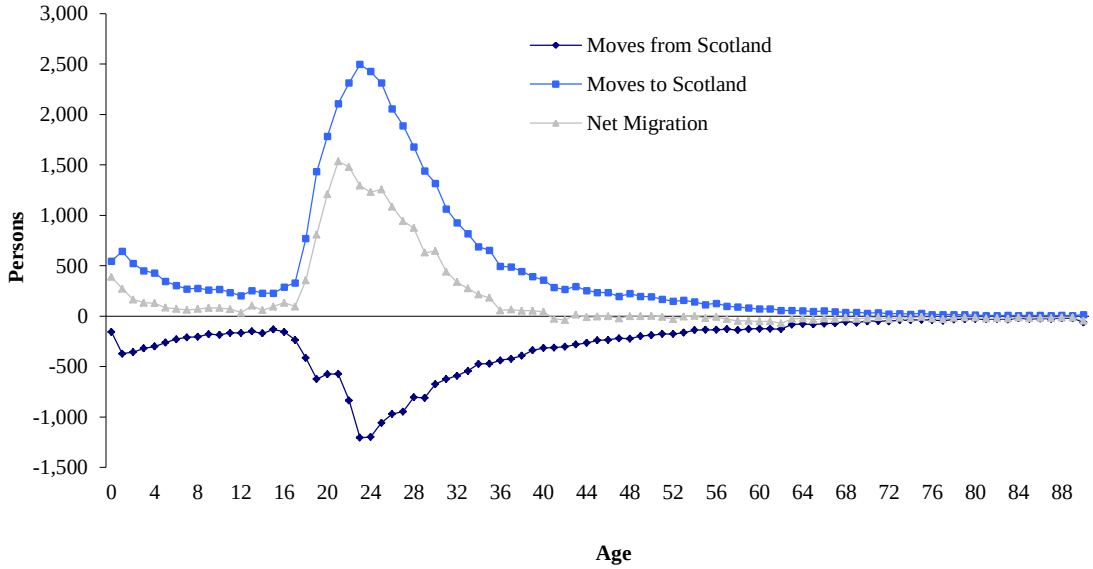
Figure 2.61 Net-Migration in From Overseas and Out to Overseas, Scotland, 1992–2010



Source: GROS (2011c)

The age-specific rate of the net-migration between Scotland and overseas can be seen in Figure 2.62 for mid-2009 to mid-2010. The statistics show the peak age of a person moving into Scotland from overseas was 23 years old. The peak net-migration shows an age range of between 19 to 31 years old making again a net gain of younger adults to Scotland. The peak age of a person leaving Scotland for overseas was also 23 years of age.

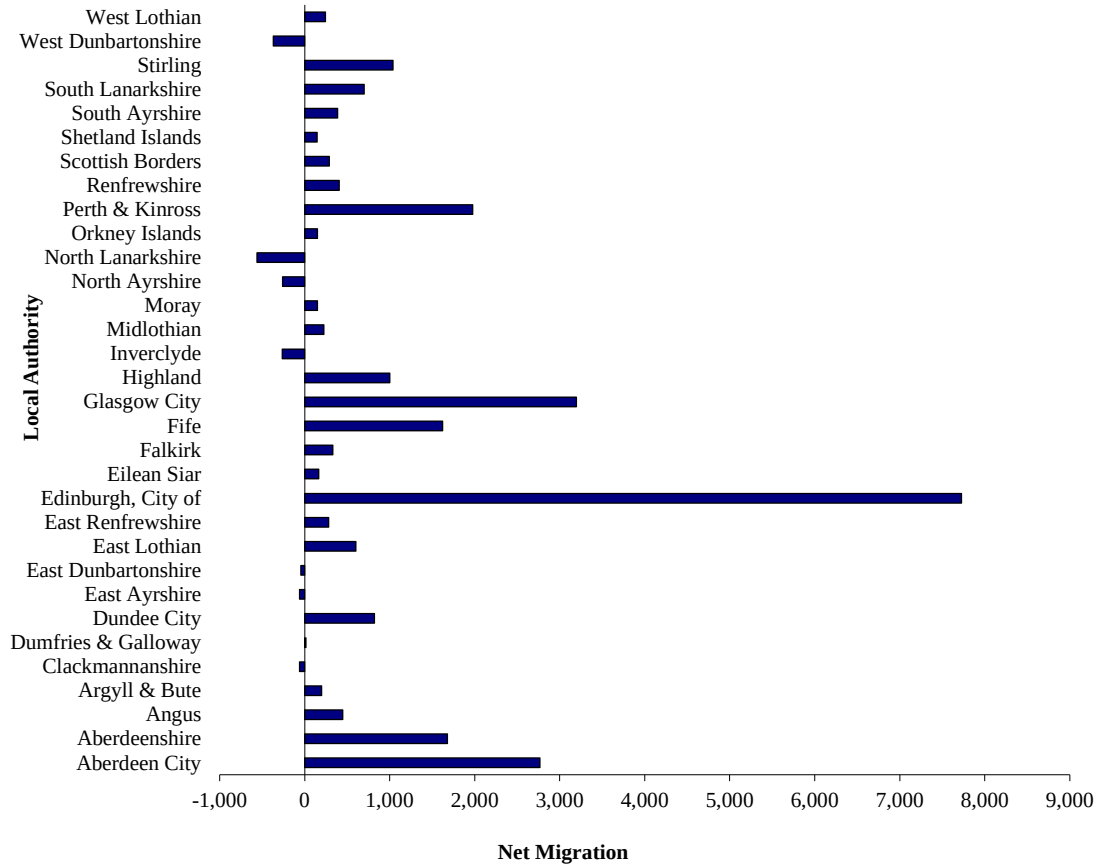
Figure 2.62 Age-Specific Net-migration in From the Overseas and Out to Overseas, Scotland, mid-2009 to mid-2010



Source: GROS (2011c)

The areas affected by net-migration vary greatly by Local Authority, as it can be seen in Figure 2.63. Edinburgh, Glasgow, Aberdeen, and Perth & Kinross are the Local Authority areas with the highest positive net-migration in 2010, while North Lanarkshire and West Dunbartonshire are the Local Authority areas that experienced the worst negative net-migration.

Figure 2.63 Net-Migration Levels by Local Authority, Scotland, 2010



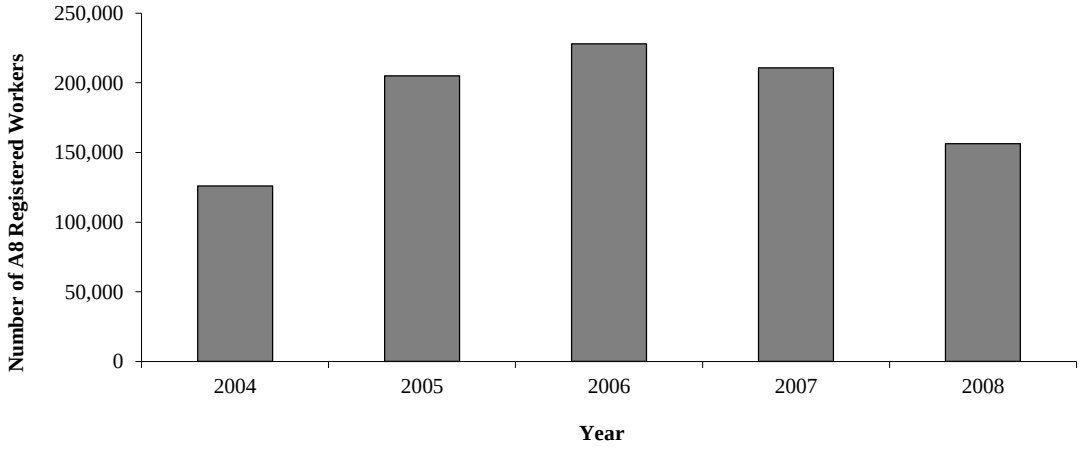
Source: GROS (2011c)

Investigating the cause of the recent increase in net-migration in Scotland, one of the main reasons found was because of the 2004 enlargement of the EU. On the 1st May 2004, 10 countries joined the EU, which were Malta, Cyprus (who already had access to the EU countries) and the Accession eight (A8) countries (Lithuania, Poland, Czech Republic, Latvia, Estonia, Hungary, Slovenia, and Slovakia). The group's population was estimated to be around 74 million people (Institut National d'Études Démographiques (INED), 2009). "Migrants from the EUA8 countries have contributed to the rise in net in-migration, with Poland being the most common country of origin...this appears to have been sustained through a period of economic downturn in Scotland" Scottish Government (2010a, p.3).

The UK was one of only a few countries that allowed the free movement of working people from the A8 countries that joined the European Union on the condition they registered with the Workers Registration Scheme. The migrants did not need to

register after twelve months of uninterrupted work or if they were self employed. The Workers Registration Scheme was abolished in May 2011. Figures 2.64 and 2.65 show the total number of A8 migrant workers that registered in the UK as a whole and in Scotland, over the period from mid-2004 to the end of 2008. Figure 2.64 shows the greatest number of registered A8 migrant workers in the UK was in 2006 with 227,875 recorded, while 2004 (125,885) and 2008 (156,295) showing the lowest years.

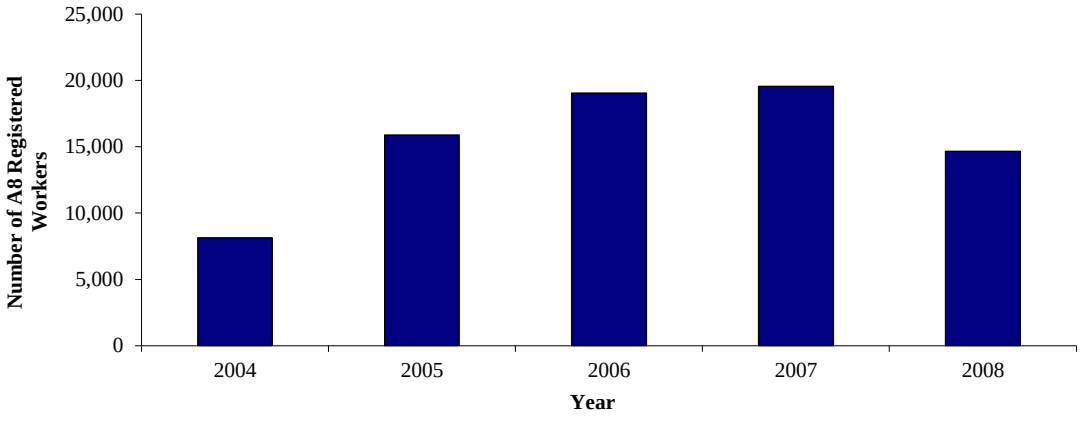
Figure 2.64 Number of Registered A8 Workers, UK, May 2004 – December 2008



Source: Home Office (2009a)

In Scotland, the number of registered A8 migrant workers peaked in 2007 with a total of 19,560. This is consistent with the peak in total net-migration in Scotland in 2007, with a positive net-migration of 26,811.

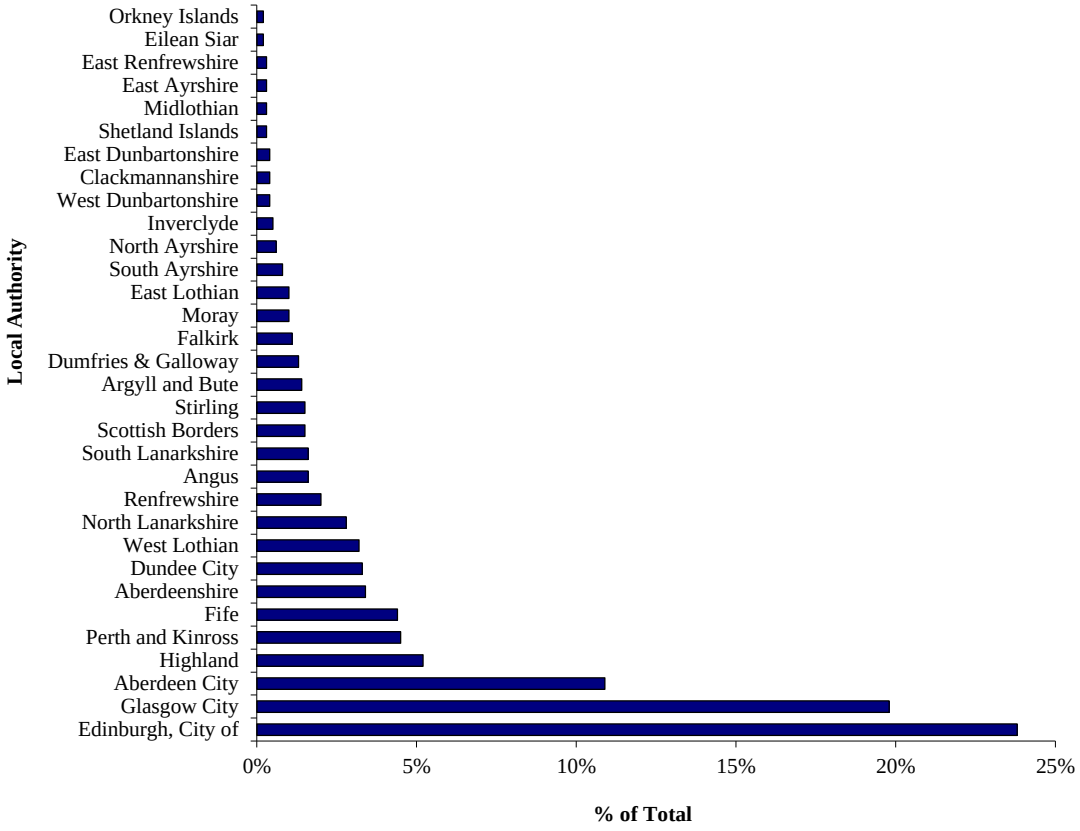
Figure 2.65 Number of Registered A8 Workers, Scotland, May 2004 – December 2008



Source: Home Office (2009a)

Figure 2.66 shows the geographical location of the A8 migrants by local authority in Scotland. This reveals that over half of the migrants registered are located in the three big cities Edinburgh, Glasgow, and Aberdeen. The rural community economies are said to have received the most positive labour market effects from the A8 net-migration, with the incoming migrants replacing the native population that leaves (Scottish Government, 2010a). The Scottish Government (2010a) also found the age profile of these migrants was dominated by the 18–34 age group, accounting for over 81 per cent. Within the individual age groups the highest was the 18–24 with almost 43 per cent, followed by the 25–34 age group at over 38 per cent. The lowest reported age group was the under 18 at 0.4 per cent.

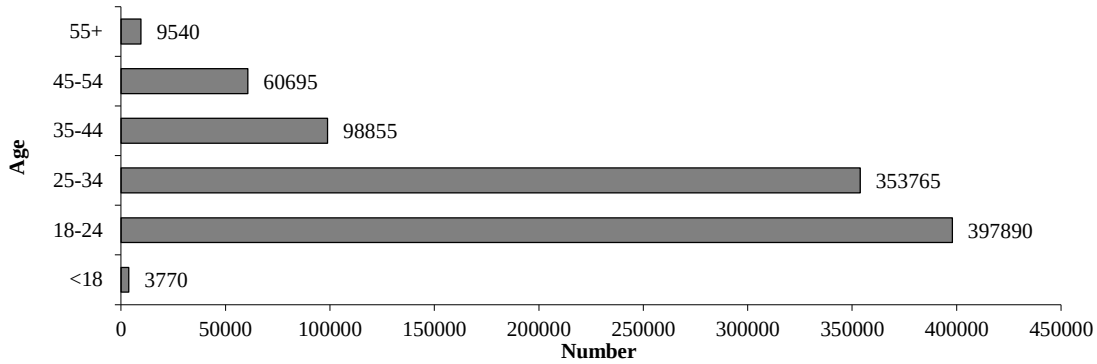
Figure 2.66 Percentage of A8 Migrants by local authority, Scotland, 2007–2008



Source: Falkirk Council (2009)

It is important that the demographics of the UK A8 migrants is understood as this impacts on the size and age of the total population. Figure 2.67 shows the age profile of the A8 migrants to the UK.

Figure 2.67 Age Profile of A8 Migrants, UK, May 2004 – December 2008

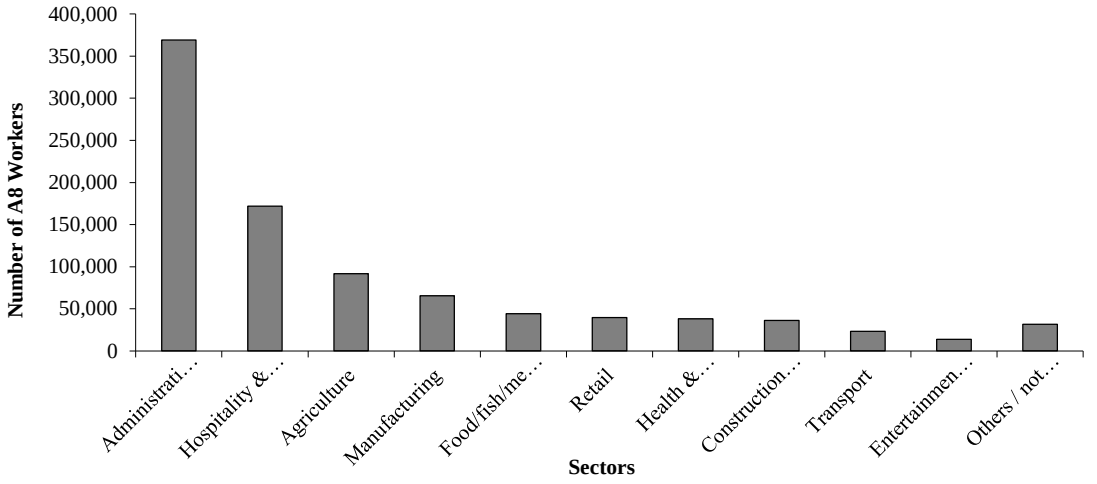


Source: Home Office (2009a)

From May 2004 to December 2008, according to the Home Office (2009), the top three A8 countries with the highest approved migrant applications were Poland, which had the highest proportion with 66 per cent, followed by Slovakia with 11 per cent and Lithuania with 9 per cent. The remaining five other countries made up the other 14 per cent.

Figures 2.68 and 2.69 show the sectors affected by the increase of the A8 migrants for the UK and Scotland. During the period from mid-2004 to the end of 2008 in the UK, the 'administration, business & management' sector employed the most A8 migrants with almost 40 per cent of the total A8 workforce. Second is the hospitality and catering sector that has over 18 per cent and the third largest employing sector in the UK is agriculture with almost 10 per cent.

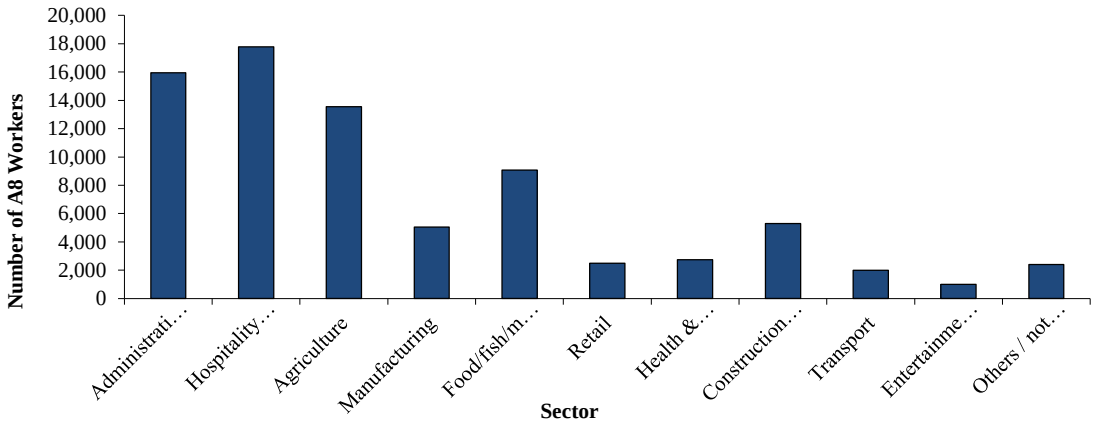
Figure 2.68 Top 10 Sectors Distribution of Employers of Registered Workers, Cumulative Total, UK, May 2004 – December 2008



Source: Home Office (2009a)

In the period from mid-2004 to the end of 2008, the Scottish hospitality and catering sector employed the most A8 migrants with 23 per cent of the total A8 workforce. Second is the administration, business & management sector that had over 20 per cent and the third largest employing sector in Scotland is agriculture with 17.5 per cent. The top three employing sectors in Scotland is the same top three employing sector for the UK as a whole, though in a different order. According to the Home Office (2009a), in 2008, more than 86 per cent of A8 migrants worked 35 hours per week, the same percentage than during the period from May 2004 to December 2008. In addition, 68 per cent received an hourly rate of £4.50 to £5.99, with a further 24 per cent receiving £6.00 to £7.99 per hour. For the period from May 2004 to December 2008, the figures were 74 per cent receiving hourly rate of £4.50 to £5.99 and 19 per cent receiving £6.00 to £7.99 per hour.

Figure 2.69 Top 10 Sectors Distribution of employers of Registered Workers, Cumulative Total, Scotland, May 2004 – December 2008



Source: Home Office (2009a)

It is important to understand net-migration at a Local Authority level. The A8 migrants profile will be examined in more depth. Glasgow was chosen as a reference because of the city being one of the top three for A8 migrants to register in (others being Aberdeen and Edinburgh). The Stevenson Report (2007) commissioned by the Glasgow City Council has facilitated a more detailed examination of the A8 migrants in Glasgow. The report shows that up until 2007, Glasgow had 3,136 migrants workers registered from the A8 countries, a breakdown can be seen in Table 2.5 (although the Glasgow City Council estimated the total to be far higher at around 5,000). The report found that Polish migrants showed the greatest number of

registered workers at 2,224, followed by Slovakian migrants at 376. This is similar to the UK statistics.

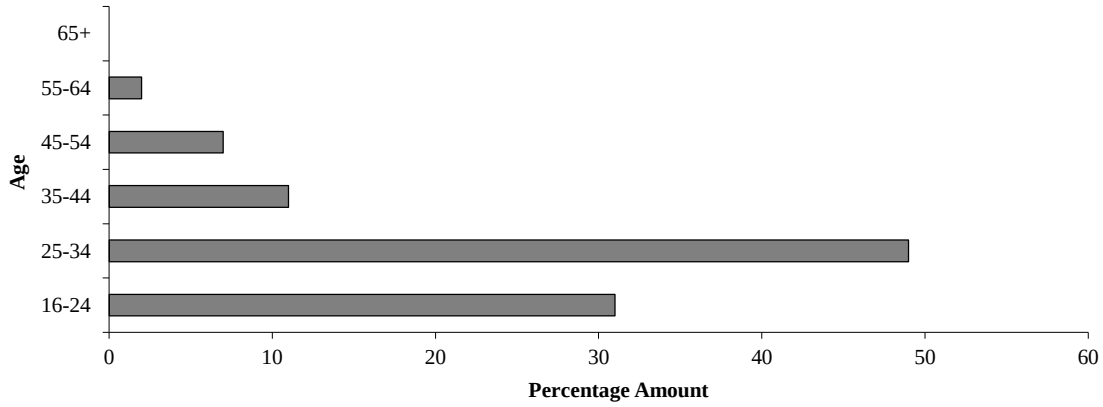
Table 2.5 Breakdown of A8 Migrants in Glasgow (Not Including Self-Employed), 2007

A8 Country	*Number and Percentage*
Poland	2,224 (70.9%)
Slovakia	376 (11.9%)
Czech Republic	213 (6.8%)
Latvia	147 (4.8%)
Lithuania	85 (2.8%)
Hungary	70 (2.2%)
Estonia	17 (0.5%)
Slovenia	4 (0.1%)
Total	***3,136***

Source: Stevenson (2007)

The Stevenson report showed that 80 per cent of the A8 migrants were between 16–34 year olds, similar to the UK Figures. A breakdown of the age groups for the Glasgow is contained in Figure 2.70.

Figure 2.70 Breakdown of Age Groups in Percentage, A8 Migrants in Glasgow, 2007



Source: Stevenson (2007)

The study found the ratio of male to female respondents in the survey was 60:40 and, of the A8 migrants that arrived in Glasgow, only 6 per cent reported to have dependants with an average of 1.5 children. The A8 migrants are working in many

sectors in Glasgow with the greatest number to be found in hospitality and catering (19%) and construction and land services (12%), as shown in Table 2.6.

Table 2.6 Percentage of A8 Migrants in the Employment Sector, Glasgow, 2007

Employment Sector in Glasgow	*% of A8 Migrants*
Hospitality and Catering	19
Administration, Business and Management	10
Manufacturing	10
Construction and Land services	12
Food Processing	8
Retail and related services	5
Transport	6
Government Health and Medical services	2
Arts, Entertainment, Leisure and Sport	1
Professional	1
Agriculture	0
Other	26

Source: Stevenson (2007)

The majority of A8 migrants who are working in jobs are unskilled manuals (59%), followed by semi-skilled manuals (21%) and skilled manuals (20%). The report shows this does not match their skills. The migrants arriving in Glasgow were found to be educated to a higher level, 16 per cent had degrees, 19 per cent had postgraduate degrees, 9 per cent had diplomas, and a further 12 per cent had apprenticeships. The local level statistics found in Glasgow are generally similar to the UK national statistics, with exception of the intended length of stay. At the local level, migrants have a higher intention to stay in Scotland than over the UK as a whole. With the level of A8 migrants entering Scotland in great numbers, it is important to examine the effect of EU enlargement. A variety of sources believe that the A8 migrants in Scotland and in the UK as a whole have been a positive event, while others argue that this experience ranges from neutral to negative. The Scottish Government is in favour of the increase in the net-migration from the A8 countries to Scotland.

One of the areas affected by migrants is the country's infrastructure including public services, housing, utility supplies, health, and education. A Scottish Government

(2009a) report found the increase in net-migration of the A8 has had little significant impact on the infrastructure. For general public services, they found there was evidence of a rise in enquiries about services. This has not transpired into an increase in services. They found this could be because of a language barrier, preventing access, or to what they refer to as a high degree of 'self-sufficiency' among migrants in communities. When they examined housing stock, they found that most of the A8 migrants live in private rented housing, meaning there is no evidence of migrants from the A8 placing pressure on any other areas than the renting market.

In the areas of education, the Scottish Government (2009a) found some evidence of increased need for tuition on the English language in order to help migrants' children understand the Scottish curriculum, but that general demand for educational services showed little evidence of any increases. Regarding health, the Scottish Government found that migrants are placing little demand on health services and the government attributes this to the fact the migrants are usually young, in employment and do not have any dependants. Stevenson (2007) found that only 58 per cent of A8 migrants surveyed were registered with a GP in Glasgow and of that, only 32 per cent had actually used the health service, of which only 2 per cent had found some issues with assessing the health service.

When the 10 countries joined the EU in 2004, it brought to Scotland an injection of younger workers. In examining the age profile of the A8 migrants in the UK, it has been found they were mostly young and single: "The vast majority of applicants who have registered on the WRS (Workers Registration Scheme) are young and single…Around 44 per cent are aged between 18 and 24 and a further 39 per cent are aged between 25 and 34" Gilpin et al (2006, p25). According to the Scottish Government (2009a, p.3), the effects on the Scottish economy have been overall positive: "Recent increases in net immigration, from A8 countries and more widely, has been found to increase output and employment…There is also evidence that consumers may have benefited through reduced prices…There was little or no evidence that immigrants have had a major impact on native labour market outcomes for example wages and unemployment".

Fix et al (2009) investigated the UK labour market and found almost seven out of ten 'new' workers in the UK were immigrants, and out of these seven, one came from an A8 country (BBC, 2009). The migrants are assumed to bring benefits to the labour market. Rolfe and Metcalf (2009, p.20) found the benefits of employing migrants is they are likely to accept low pay, poor conditions and fluctuating hours. They also found that migrants affect positively on the economy. They state that migrants "...fill vacancies in essential production and service roles, research studies frequently report employers as stating they could not function without migrant labour, or would not have been able to grow".

There has been no evidence to support the idea these labour shortages would have been met by native workers, for example, in examining the A8 migrants, Wright (2008, p.41) found the "A8 nationals have taken jobs that would have remained unfilled". Blanchflower et al (2007) found the A8 migrants have had no significant effect on native wage levels and unemployment and the latest immigration helped suppress the pressure on inflation. Gilpin et al (2006) also found no statistical evidence to show the migration of the A8 countries has had a detrimental effect on any of the UK countries; in fact, they describe the effect as a positive one. They found that migrants mostly fill the lower end of the skilled jobs in the UK and have not taken away opportunities from native workers. They point out the A8 migrants earn between 47 per cent and 63 per cent of average UK hourly earnings. In Scotland, many overseas migrants, especially from A8 countries, are working in low skill, low pay jobs, which are below their qualification level (Scottish Government, 2010a).

Research carried out by Workpermit.com (2007) found The Institute of Directors (a body that represents businesses) held a poll in 2006 asking 500 employers in the UK what they thought about migrant workers. They found that employers rated migrants as harder working and as having more skills than their UK counterparts. It was also found that migrant labour is more reliable and outperforms indigenous employees in a wide range of areas. 61 per cent of employers said their main reason for hiring migrants was because of a lack of specifically needed skills among the UK labour market, while 16 per cent hired migrants as a way to save money on labour costs. It

was further found that most of the members felt that migrants had made a positive contribution to the economy.

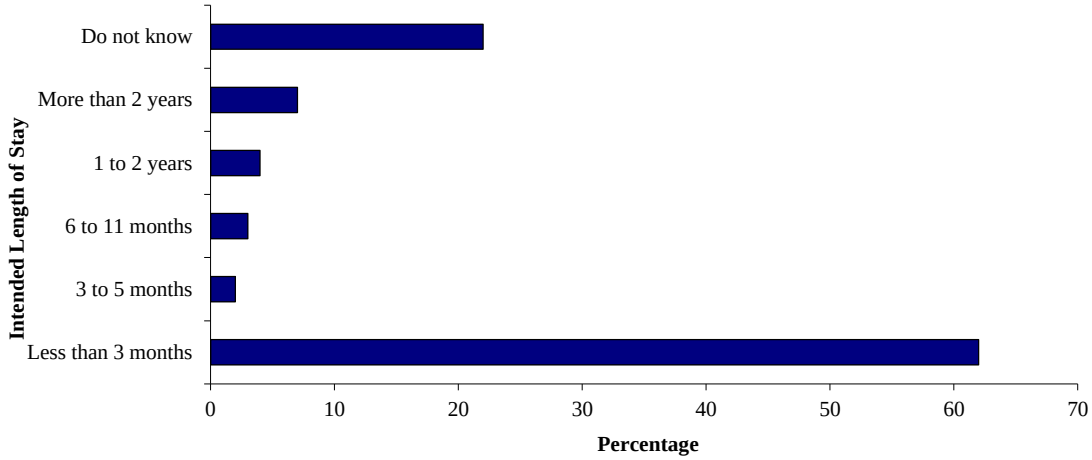
By examining the average distribution of income over a 'fiscal' life cycle of a person, under school age migrants can be viewed as a public cost to society. Once migrants gain paid employment (dependant on employment and rewards), they begin to contribute to society; then, as they retire, they become a public cost once again. In this sense, migrants have less public money spent on them as they do not require state funded education and around half of the A8 migrant return home, meaning they do not require a state pension; therefore, it is a benefit to Scotland if the migrants pay more in tax revenues than they get back in the form of benefits. While this is an assumption of the current situation, this will change in the future depending on the length of stay of each migrant. Riley and Weale's (2006) study found A8 migrants to the UK brought economic growth. The use of migrants may be a way to help alleviate the pressures on areas such as the provisions for public pensions, but as the migrants' get older themselves, they will become a drain on the pension fund in the future as they will require a pension.

Migration Watch (2006) calculated a value of contributions an A8 migrant worker and their employer would make to be around £2,900 per year (in the form of tax, employees, and employers' national insurance contributions). This value is around £5,500 for the average UK worker. They also calculated the cost of an A8 migrant for receiving public benefits and services would be £2,750 (health = £1,080, public order and safety = £580, transport = £360, child benefit = £140, tax credit = £260, children's education = £330). They conclude the contribution and the benefits consumed by the A8 migrants almost cancel each other out. They also state the A8 migrants have little to add to the country and that A8 migrants' contribution to the Scottish economy was overall slightly negative. Further, Migration Watch UK (2007a) found the economic benefits of this mass net-migration are small and the social costs are high. They state there is no fiscal benefit to the host country.

Information regarding the migrants intended length of stay is important in order to plan public resources in appropriate areas. Figure 2.71 shows the results of research carried out by the Home Office (2009a) during the year 2008 about the A8 intentions

to stay in the UK. They found the greatest number (62%) of A8 migrant planned to stay in the UK for under three months and the least (2%) planning to stay between three to five months.

Figure 2.71 Intended Length of Stay as a Percentage, A8 Registered Workers, UK, 2008



Source: Home Office (2009a)

At present, the Scottish Government (2009a) has not found clear evidence regarding migrants' intentions to stay in Scotland at a national level. At a local level, the Stevenson report has figures for the A8 migrants in Glasgow for 2007. Table 2.7 shows the intended length of stay of the surveyed A8 migrants. What is significant in this table is the percentage of the migrants planning to stay in Glasgow in the longer-term, with as much as 23 per cent planning to stay for more than ten years and only 2 per cent intending to stay up to three months. This is a significant difference from the UK national figures showing 62 per cent of A8 migrant planned to stay in the UK for under three months.

Table 2.7 A8 Migrant Intended Length of Stay in Scotland, 2007

How long do you intend to stay in Scotland?	*% of A8 nationals*
Up to 3 months	2
4 months to 1 year	3
13 months up to 5 years	23
5 years and 1 month to 10 years	12
More than 10 years	23
Don't know	37

Source: Stevenson (2007)

Fix et al (2009) research found the UK has experienced high turnover in A8 migrant workers, particularly from Poland. In 2008, there was a 32 per cent drop in the number of approved workers registration applications for Polish migrants. The impact of this caused an overall drop in migrants' approved applications by 26 per cent from 2007 to 2008. In examining the number of A8 migrants who came to the UK between May 2004 and March 2009 and have left again, Fix et al (2009) put the figure at nearly half, suggesting that this large departure of migrants is because of the recent economic climate in the UK.

2.3 Conclusion

In examining the mortality, fertility, and net-migration in Scotland, the past trends have provided an insight into how the country has arrived at its current demography. The natural population change in Scotland has been decreasing for the most of the last six decades. Since 2006, the number of births has outnumbered the number of deaths, the Scottish mortality rate has been decreasing and the number of deaths has reduced over the long-term with around 80,107 deaths in the early 1900's to a current level of 53,967 in 2010. When examining life expectancy figures, we find that Scotland is marginally higher than the EU-27 average for males and lower than the EU average for females.

Overall, for both genders, Scotland's life expectancy is considerably low in comparison with the western countries of the EU-27. Scotland also has the lowest life expectancy within the UK. By examining the ASMR for both male and female, it shows the number of deaths has decreased at all ages over the life cycle. Correspondingly, examining the survivor functions show the survivor rates have increased for both male and female at all ages. While there has been a considerable improvement in life expectancy, improvements in healthy life expectancy have not kept the same pace. Life expectancy and in particular healthy life expectancy in Scotland also exhibits a significant variance over Local Authority areas. When deprivation areas are considered, there is a negative correlation found between life expectancy and areas of deprivation. This highlights the significant impact deprivation has on Scottish mortality and morbidity.

The fertility rate for Scottish women of childbearing age has reduced sharply, the TFR rate at its peak in 1964 was 3.09, compared to its current rate in 2010 of 1.75. There has been a significant decline in the number of births, with 104,355 in 1964 compared to 58,791 in 2010. Scotland's fertility decline is not in isolation. There has been a global reduction in TFR from an estimated 5.0 in the early 1950's to a 2.7 TFR by the beginning of this century. Although in recent years, Scotland has experienced an increase in the birth rate. It has become apparent the peak age of motherhood in Scotland has increased. The peak age is currently 31 years, dropping from a high of 25 years of age in the early 1950's. Overall, the trend in Scotland is that women are having children later in life and having smaller families. It is reasonable to assume there is a link with the fact the first child is born later in a women's life, which has decreased family size and affected the Scottish fertility trend.

When examining net-migration, King (1993) predicted that well into the twenty-first century, international net-migration flows would play a big part in the demographic and socio-economic future of the developed countries. King suggests this was because of the increasing demographic pressure of the third world countries and the opening up of Eastern Europe. This has been evident in Scotland. Scotland has historically experienced negative net-migration, with a low of negative 43,200 people in 1966. Net-migration has continued to be positive since 2003, with the highest recorded positive net-migration of 26,811 in 2007. The 2010 figures show the peak age of the positive net-migrants from within the UK was 19 years old (peak age group 18–21 year olds) and the positive net-migrants from overseas was 23 year olds (peak age group 19–31 year olds). This increase of young people has a significant impact on the working-age group of Scotland and therefore the economy.

Chapter 3 The Future Demography of Scotland

3.1 Introduction

In this chapter, the projected population of Scotland will be examined in order to ascertain what will happen to the size and age structures of the Scottish population if current trends continue, i.e., how fertility, mortality and migration will act together to influence population growth or decline in the future. To find a partial answer to this, first an examination of the official population projections for Scotland will be investigated. These projections will be replicated utilising the Popgroup software; then, once the official projections are replicated, these will be subject to varying levels of fertility, mortality, and migration levels. The potential implications these results may have for the future working-age population will be examined.

There is only one set of population projections for Scotland, the National Population Projections, carried out by the ONS on behalf of the GROS. These projections are compiled biennially using the cohort component method (first used by Cannan in 1895) with a one-year lag and are available at sub-national level. There are only two other population projections for the UK, which are produced by the UN and Eurostat. Both projections also use the cohort component method. The UN takes the start of the year as 1st July and is compiled biennial. The Eurostat produces its population projections every three or four years, beginning on the 1st January. Both do not include input from the UK and do not disseminate the countries within the UK; therefore, they are not as useful as the one from the National Population Projections, which will be investigated in this research.

The GROS 2008-based population projections (latest available in spring 2011) are based on the cohort component model. The cohort component model is a discrete-time model of population dynamics, where only three events take place: birth, mortality, and migration (referred to as components of population change). The method allows for differences in the fertility, mortality and migration levels by age groups at a given time. The method allows for detailed aspects of the population structure to be projected. The cohort component method takes a population structure by single year of sex, age (up to 90 and over) and area, and produces the first year's

projections. It does this by taking the estimated population and ageing it on by one year, adding on the number of births, subtracting the number of deaths, and making adjustments for the net-migration. Once the level of natural change and net-migration are calculated in the initial year of the projection, this process can be performed repeatedly until the desired time period has been reached.

The projection period is usually 25 years for Scotland, the more years projected the greater the uncertainty in accuracy. The population of Scotland is the number of people for the period of one year starting at the 30th June, adjusted for the number of births, deaths, and net-migration between the years. The GROS projections make assumptions regarding the future levels of Scottish fertility, mortality, and migration, which are based on observations over a five-year reference period. These population projections are then used to plan future welfare provisions by the government at both national and local level. The projections are also used for planning purposes by other sectors including health, private and voluntary. The forecasts are made to indicate the actual predictions, which the GROS and ONS feel reasonably confident. These are referred to as 'principle projections'.

3.2 GROS Population Projections: The Model and Assumptions

The published assumptions by the GROS, shown in Table 3.1, are first the principal projection (agreed on by both the ONS and all Registrar Generals for the different countries making up the UK). The analytic projections are then produced, including six standard high/low variants, related to the three components, fertility, life expectancy, and migration. The GROS also publishes a special case of zero migration scenario (natural change) and a combination of variants to produce high and low population variants. It is impossible to build in unforeseen shocks, government policy changes and of course any population behavioural changes.

Table 3.1 GROS Population Projection Variants and Scenarios

		Fertility	*Life Expectancy*	*Migration*
1	Principle Projection (P)	Principle	Principle	Principle
Standard Single Component Variants				
2	High Fertility (HF)	High	Principle	Principle
3	Low Fertility (LF)	Low	Principle	Principle
4	High Life Expectancy (HL)	Principle	High	Principle
5	Low Life Expectancy (LL)	Principle	Low	Principle
6	High Migration (HM)	Principle	Principle	High
7	Low Migration (LM)	Principle	Principle	Low
Combination Variants				
8	High Population (HP)	High	High	High
9	Low Population (LP)	Low	Low	Low
Special Case Scenario				
10	Zero Migration (NC)	Principle	Principle	Zero

Source: GROS (2009a)

3.2.1 GROS Population Projection Methodology

The population projection process carried out by the GROS uses an in-house Microsoft Excel macro system software to produce the population projections. The GROS system runs on 36 "building bricks" (or output areas), shown in Table 3.2. These are areas that have been aggregated to Local Authority and NHS board areas. The building bricks are 32 council areas, but with East Renfrewshire, North Lanarkshire, South Lanarkshire, and West Dunbartonshire split into two parts. These areas are aggregated from data zones to give "best fit" populations for NHS board areas. The system is run for these areas and at the end, an adjustment is made for NHS board areas.

Table 3.2 Scottish 'Building Bricks'

1	Aberdeen City	19	Inverclyde
2	Aberdeenshire	20	Midlothian
3	Angus	21	Moray
4	Argyll & Bute	22	North Ayrshire
5	Clackmannanshire	23	North Lanarkshire 1
6	Dumfries & Galloway	24	North Lanarkshire 2
7	Dundee City	25	Orkney Islands
8	East Ayrshire	26	Perth & Kinross
9	East Dunbartonshire	27	Renfrewshire
10	East Lothian	28	Scottish Borders
11	East Renfrewshire 1	29	Shetland Islands
12	East Renfrewshire 2	30	South Ayrshire
13	Edinburgh, City of	31	South Lanarkshire 1
14	Eilean Siar	32	South Lanarkshire 2
15	Falkirk	33	Stirling
16	Fife	34	West Dunbartonshire 1
17	Glasgow City	35	West Dunbartonshire 2
18	Highland	36	West Lothian

The GROS granted access to their methodology and notation, which is shown here to provide an explanation of the projection process in detail for the GROS 2008-based sub-national projections. The GROS local scaling factors for fertility, mortality, and migration are shown in Appendix A. To calculate the end population for each projected year, the GROS assumes the following notation:

B Building brick, B = 1, 2, …, n_B; $n_B = 36$

s sex, s = 1 (males), 2 (females).

$P^B_{y,x,s}$ The total population in building brick B of sex s aged x last birthday as of June 30th in calendar year y: y = 2008, 2009, …, n; x = 0, 1, 2, …, 88, 89, 90[6].

[6] The age group marked x=90 refers to individuals aged 90 years and over

$M^{B}_{y,x,s}$ The net civilian migration figure for the period from July 1st in year y-1 to June 30th in year y for building brick B for people of sex s and age x last birthday as of June 30th in calendar year y

$B^{B,controlled}_{y,s}$ The number of births of sex s in building brick B during the year ending June 30th in calendar year y.

$D^{B}_{y,x,s}$ The number of deaths of sex s in building brick B during the year ending June 30th in calendar year y. x = 0, 1, 2, …, 89, 90.

$F^{B}_{y,x,s}$ The number of Armed Forces personnel in building brick B of sex s aged x last birthday as of June 30th in calendar year y: y = 2008, 2009, …, n; x = 0, 1, 2, …, 88, 89, 90.

$Z^{B}_{y,x,s}$ 'Miscellaneous adjustments'.

For each projected year (y), the 'uncontrolled' end population is calculated by ageing on the previous year's population (y-1) with the following formulae (ensuring the civilian population is projected forward through the component method of population projection):

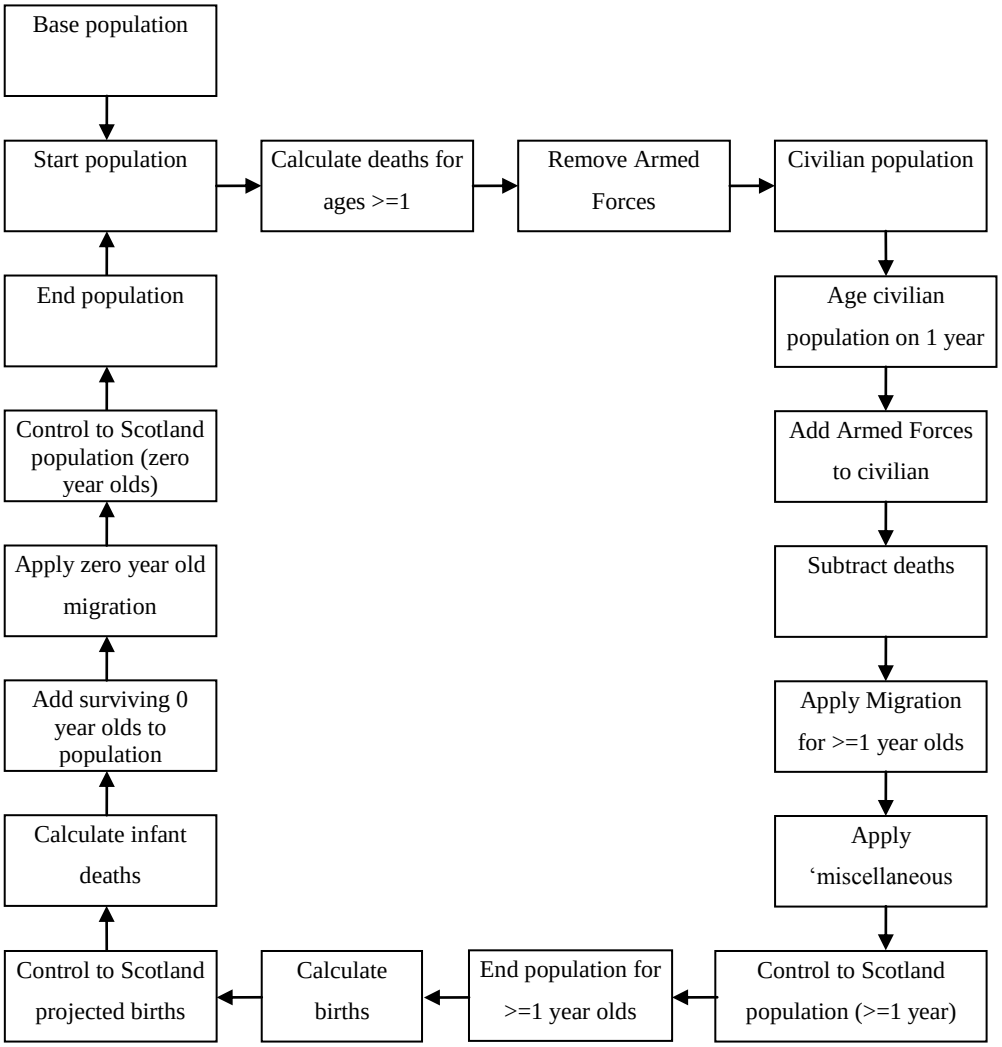
$$P^{B}_{y,0,s} = B^{B,controlled}_{y,s} - D^{B}_{y,0,s} + M^{B}_{y,0,s} + Z^{B}_{y,x,s}$$

$$P^{B}_{y,x,s} = P^{B,controlled}_{y-1,x-1,s} - F^{B}_{y-1,x-1,s} + F^{B}_{y,x,s} - D^{B}_{y,x,s} + M^{B}_{y,x,s} + Z^{B}_{y,x,s} \text{ (for x = 1, 2, 3,…, 89)}$$

$$P^{B}_{y,90,s} = P^{B,controlled}_{y-1,89,s} + P^{B,controlled}_{y-1,90,s} - D^{B}_{y,90,s} + M^{B}_{y,90,s} + Z^{B}_{y,x,s}$$

The three components of population change and the starting population are taken in order to create the projected population one-year on from the base date. The order in which the calculations are done is shown in Figure 3.1.

Figure 3.1 GROS Population Projection Process



Source: GROS (2010c)

The GROS (2010c) outlines the procedures for population projections as follows: the Armed Forces population and miscellaneous adjustments, which can vary annually, is fixed beforehand. The net-migration assumptions for building bricks are based on recent trends in migration (allowing for events that are known). Specific age and sex distributions for migration are assumed for health boards, which are based on recent trends found in the National Health Service Central Register and Community Health Index. Both of these are observed over a three-year period and are controlled to the age and sex distribution used for Scotland in the national projection. In addition, trends in the age and sex distributions from the 2001 Census data on migration is used for building bricks if required. The GROS uses the Kannisto-Thatcher

(Thatcher et al (2002)) survivor ratio method to estimate the population aged 90–94, 95–99 and 100+, with the results controlled to ONS estimates of all the population 90+.

In controlling for figures, the ONS provides Scottish level population totals by sex and single year of age for each projected year. These are denoted here by $P^{ONS}_{y,x,s}$. At the end of each cycle of the projections, the values of the $P^{B}_{y,x,s}$ are controlled so they are consistent with the ONS Scottish totals. This is achieved by applying the following two-step procedure for each combination of y, x and s in turn.

Step 1

$$P^{B,controlled}_{y,x,s} = \text{int}\left[\frac{P^{ONS}_{y,x,s}}{\sum_{B} P^{B}_{y,x,s}} P^{B}_{y,x,s} + 0.5 \right], \text{ for B = 1, 2, …, } n_B \text{; 'int' is 'the integer part of'}$$

After each $P^{B}_{y,x,s}$ has been controlled in this way, the number of deaths in the building brick is adjusted:

$$D^{B}_{y,x,s} = D^{B}_{y,x,s} - \left(P^{B,controlled}_{y,x,s} - P^{B}_{y,x,s} \right)$$

Where necessary, the deaths are bounded below by zero:

$$D^{B}_{y,x,s} = \min\left\{0, D^{B}_{y,x,s}\right\}$$

Step 2

Let $m = P^{ONS}_{y,x,s} - \sum_{B} P^{B,controlled}_{y,x,s}$, and then distribute this difference between the building bricks by repeating the following procedure m times:

(a) Let counter = 0

(b) Generate a random number k from a discrete uniform distribution defined on the integer range $\{1,2,...,n_B\}$.

(c) If $D^{B=k}_{y,x,s} = 0$ and $\frac{m}{|m|} = 1$ and counter < n_B then go back to (a); otherwise carry on to (d).

(d) Adjust the population total and number of deaths in building brick k as follows:

$$P^{B=k,controlled}_{y,x,s} = P^{B=k,controlled}_{y,x,s} + \frac{m}{|m|}$$

If $D^{B=k}_{y,x,s} > 0$ then $D^{B}_{y,x,s} = D^{B}_{y,x,s} - \frac{m}{|m|}$

According to the GROS (2010c), the births are calculated by the GROS at the end of each cycle, where the projected number of births is found by applying fertility rates to the number of women at each childbearing age (15–46 year olds). The births are being predicted for local areas, the assumed national fertility rates are adjusted by a 'fertility scaling factor' (5 years observations) in order to account for local variations observed in the period preceding the projection. The following notation is assumed:

r^B_b Fertility scaling factor for building brick B (b stands for 'birth rate')

A^B_b Average number of births in building brick B over base year and previous five years

$A^{Scot}_b = \sum_B A^B_b$ Average number of births in Scotland over base year and five previous years

E^B_b Expected number of births in building brick B, based on ONS fertility rates and base year population.

$E^{Scot}_b = \sum_B E^B_b$ Expected number of births in Scotland, based on ONS fertility rates and base year population.

$g_{b,y,x}$ The fertility rate for Scotland for women of age x in year ending June 30th in calendar year y, provided by the ONS. x=15, 16, …, 46.

B_y^B The number of births in building brick B during the year ending June 30th in calendar year y.

$B_{y,s}^B$ The number of births of sex s in building brick B during the year ending June 30th in calendar year y.

The fertility-scaling factor for building brick B is calculated using the following formulae:

$$r_b^B = \frac{A_b^B}{A_b^{Scot}} \frac{E_b^{Scot}}{E_b^B},$$

where $E_b^B = \sum_{x=15}^{46} P_{y=2008,x,1}^B g_{b,y=2008,x}$

$$E_b^{Scot} = \sum_B E_b^B$$

For later use, the E_b^B is split by sex as follows: sexes in the ratio of 105 males to 100 females, in line with recent experience.

$$E_{b,s=1}^B = \frac{1.05}{2.05} E_b^B$$

and $E_{b,s=2}^B = E_b^B - E_{b,s=1}^B$

($E_{b,s=1}^B$ and $E_{b,s=2}^B$ are used only in the calculation of mortality scaling factors: they are not used in the calculation of fertility scaling factors or births). Numbers of births are calculated using the following formulae:

$$B_y^B = \text{int}\left[0.5 + \sum_{x=15}^{46} \frac{1}{2} \left[P_{y-1,x,1}^{B,controlled} + P_{y,x,1}^{B,controlled} \right] g_{b,y,x} r_b^B \right]$$

$$B_{y,s=1}^B = \text{int}\left[\frac{1.05}{2.05} B_y^B + 0.5 \right]$$

$$B^{B}_{y,s=2} = B^{B}_{y} - B^{B}_{y,s=1}$$

ONS provides Scotland level totals for the number of male and female births for each year of the projections, denoted here by $B^{ONS}_{y,s=1}$ and $B^{ONS}_{y,s=2}$ respectively. Within each cycle the values of the $B^{B}_{y,s=1}$ and $B^{B}_{y,s=2}$ are controlled separately to $B^{ONS}_{y,s=1}$ and $B^{ONS}_{y,s=2}$ as follows:

Step 1

Let $B^{B,controlled}_{y,s} = \text{int}\left[\frac{B^{ONS}_{y,s}}{\sum_{B} B^{B}_{y,s}} B^{B}_{y,s} + 0.5\right]$, for B = 1, 2, …, n_B; 'int' denotes 'the integer part of'

Step 2

Let $m = B^{ONS}_{y,s} - \sum_{B} B^{B,controlled}_{y,s}$, and then distribute this difference between the building bricks by repeating the following procedure m times:

(a) Generate a random number k from a discrete uniform distribution defined on the integer range $\{1,2,...,n_B\}$.

(b) Then alter the number of births in building brick k as follows:

$$B^{B=k,controlled}_{y,s} = B^{B=k,controlled}_{y,s} + \frac{m}{|m|}$$

The GROS (2010c) states that at the start of each cycle, the number of deaths of those aged 1+ years is calculated (whereby the infant mortality is worked out after the numbers of births in the cycle has been finalised). Applying mortality rates by age and sex to the appropriate sub-populations, the expected number of deaths for each year can be calculated. 'Mortality scaling factor' is used to account for local variations, which are observed over a five-year period before the projections. The following notation will be assumed:

$r^{B}_{d,s}$ Mortality scaling factor for building brick B (d stands for 'death levels')

$A^{B}_{d,s}$ Average number of deaths of sex s in building brick B over base year and previous two years.

$A^{Scot}_{d,s} = \sum_{B} A^{B}_{d,s}$ Average number of deaths of sex s in Scotland over base year and previous two years.

$E^{B}_{d,s}$ Expected number of deaths of sex s in building brick B, based on ONS death rates and base year population.

$E^{Scot}_{d,s} = \sum_{B} E^{B}_{d,s}$ Expected number of deaths of sex s in Scotland, based on ONS death rates and base year population.

$g_{d,y,x=-1,s}$ The infant mortality rate for Scotland for individuals of sex s born in the year ending June 30th in calendar year y, provided by ONS (that is around 85% of the full, first year of life infant mortality rate used in national statistics)

$g_{d,y,x,s}$ The projected Scottish mortality rate, provided by ONS, for individuals of sex s, who were aged x years at the end of year y-1, for the year ending June 30th in calendar year y. x = 0, 1, 2, …, 88, 89, 90. $g_{d,y,x,s}$ is in effect the probability that someone of sex s and aged x-1 at the end of year y-1 will die (at the age of x) before the end of year y.

$D^{B}_{y,x,s}$ The number of deaths of sex s in building brick B during the year ending June 30th in calendar year y. x = 0, 1, 2, …, 89, 90.

The formulae to calculate the mortality scaling factors for building brick B are as follows:

$$r^{B}_{d,s} = \frac{A^{B}_{d,s}}{A^{Scot}_{d,s}} \frac{E^{Scot}_{d,s}}{E^{B}_{d,s}},$$

where $E^{B}_{d,s} = E^{B}_{b,s} g_{d,y=2008,x=-1,s} + \sum_{x=0}^{90} P^{B}_{y=2008,x,s} g_{d,y=2008,x,s}$

$$E^{Scot}_{d,s} = \sum_{B} E^{B}_{d,s}$$

Numbers of deaths are calculated using the following formulae:

$$D^{B}_{y,0,s} = \left[B^{B,controlled}_{y,s} + \frac{1}{2} M^{B}_{y,0,s} \right] g_{d,y,x=-1,s} r^{B}_{d,s}$$

$$D^{B}_{y,x,s} = \left[P^{B,controlled}_{y-1,x-1,s} + \frac{1}{2} M^{B}_{y,x,s} \right] g_{d,y,x-1,s} r^{B}_{d,s} \text{, for } x = 1, 2, \ldots, 89$$

$$D^{B}_{y,90,s} = \left[P^{B,controlled}_{y-1,89,s} + \frac{1}{2} M^{B}_{y,90,s} \right] g_{d,y,89,s} r^{B}_{d,s} + \left[P^{B,controlled}_{y-1,90,s} \right] g_{d,y,90,s} r^{B}_{d,s}.$$

(i) Once calculated, the $D^{B}_{y,x,s}$ are rounded to the nearest integer. In addition, the $D^{B}_{y,x,s}$ are then rounded below by zero: this is done in case half the net-migration is negative and greater in absolute terms than the relevant population total. (ii) The $D^{B}_{y,x,s}$ may be altered when the initial projected population totals are adjusted to agree with ONS figures.

3.3 GROS Population Projection Results

The results of this projection process derives the following figures shown in Table 3.3

Table 3.3 Assumption for the 2008-Based Principle and Variant Projections

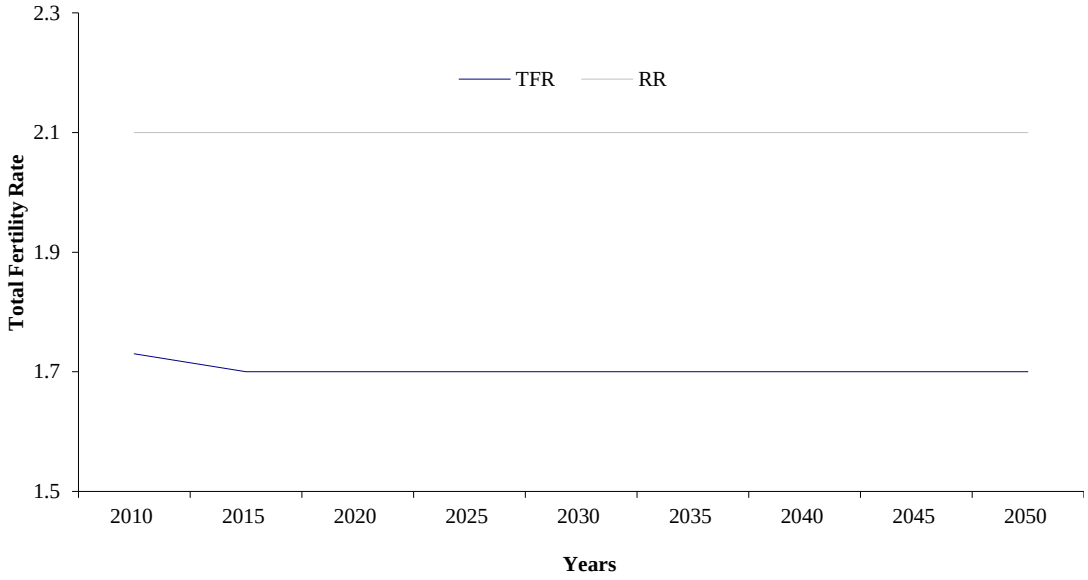
	Assumptions	*Long-term Fertility (TFR)*	*Life Expectancy Male (2033)*	*Life Expectancy Female (2033)*	*Long-term Migration*
Standard Variants	High Variant	1.90	82.8	86.5	+20,500
	Principle	1.70	80.7	85.2	+12,000
	Low Variant	1.50	78.6	83.9	+3,500
Special Case Scenario	Zero Migration	1.70	80.7	85.2	0

Source: GROS (2009a)

3.3.1 GROS Projected Fertility

The TFR is considered reasonably stable, taking into account that it is affected by decisions including when and how many children a woman chooses to have, as it is a period measure. The GROS generally assumes the TFR to be static over a period of 15 years into a projection period and then estimates it to decrease. The TFR is expected to shift from 1.73 in 2010, 1.72 in 2011, 1.71 in 2012, and 1.7 from 2013 onwards to 2050. All years are projected to be under the 2.1 replacement level shown in Figure 3.2. Although, according to Jeannet (2010), this TFR of 1.7 puts Scotland's fertility rate in the "safety zone", which is above 1.5 births per woman. Within this zone, the fertility rate can fall slowly, allowing an opportunity to supplement generation size with migration.

Figure 3.2 Projected Total Fertility Rate (TFR) and Replacement Rate (RR), Scotland, 2010–2050



Source: GROS (2009a)

Table 3.4 shows the estimated and projected number of births per 1,000 Scottish women. The projected period is consistent with the flat TFR above.

Table 3.4 Estimated and Projected Births per 1,000 Women, Scotland, 1950–2000+

Ages	*1950*	*1955*	*1960*	*1965*	*1970*	*1975*	*1980*	*1985*	*1990*	*1995*	*2000 +*
Under 20	234	226	166	138	148	149	149	134	135	123	122
20 – 24	736	575	529	437	371	314	290	311	319	314	315
25 – 29	647	632	594	574	483	428	468	456	451	451	452
30 – 34	338	354	393	416	433	502	516	512	512	512	513
35 – 39	105	134	158	188	251	252	250	250	250	250	250
40 & over	20	27	32	45	49	48	48	48	48	48	48

N.B. Figures to the right of the stepped line are partly or wholly projected

Source: ONS (2009b)

Historically, the family size has been reducing and it is expected to persist in the future. Table 3.5 shows the successive cohorts of women with family size projected to stay at a flat 1.7 from 1995 onwards (the UK is expected to stay flat at 1.84 from 1995 onwards).

Table 3.5 Estimated and Projected Achieved Family Size by Exact Age at Motherhood, Scotland, 1950–2000+

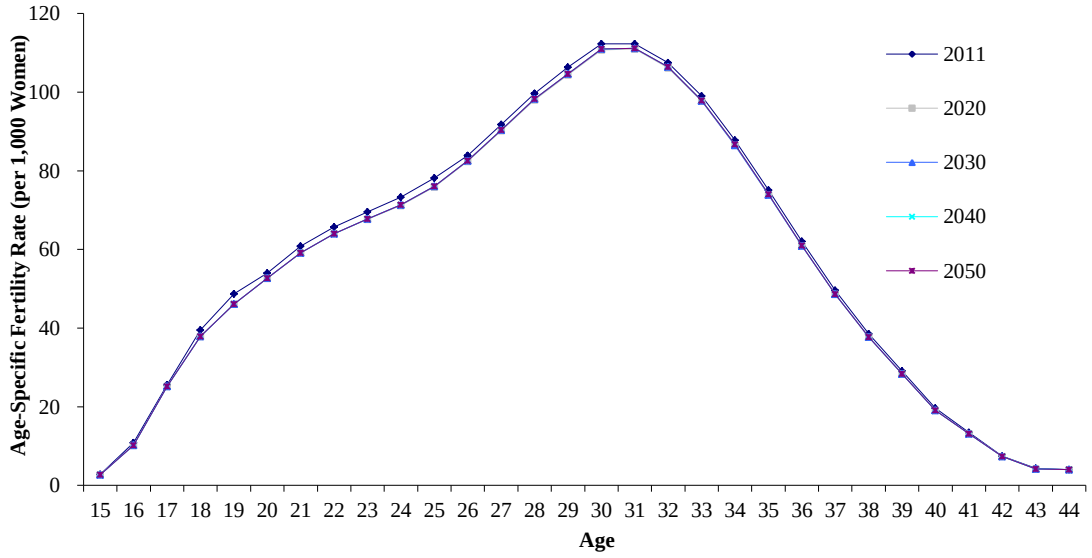
Ages	*Year of Birth of Women*										
	1950	*1955*	*1960*	*1965*	*1970*	*1975*	*1980*	*1985*	*1990*	*1995*	*2000 +*
20	0.23	0.23	0.17	0.14	0.15	0.15	0.15	0.13	0.13	0.12	0.12
25	0.97	0.80	0.69	0.58	0.52	0.46	0.44	0.45	0.45	0.44	0.44
30	1.62	1.43	1.29	1.15	1.00	0.89	0.91	0.90	0.91	0.89	0.89
35	1.95	1.79	1.68	1.57	1.43	1.39	1.42	1.41	1.42	1.40	1.40
40	2.06	1.92	1.84	1.75	1.69	1.65	1.67	1.66	1.67	1.65	1.65
45	2.08	1.95	1.87	1.80	1.73	1.69	1.72	1.71	1.71	1.70	1.70
Completed Family Size	2.08	1.95	1.87	1.80	1.73	1.69	1.72	1.71	1.71	1.70	1.70

N.B. With figures to the right of the stepped line are wholly or partly projected

Source: ONS (2009b)

Figure 3.3 shows the peak age of motherhood is expected to stay constant from 2011 to 2050, at a projected 30 to 31 years of age of motherhood.

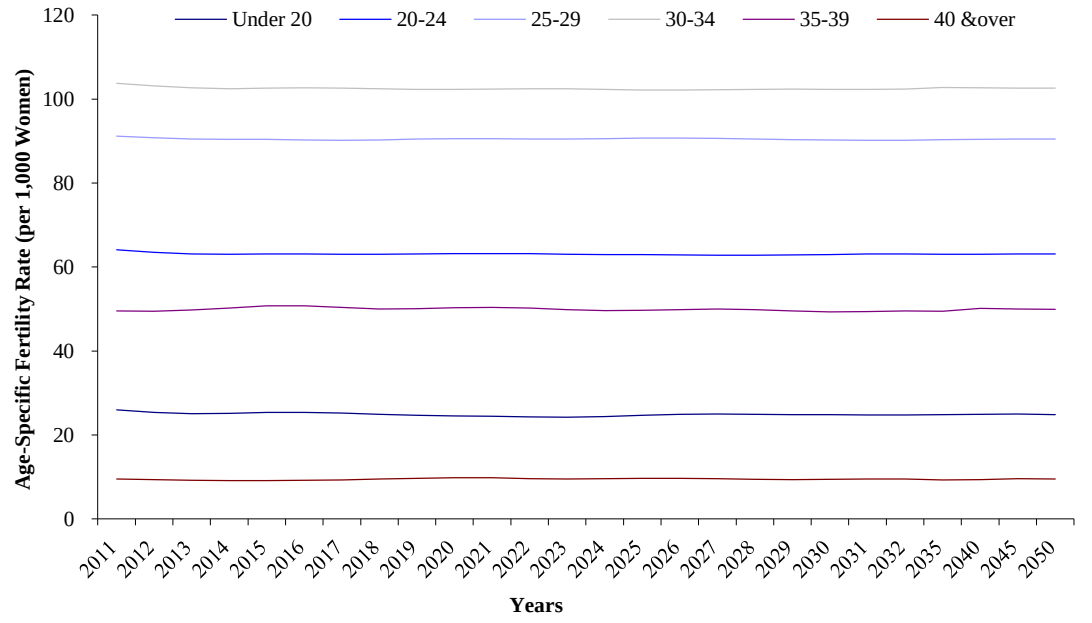
Figure 3.3 Projected Age-Specific Cohort Fertility Rates per 1,000 Women, Scotland, 2011–2050



Source: GROS (2009a)

Of all Scottish females, the ones aged 30–34 are expected to have the highest ASFR. The lowest ASFR is expected to be the 40+ group of Scottish females, as shown in Figure 3.4. All age groups are expected to maintain a stable rate over the period from 2011 to 2050. This follows the projected trend in TFR in Figure 3.2 above.

Figure 3.4 Projected Age-Specific Fertility Rates per 1,000 Women by Age Group, Scotland, 2011–2050

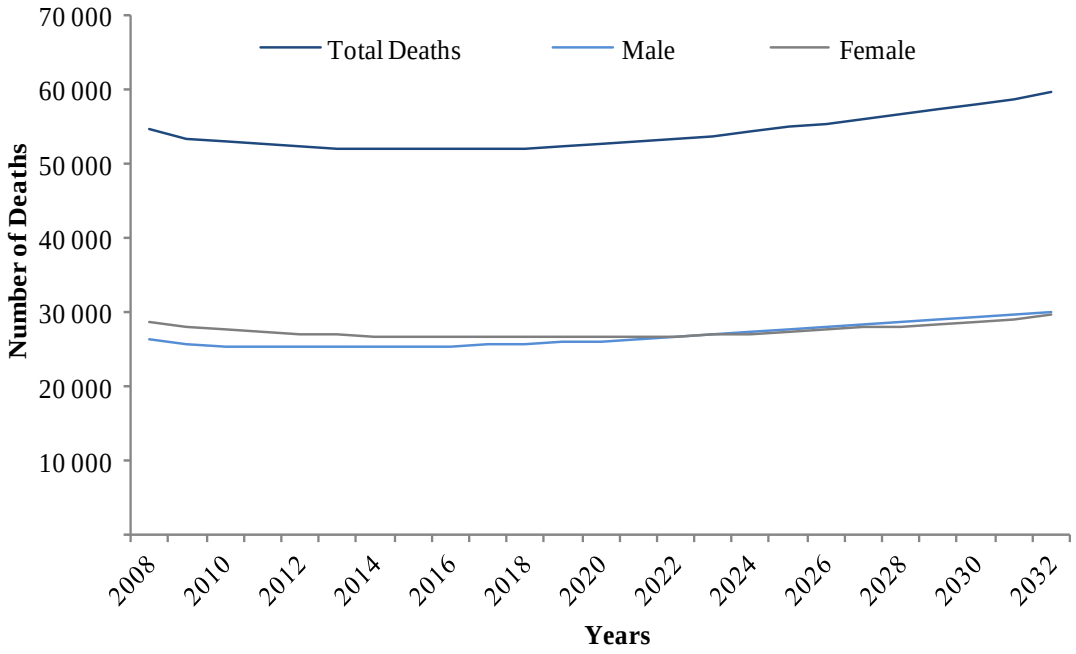


Source: GROS (2009a)

3.3.2 GROS Projected Mortality

Mortality projections are generally assumed more stable than fertility assumptions for all ages up until the very old ages. Scotland's mortality projections in Figure 3.5 show the number of deaths is projected to stay steady at 52,000 from 2011 until 2021–2022. The number of deaths is expected to increase reaching 59,617 in 2033. It also shows the number of female deaths, initially higher than male's, will converge in 2023–2024, from which the trend changes and male deaths are then higher than female's.

Figure 3.5 Projected Number of Deaths, Scotland, 2011–2033



Source: GROS (2009a)

The GROS' future improvements in mortality rates are based on trends observed between 1961 and 2007. There has been a continual reduction in the mortality rates in Scotland, as shown in Table 3.6. The GROS expectation is that yearly mortality rates for most ages will improve and converge to a common rate of 1.0 per cent per year at 2033. For most ages, this is expected to continue at the 1.0 per cent improvement rate thereafter. Examining the overall projected reduction in mortality rates, it is expected to be the greatest reduction in both males and females in their

early twenties. The least reduction in mortality is expected to be found in the early forties for Scottish males and under one year old for Scottish females.

Table 3.6 Assumed Percentage Reduction in Death Rates (m_x) Between Calendar Years, Scotland

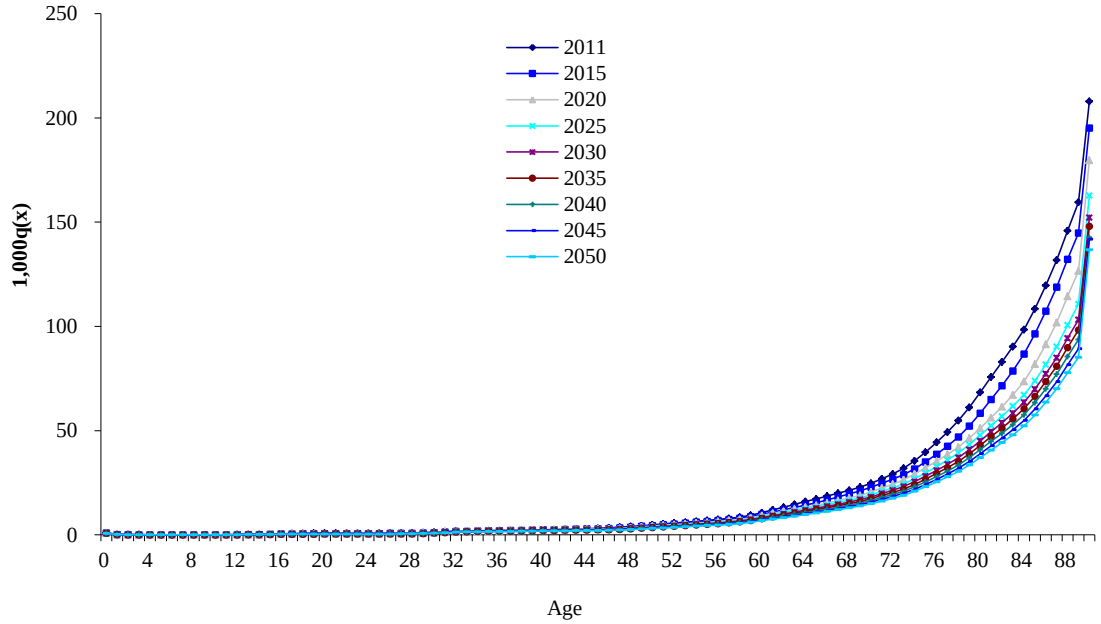
Age last Birthday	2008–2009		2012–2013		2022–2023		2032–2033		Reduction over 25 years	
	M	F	M	F	M	F	M	F	M	F
0	0.42	1.06	0.56	1.05	0.84	1.03	1.00	1.00	17.5	22.9
2	3.14	2.25	2.62	2.10	1.57	1.67	1.00	1.00	37.5	35.3
12	1.71	2.52	1.54	2.34	1.19	1.82	1.00	1.00	27.7	37.9
22	5.89	4.69	4.72	4.25	2.32	3.00	1.00	1.00	53.2	55.2
32	0.44	1.66	0.57	1.58	0.85	1.36	1.00	1.00	17.6	29.4
42	-0.23	1.87	0.06	1.77	0.67	1.47	1.00	1.00	11.8	31.6
52	1.47	1.44	1.69	1.63	1.24	1.39	1.00	1.00	28.7	29.7
62	3.37	2.42	2.58	2.37	1.24	1.39	1.00	1.00	34.1	33.1
72	4.49	3.87	2.33	1.81	1.56	1.84	1.00	1.00	37.5	35.9
82	3.03	2.51	3.82	3.49	1.47	1.50	1.00	1.00	44.2	44.5
92	2.26	1.83	2.56	2.75	2.97	3.11	1.00	1.00	44.0	45.8

N.B. Above the stepped line, projections are made by calendar year. Below the line, projections are made by cohort.

Source: ONS (2009b)

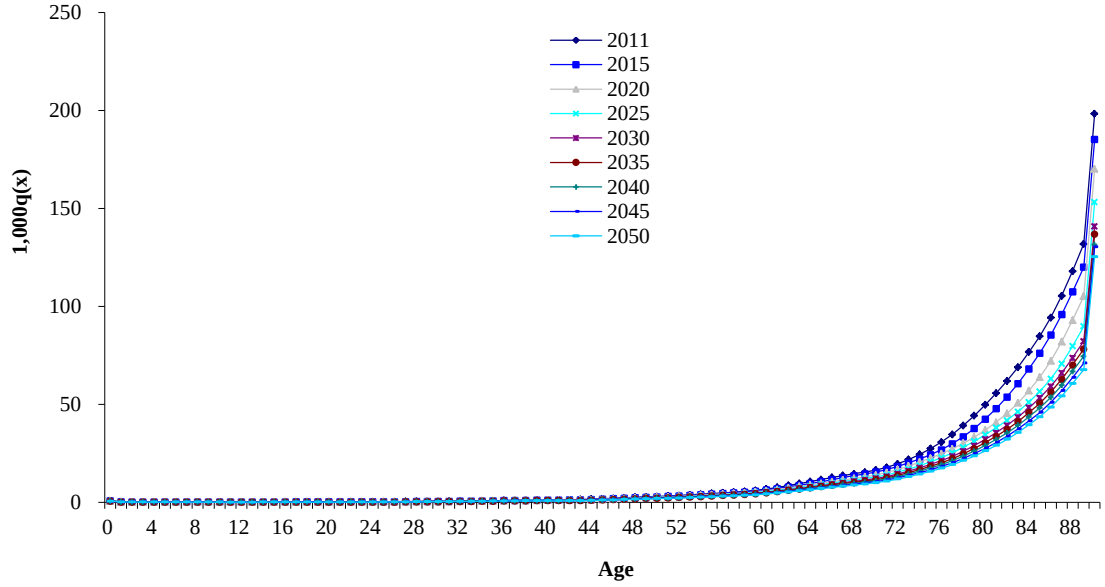
Figures 3.6 and 3.7 show the projected age-specific mortality rates by gender from 2011 to 2050, illustrating that over the period, the age of mortality is increasing for Scottish males and females. The males' projected trend exhibits a relatively low level of mortality at ages until around the early 50's. Then, there is a steady increase up until the early 60's, followed by a steep increase. By the end (late 80's), the trend is at its peak. For females, the trend exhibits a relatively low level of mortality for ages up until the mid 50's, then at the mid 70's mortality is expected to be increasing steeply and again by the end (late 80's) the trend is at its peak.

Figure 3.6 Assumed Mid-Year to Mid-Year Mortality Rates (qx) per 1,000, from Birth or Age Last Birthday, Male, Scotland, 2011–2050



Source: GROS (2009a)

Figure 3.7 Assumed Mid-Year to Mid-Year Mortality Rates (qx) per 1,000, from Birth or Age Last Birthday, Female, Scotland, 2011–2050

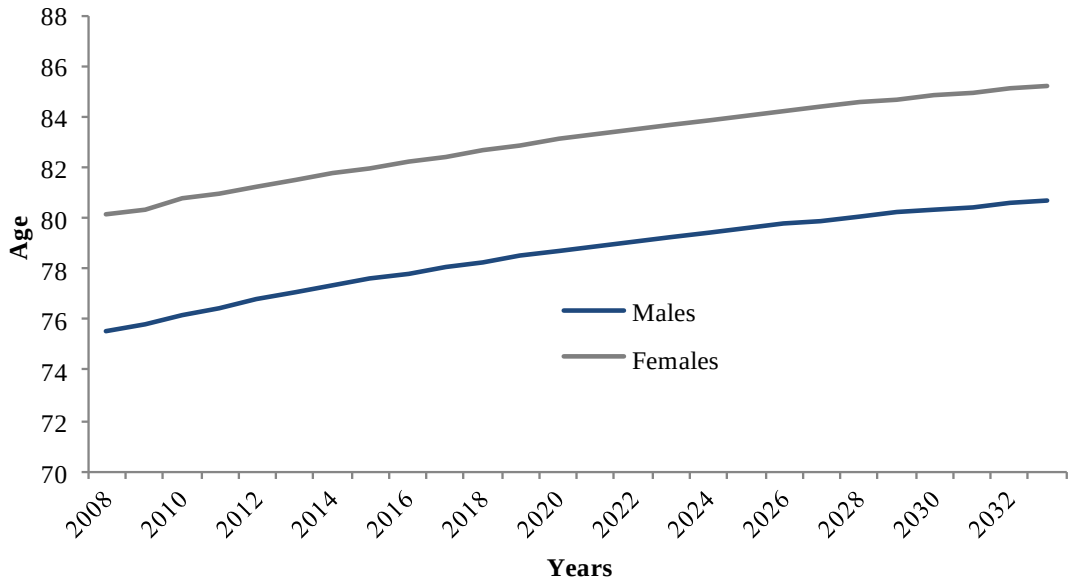


Source: GROS (2009a)

The GROS' projected life expectation is based on historical mortality rates from the years 1981 to 2008 and assumed calendar year mortality rates from the 2008-based principal projections. The projection is that life expectation will increase, as shown

in Figure 3.8, for both males and females. The life expectation at birth for males is expected to increase from 75.5 years in 2008 to 80.7 years in 2033. According to the ONS (2010d), the UK figures are considerably higher than the Scottish figures (77.8 years in 2008 to 83.1 years in 2033). For females, life expectancy was estimated at 80.2 years in 2008 increasing to 85.3 years in 2033. The UK female average life expectancy is higher than Scotland's figures, although, not as wide a gap as for the males (81.9 years in 2008 to 86.9 years in 2033). The gap in life expectancy between male and females in Scotland is projected to remain, although slightly narrowing (4.7 years in 2008 and 4.6 years by 2033).

Figure 3.8 Estimated and Projected Life Expectancy at Birth, Males and Females, Scotland, 2008–2033

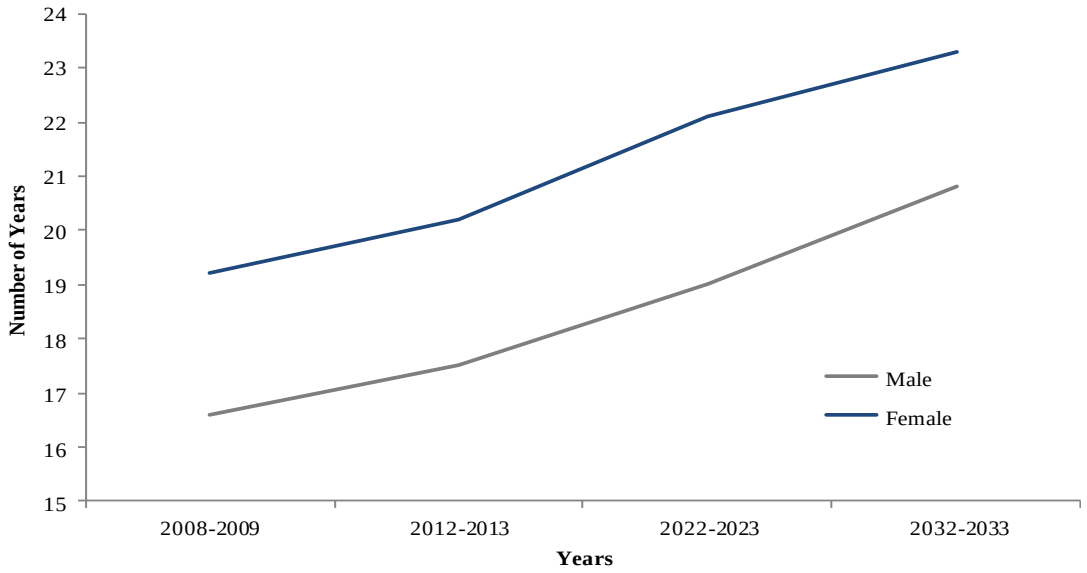


Source: GROS (2009a)

In Figure 3.9, the projected life expectancy at age 65+ for both males and females in Scotland can be seen. The life expectation at age 65+ for males is expected to increase from 16.6 years in 2008 to 20.8 years in 2033. The UK figures from ONS (2010d) are still considerably higher for males, 17.7 in 2008 increasing to 22.1 years in 2033. For Scottish females, life expectancy at age 65+ is averaged at 19.2 years in 2008, increasing to 23.3 years by 2033. The UK female average in 2008 was 20.3 and it is expected to be 24.5 in 2033. The gap between Scottish males' and females' life expectancy at 65+ is once more projected to remain, although slightly narrowing

(2.6 years in 2008 and 2.5 years by 2033). Over a longer period, according to the Department for Work and Pension (2010), one in four babies born today will live to be one hundred years old.

Figure 3.9 Estimated and Projected Life Expectancy at 65 Years Old, Males and Females, Scotland, 2008–2033



Source: GROS (2009a)

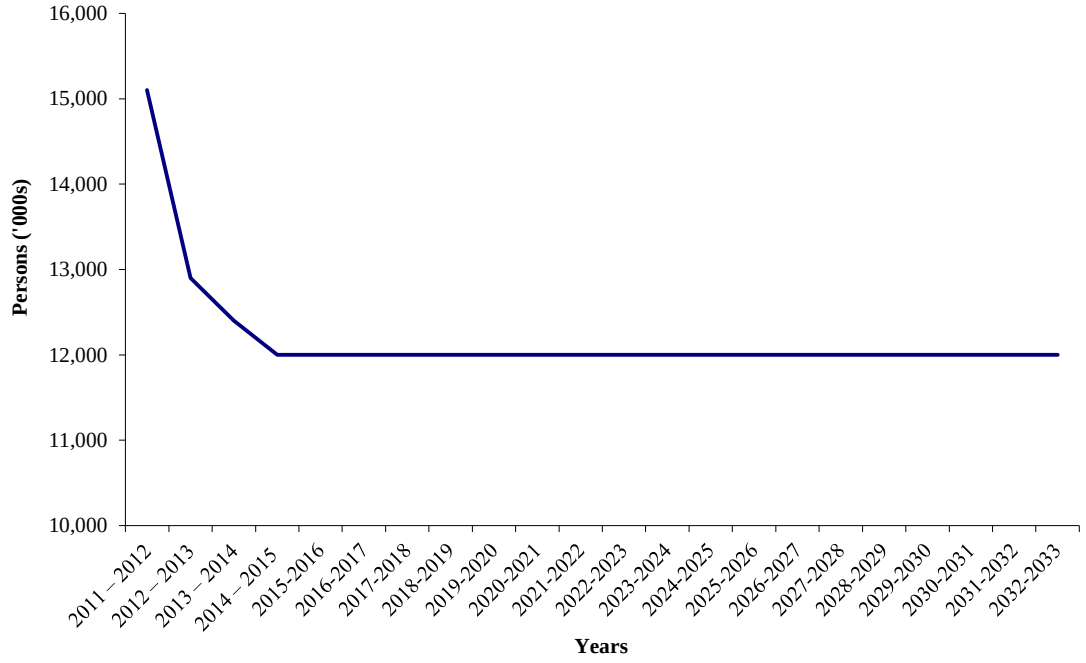
3.3.3 GROS Migration Projections

Migration projections are one of the hardest assumptions to make. A number of factors can affect positive net-migration. These factors include migrants coming for economic reasons (e.g., work), educational reasons, to join family, negative environmental reasons (e.g., natural disasters), political unrest in their home country, or sometimes overpopulation in developing countries. There are also a number of factors that can cause negative net-migration, e.g., improved economic outlooks in other countries (causing less people to leave their own countries for Scotland), people leaving Scotland for economic reasons, educational reasons, or to join family (especially when they have retired); moreover, a tight immigration policy can adversely affect migration to Scotland.

The GROS 2008-based migration projections are based on several observed trends, including current trends in EU migration as a whole, recent EU enlargement (with

consequential trends from that), past international migration trends and past cross-border migration between the countries of the UK. The GROS have assumed a long-term positive net-migration level of 12,000 persons per year until 2050, as shown in Figure 3.10. This is expected to be made up from 5,500 international net-migrants and 6,500 UK cross-border net-migrants.

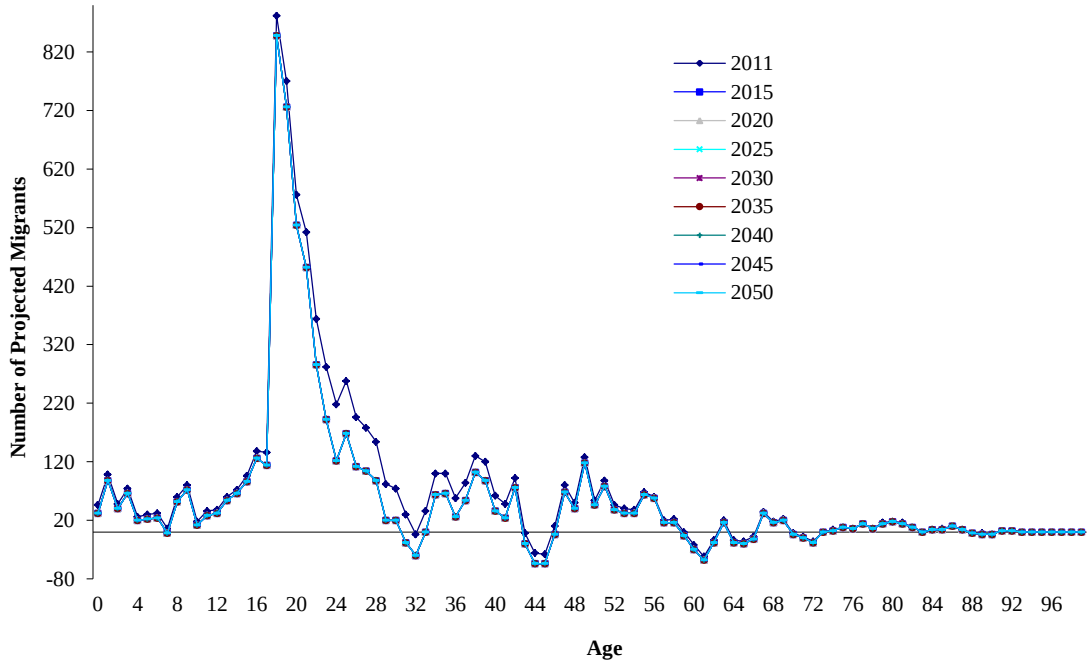
Figure 3.10 Migration Projections, Scotland, 2011–2033



Source: GROS (2009a)

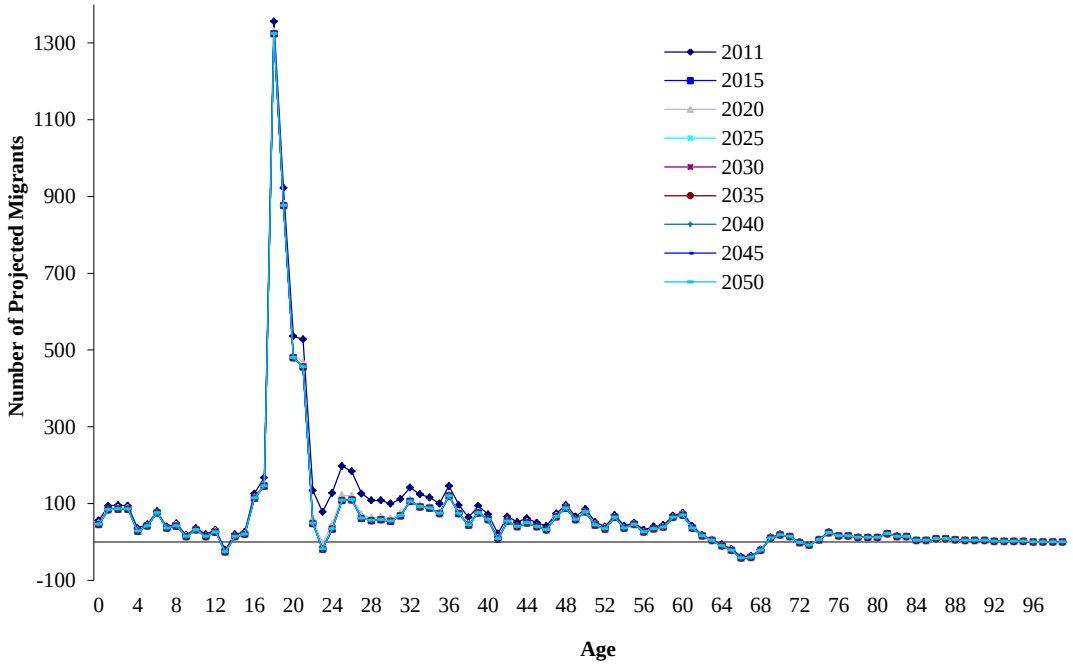
The age of the projected net-migrants by sex and age can be seen in Figures 3.11 and 3.12. Both figures show that, over the projected period, the peak age for the Scottish positive net-migration is estimated to be 18 years old, with significantly high numbers in the 19 to 21 year group for both male and female. The expectation is that females will be greater in number than males.

Figure 3.11 Annual Projected Number of Male Net-Migrants by Single Year of Age, Scotland, 2011–2050



Source: GROS (2009a)

Figure 3.12 Annual Projected Number of Female Net-Migrants by Single Year of Age, Scotland, 2011–2050



Source: GROS (2009a)

The underlying reasons for the migration assumptions are important and need to be considered because migration is an unstable demographic component. The assumptions have to take into consideration the fact that 'labour market gates' have opened up in Europe. This may cause a greater reduction in the number of immigrants coming to work or even staying in Scotland from countries of the A8 (the bulk of the net-migration since 2004) as well as or others; therefore, Scotland cannot depend on an endless supply of A8 countries immigrants or even on the scale seen since 2004. The A8 countries have experienced greater economic growth since joining the EU, as Wright (2008, pp.25–37) states,

> Although there is a large gap in the standard of living between the A8 countries and the EU-15, if the difference in economic growth persists, then this standard of living gap will rapidly close. If migration decisions are determined largely by economic "push" and "pull" factors, then this higher level of economic growth in A8 countries should reduce the economic incentives associated with immigration...It is unlikely that A8 countries will be able to supply an unlimited and indefinite supply of English-speaking high-skill workers willing to work in low-skill, low-pay jobs in the wealthier EU member-states…immigration from the A8 countries is slowing down, immigration from Bulgaria and Romania is trivial, and it appears the EU is not going to be enlarged soon (especially with respect to Turkey), it seems unlikely that Scotland can rely on large immigration flows in the future.

The GROS (2009a, p.13) also recognises that, "…migration from Eastern European is unlikely to continue to be so strongly positive". Social-economical factors and the demographic profile of the migrants' home countries need to be considered, as this will affect future flows. The difference in GDP growth rate between countries can make them more or less attractive than the home country. Table 3.7 shows the real GDP growth rate for selected countries and years highlighting varying degrees of change from 2010.

Table 3.7 Real GDP Growth Rate, Growth Rate of GDP Volume, Percentage Change on Previous Year, A8 countries and UK, 2008–2012

Country	***2008***	***2009***	***2010***	***2011***	***2012***
Czech Republic	1.4	-4.7	2.1	2.0	2.9
Estonia	-3.6	-14.2	2.3	4.7	3.9
Hungary	1.0	-6.5	1.4	2.9	2.9
Latvia	-2.8	-17.3	0.4	4	4.7
Lithuania	3.5	-14.3	2.9	6.2	5.5
Poland	3.1	1.5	3.7	3.9	3.7
Slovakia	5.6	-5	3.8	3.4	4.3
Slovenia	3.4	-8.9	1.0	1.7	2.2
UK	-0.7	-5.5	1.0	1.0	1.4
EU-27 Average	***0.0***	***-46***	***1.6***	***1.6***	***1.7***

N.B. 2011 and 2012 are forecasted

Source: Eurostat (2011b)

The two other countries that joined the EU in 2007, Bulgaria and Romania, enlarged the EU population by around 29 million (INED, 2009). For Bulgaria and Romania nationals, work restrictions regarding employment were originally put in place until 2011, this has now been extended until the end of 2013. According to Emigrate (2009), a cap of just under 25,000 migrants from these two countries were allowed to take low-skilled jobs in agriculture or food processing, while highly skilled people could apply for work permits to perform the skilled jobs. The self-employed were allowed to work in the UK freely and students on a part-time basis.

The demographic profiles of the migrants' home countries show Scotland is not the only ageing country where the population is declining in the longer term. The A8 countries themselves are going to age and decline. Table 3.8 shows that A8 countries are all expected to experience population decline by 2050. This decline is expected to go from its current level of 72,693,000 people to 63,778,000, a drop of 12.26 per cent of the total A8 population. The greatest decline is expected to be in Lithuania with a decrease of 20.7 per cent in its population by 2050. This could result in greater demand for younger workers to stay or return by offering higher financial rewards.

Table 3.8 Projected Population of A8 Countries (Thousands), 2010–2050

Country	*2010*	*2050*	*% Change*
Czech Republic	10,411	10,294	-1.12
Estonia	1,339	1,233	-7.91
Hungary	9,973	8,934	-10.41
Latvia	2,240	1,854	-17.23
Lithuania	3,255	2,579	-20.7
Poland	38,038	32,013	-15.83
Slovakia	5,412	4,917	-9.14
Slovenia	2,025	1,954	-3.5
A8 Total	***72,693***	***63,778***	***-12.26***

Source: UN (2009)

At the same time, the age of the A8 population is expected to rise, as shown in Table 3.9. The 65+ population will rise from its current level of 10,513,910 to 18,069,995 by 2050. The most significant being Poland, with an increase of 4,436,757 people aged 65+.

Table 3.9 Percentage of the Population of A8 Countries Aged 65+, 2010–2050

Country	*2010*		*2050*		*Change in 65+ Population*	*% Point Change*
Czech Republic	1,592,883	15.3%	2,748,498	26.7%	+1,155,615	11.4%
Estonia	228,969	17.1%	298,386	24.2%	+69,417	7.1%
Hungary	1,635,572	16.4%	2,331,774	26.1%	+696,202	9.7%
Latvia	389,760	17.4%	480,186	25.9%	+90,426	8.5%
Lithuania	533,820	16.4%	657,645	25.5%	+123,825	9.1%
Poland	5,135,130	13.5%	9,571,887	29.9%	+4,436,757	16.4%
Slovakia	665,676	12.3%	1,391,511	28.3%	+725,835	16%
Slovenia	332,100	16.4%	590,108	30.2%	+258,008	13.8%
A8 Total	***10,513,910***	***15.6%***	***18,069,995***	***27.1%***	***+7,556,085***	***11.5%***

Source: UN (2009a)

Table 3.10 shows the projected median age of the A8 countries from current times of 39.5 years to 47.4 in 2050. This results in an overall percentage increase of 20 per cent for the A8 countries over forty years. Poland has the greatest expected rise in the median age of the population (33.5%) followed closely by Slovakia (33%).

Table 3.10 A8 Median Age of the Population, 2010–2050

Countries	***Median Age 2010***	***Median Age 2050***	***% Change in Median Age***
Czech Republic	39.6	47.1	+18.9%
Estonia	39.6	43	+8.6%
Hungary	39.8	46.6	+17.8%
Latvia	40	46.1	+15.2%
Lithuania	39.8	47.5	+19.3%
Poland	38.2	51	+33.5%
Slovakia	37.2	49.5	+33.1%
Slovenia	41.7	48.7	+16.7%
A8 Average	***39.5***	***47.4***	***+20%***

Source: UN (2009b)

There will be greater competition in Europe, increases in economic growth and standards of living in the A8 countries and the A8 countries themselves will age and decline; therefore, it would be reasonable to assume the migrants' home countries will retain and repatriate a larger proportion of their population. Assuming further, this will reduce the flow of migrants to Scotland from the A8 countries in the future, while Scotland will continue to attract migrants from other parts of the world, "Scotland has attracted migrants from many parts of the world in the past, notably from Pakistan, India, Italy, Poland, and China. It also has one of the largest populations of asylum seekers under the dispersal programme operated by the National Asylum Support Service" Scottish Government (2009a, p.1).

With the UK restrictions on non-EU countries through the points based system, this can potentially harm the flow of migrants to Scotland, as the UK's interest will be served first. As mentioned in Chapter 2, Scotland has no specific measures in place to allow adjustments to the flow of immigration to the country. This has caused some to question the appropriateness of implementing a system to allow Scotland to fluctuate the minimum points required in each tier, in order to suit Scottish economic needs rather than the UK as a whole. Scotland has different social-economic needs from the rest of the UK and the Scottish Government (2009a, p.5) states that Scotland is in a more appropriate position to plan for its own needs. "Unless flexibility enables Scotland to source low skilled migrants from outside the EU, these

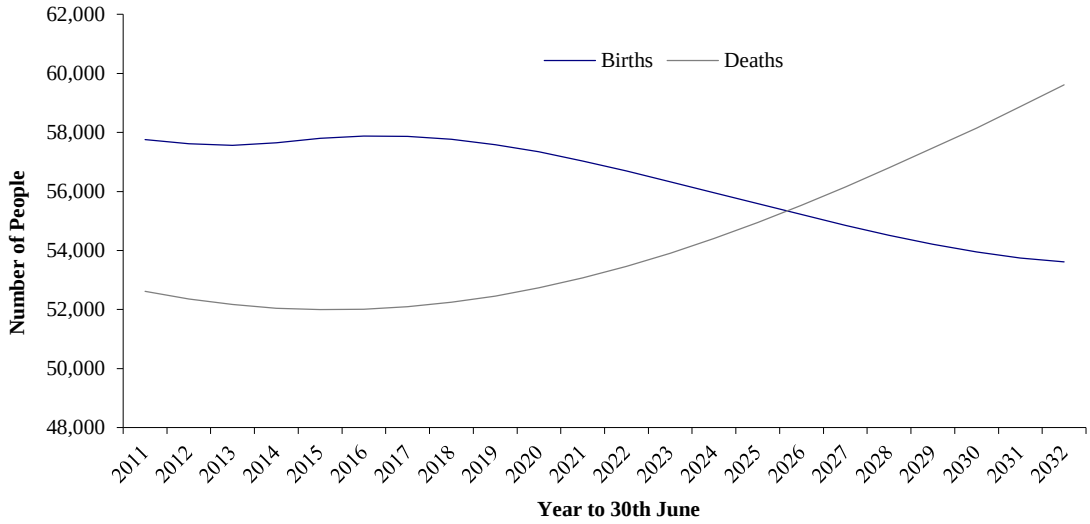
needs will have to be met through migration within the EU, including UK workers. This may result in problems for some sectors, particularly if current migrants succeed in gaining work that matches their skills and qualifications"

A separate migration policy for Scotland has the potential to affect the country positively in terms of reducing the impact of the ageing and declining population and the skill gaps. It has been suggested by many that an answer to these problems is to have immigration on a large scale. Others found immigration is probably not going to be the answer in solving these problems (Migration Watch UK, 2004; The House of Lords Select Committee on Economic Affairs, 2008). Migration Watch (2009, p.1) stated, "There is no significant economic case for large scale immigration to Scotland. A separate immigration system that such a policy would require would be unenforceable, ineffective and undesirable".

3.3.4 Overview of GROS Population Projections

In Figure 3.13, the projected natural change in the Scottish population is shown. The number of deaths is expected to decrease initially until 2015, then increase sharply reaching an estimated 59,610 deaths by 2033. The numbers of births are expected to stay steady until 2021 then decrease, reaching a low of 53,611 births in 2033. The figures show the number of births is projected to exceed the number of deaths until 2027.

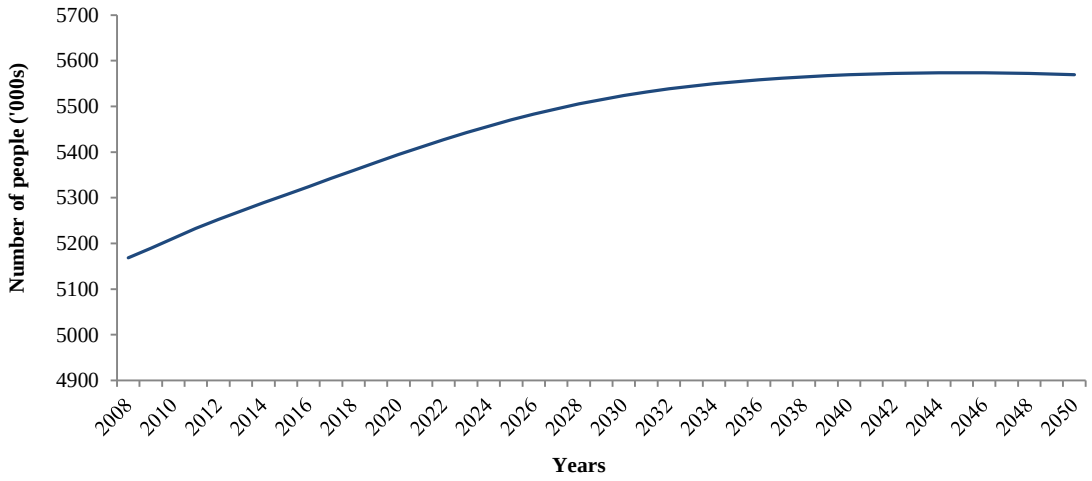
Figure 3.13 Projected Births and Deaths, Scotland, 2011–2033



Source: GROS (2009a)

Bringing the principle projections on fertility, mortality, and net-migration together, the GROS estimates the Scottish population will increase from 5,232,000 in 2008 to 5,569,000 in 2050, as shown in Figure 3.14. This is an increase of 7 per cent.

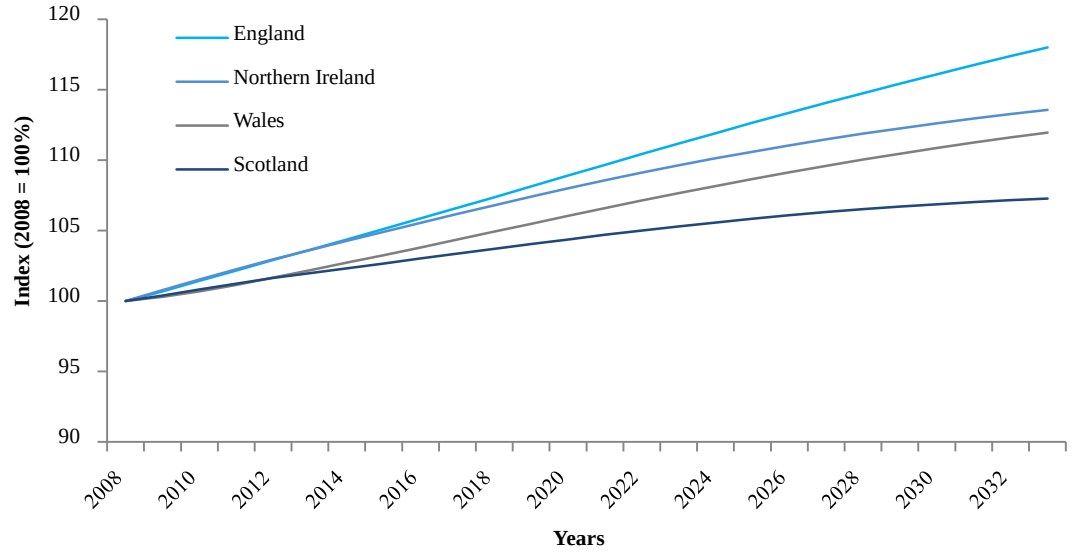
Figure 3.14 Population Estimate and Projection, Scotland, 2011–2050



Source: GROS (2009a)

In comparison to the rest of the UK countries, this shows that Scotland, with its expected population growth rate of 7 per cent, has the lowest expected population change of all the countries. In comparison, England has an expected growth of 18 per cent, Northern Ireland 14 per cent and Wales 12 per cent, as shown in Figure 3.15 with the base year being 2008.

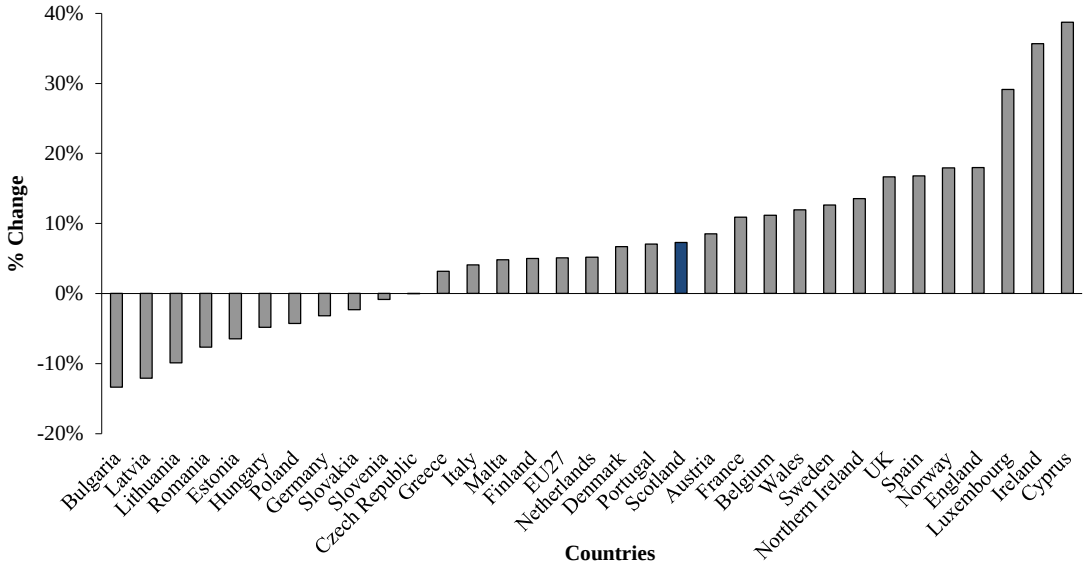
Figure 3.15 Comparison of Population Change for UK Countries, 2008–2033



Source: GROS (2009a)

When examining Scotland's projected population percentage growth compared to the EU-27, it is found that Scotland's 7 per cent growth rate by 2033 is expected to be above the EU-27 average growth rate of 5.5 per cent. The lowest percentage growth is expected to be found in Bulgaria (-13%) and the highest is expected to be found in Cyprus (39%), as Figure 3.16 shows.

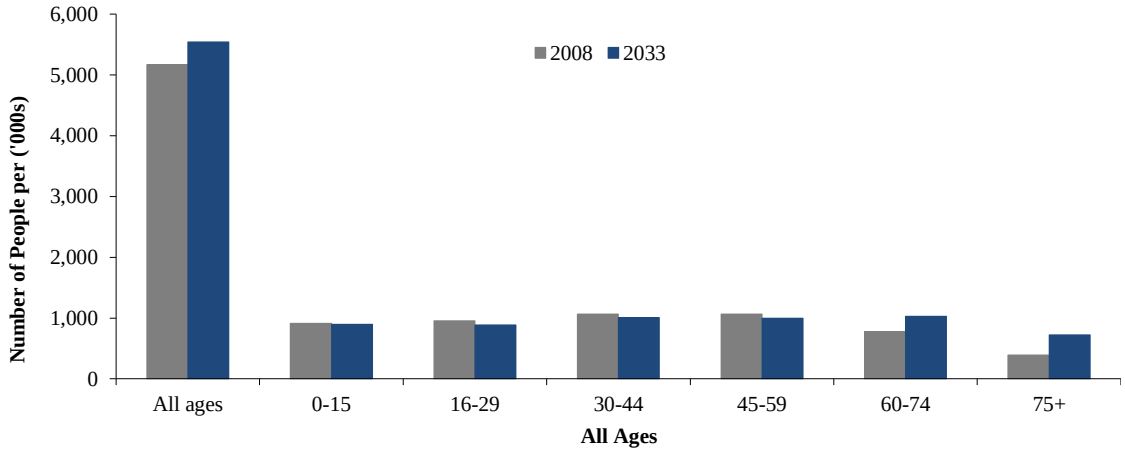
Figure 3.16 Percentage Projected Population Change, Scotland and EU-27, 2008–2033



Source: GROS (2009a)

Figure 3.17 shows how the structure of the Scottish population is expected to change with an overall decrease in the age group of 16 to 59 and an increase in the age group 60+.

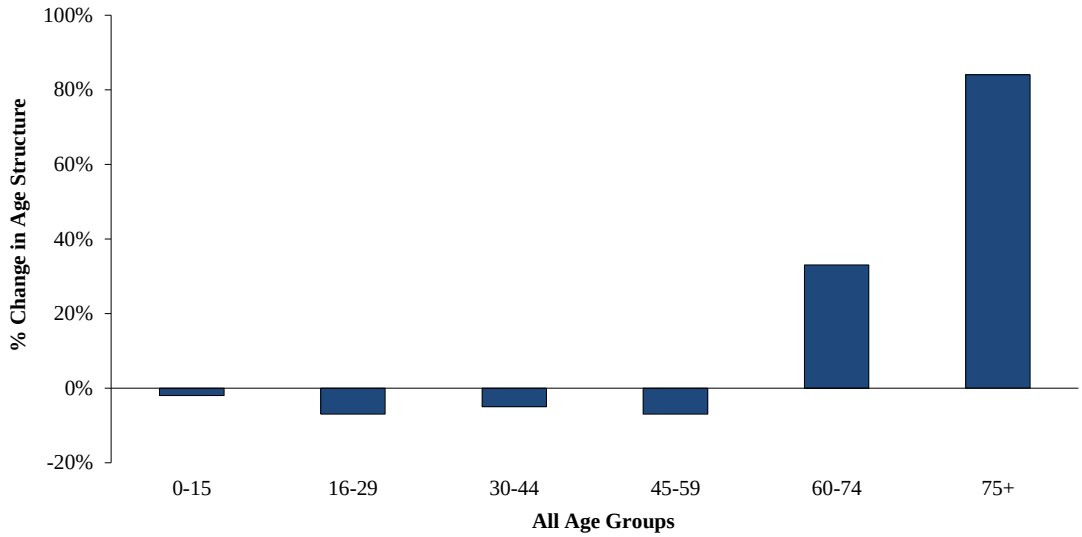
Figure 3.17 Estimated and Projected Change in Age Structure, Scotland, 2008–2033



Source: GROS (2009a)

In Chapter 2, the most significant current change in the age structure was found in the pensionable age group and more specifically the very old age group. Examining the GROS projections, the 60+ age group again increases the greatest, with concentration in the 75+ age group, as Figure 3.18 shows more clearly.

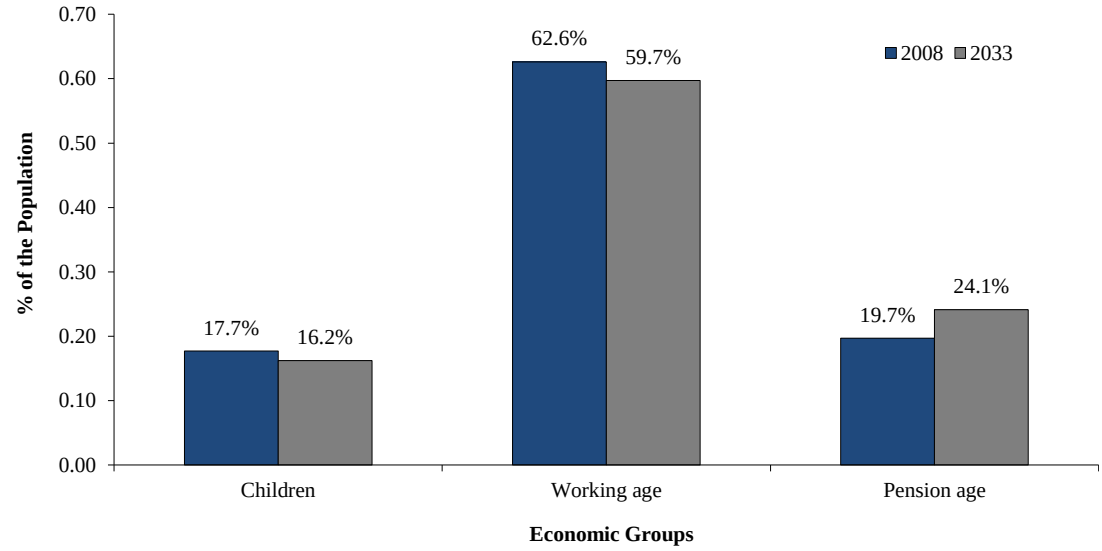
Figure 3.18 Projected Percentage Change in the Population by Selected Age Groups, Scotland, 2008–2033



Source: GROS (2009a)

The GROS projections account of the future changes in pensionable age. This affects both the population of working age and the pensionable age groups. The state pensionable age for males and females in Scotland (and the whole of the UK) will increase between 2010 and 2020 to 65 years of age for both sexes. This means that, before 2010, females between the ages of 60–64 were considered pensionable age and from 2020, they fall under the working-age category. The state pension age will increase from 65 years to 68 years for both males and females over a twenty-two year period starting on the 6th April 2024 until 2046 (Crown Office (2007)); moreover, depending on when the person's birthday falls, they will shift from the working age to the pensionable age group. By breaking down the population by economic groups, it is found that this is projected to show a reduction in the children and working-age groups and a rise in the population of pensionable age, as shown in Figure 3.19.

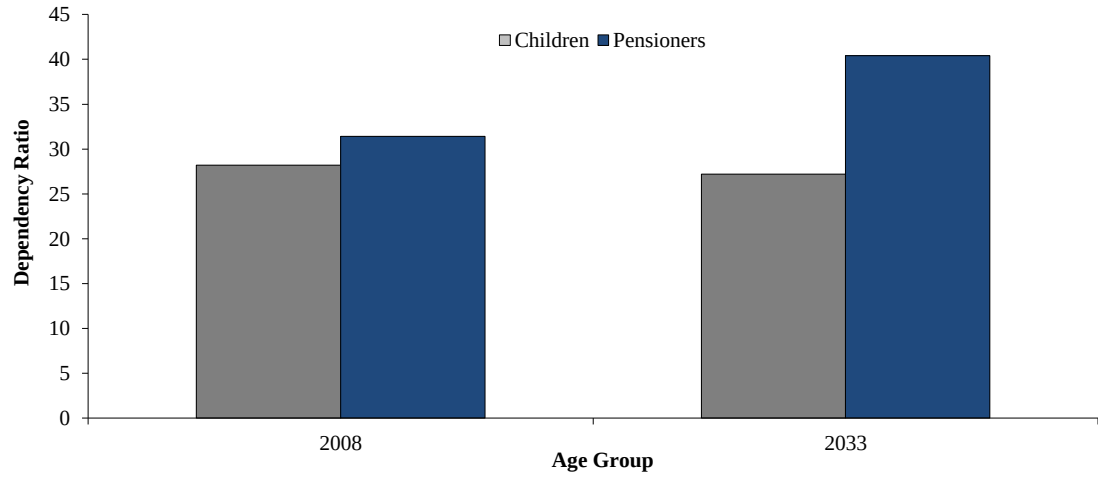
Figure 3.19 Estimated and Projected Economic Groups by Percentage of Total Population, 2008-based, 2008–2033, Scotland



Source: GROS (2009a)

This projected change in the economic groups affects the dependency ratio in Scotland. A significant increase in the dependency of the pensioners and a slight increase in the dependency of children are expected, as shown in Figure 3.20.

Figure 3.20 Estimated and Projected Dependency Ratio (Dependants per 100 Working Population), Scotland, 2008–2033



Source: GROS (2009a)

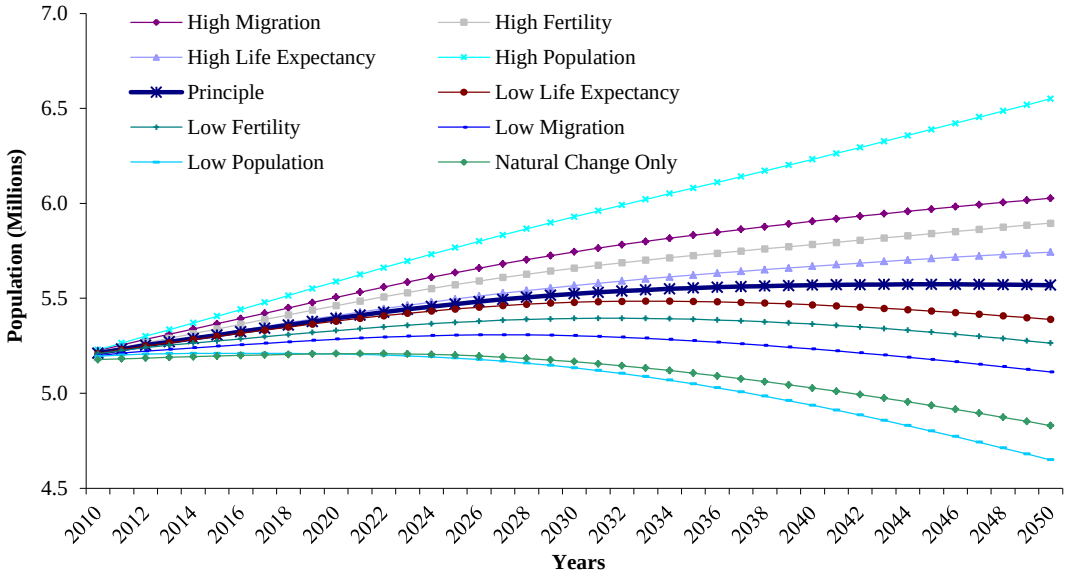
3.3.5 The GROS Results Using Selected Variant Projections

The GROS produces projections for selected variants in addition to the principle projections (as mentions previously), because of the possible inaccuracies of the

principle projections. The ONS continues to measure the accuracy of previous principle projections with actual events that take place. It has been found in Scotland and the UK as a whole that fertility has been over-projected and life expectancy as well as net inward migration has been under-projected in recent years. This shows the importance of examining other variants, which can be seen in Figure 3.21. Unfortunately, the cohort component method does not allow any probability or confidence intervals to be attached to the principle or any of the variant projections. This makes the uncertainty for the three components (fertility, mortality, and migration) assumptions not directly comparable; therefore, the ONS is in the process of developing a stochastic forecasting model for the UK.

General patterns between the principle and other variants can be examined. Using these different variants, it is found there are many different possibilities that could affect the size of the projected population. The worst case would be the population would contract the most, under the low population variant (low fertility, low life expectation and low migration), which would bring about a projected population size of 4.5 million. The best outcome possible, where the population would grow the most, is the high population variant (high fertility, high life expectation and high migration), which would bring about a population size of 6.6 million. Figure 3.21 shows the population projections using selected variants.

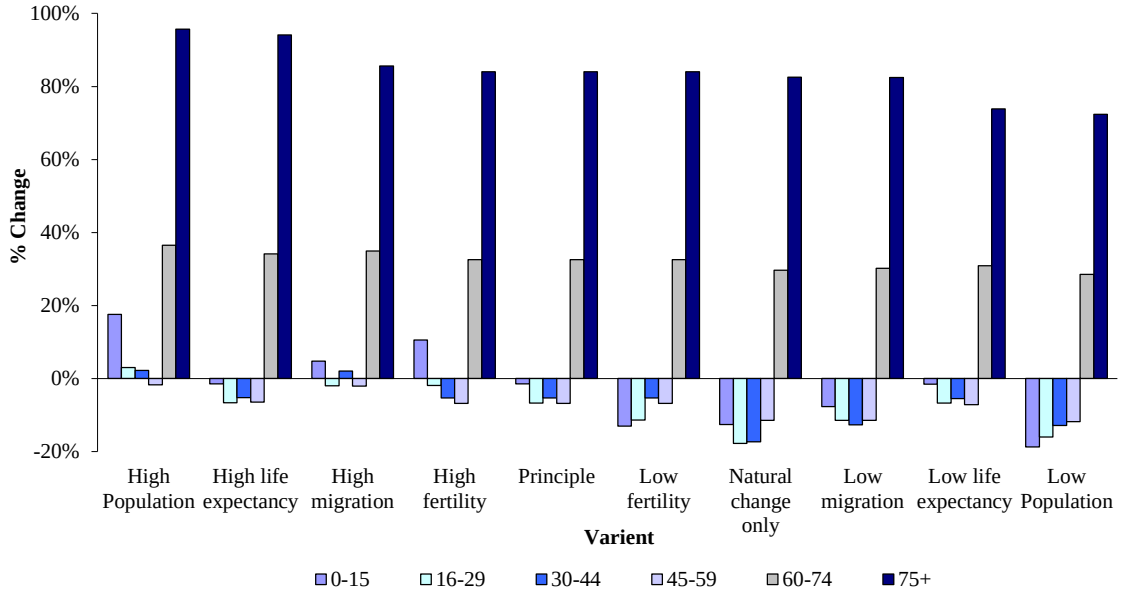
Figure 3.21 Population Projections Using Selected Variants, Scotland, 2010–2050



Source: GROS (2009a)

Taking the projected variants above, the population structure broken down by selected age groups can be seen in Figure 3.22.

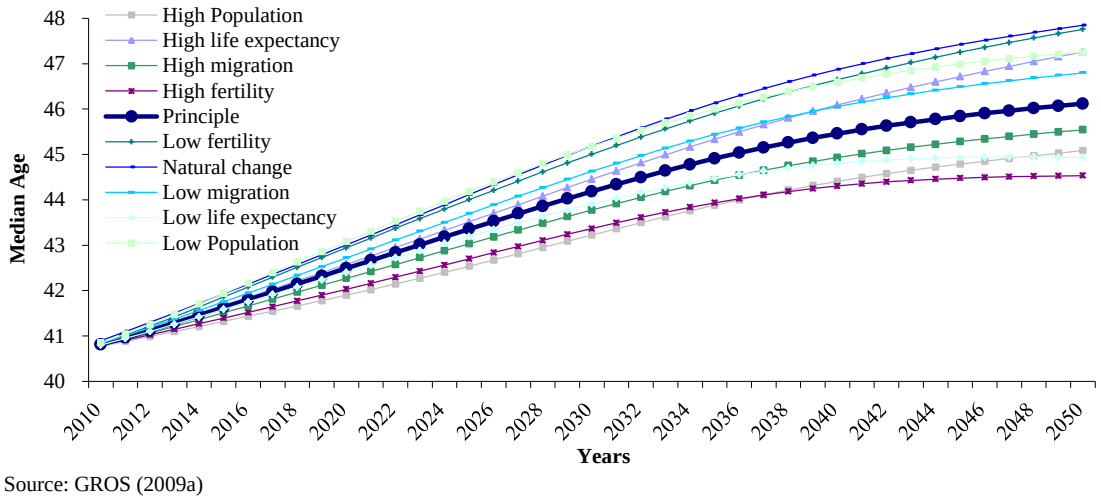
Figure 3.22 Percentage Change in Age Structure under the 2008-Based Principle and Selected Variants Projections, Scotland, 2008–2033



Source: GROS (2009a)

These projected variants provide an array of what could be the median age of Scotland shown in Figure 3.23. All variants project Scotland will age over the period, with high fertility bringing about the lowest median age (45 years old). Natural change is expected to bring about the highest median age (48 years old) by the end of the period.

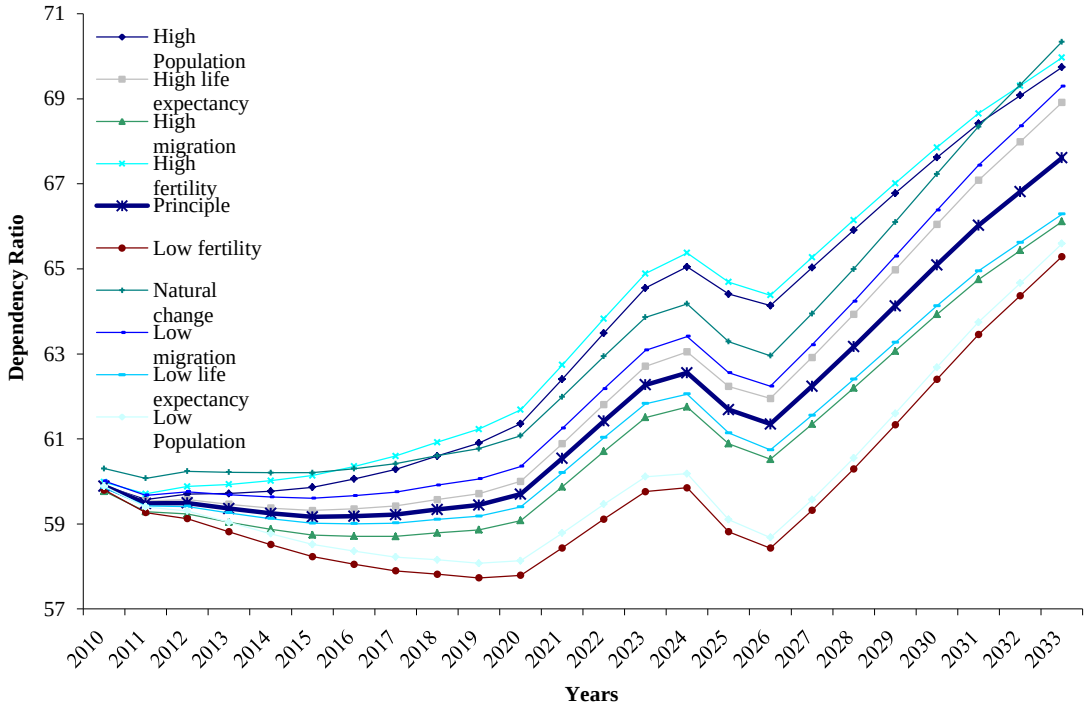
Figure 3.23 Projected median age by Selected Variants, Scotland, 2010–2050



Source: GROS (2009a)

The variant projections will have a variety of effects on the dependency ratio, as shown in Figure 3.24. The lowest dependency ratio, at the end of the period 2033, is estimated to be under the low fertility (65 per 100 working-age population) and the highest is found under the natural change variant (70 per 100 working-age population).

Figure 3.24 Dependency Ratio (Dependants per 100 Working-Age Population) under 2008-Based Principle and Selected Variant projections, 2010–2033



Source: GROS (2009a)

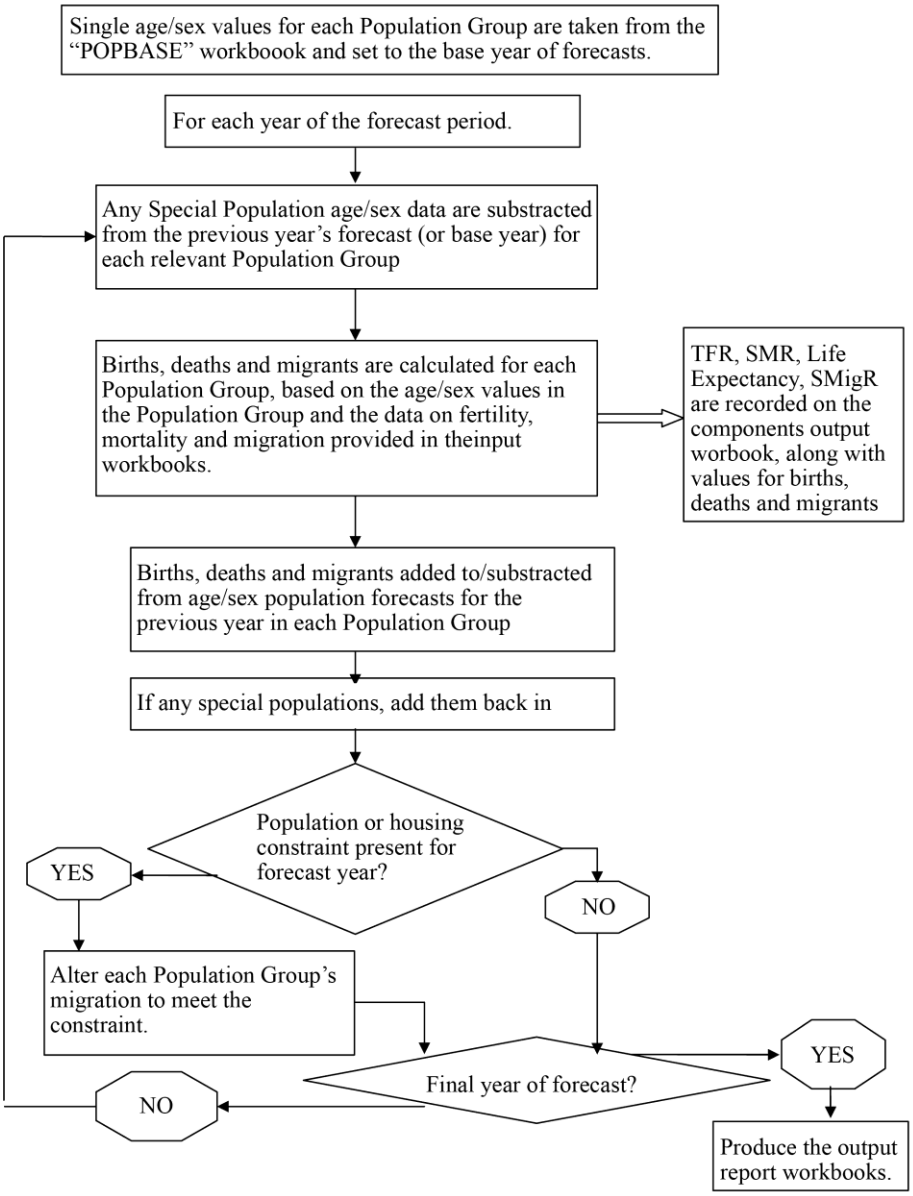
3.4 Replication of the GROS Projections Using Popgroup

The GROS figures show that Scotland is expected to age and its population to decline over the next few decades. In order to examine the possible future population of Scotland objectively, projections made by the GROS need to be replicated and then allowed to adjust. These adjustments will be the different potential scenarios of the three components of population change. In order to do this, a software called Popgroup is used. This software has been selected because it uses the cohort component model, which means it is compatible with the GROS dataset. Popgroup has been in use for over 10 years and is the standard model used for sub-national demographic forecasting by the Local Authorities in Scotland.

Popgroup allows us to produce forecasts of the current and future population at a UK, Scottish, and Local Authority level (by total population or by chosen groups). The Popgroup software model uses past and future assumptions regarding mortality, fertility and migration (past trends are not very useful when working out migration assumptions). These forecasts are only as accurate as the underlying data that is entered, which is why the GROS population estimated figures are used. The standard schedules (reference population) for each component are initially entered. Adjustments to these schedules can then be carried out using the totals, count and differential options within each file, where the data can be entered by age and sex, single year or grouped, and the figures can be explicitly entered or the Popgroup software can linearly interpolate between the figures given.

To use Popgroup software, several detailed demographic data are required: the population projection by single year of age / sex for the base year (2008) for ages 0 to 90+; sex ratio at birth (the number of male births per 1,000 female births); the age-specific fertility rates (ASFR) for women of childbearing age for the base year and the number of years to be projected; the total number of births for base year and the number of years to be projected (this depends on the expected ASFR for women); the age-specific mortality rates; the probability of dying by single year of age / sex from birth to 90+ for the base year and the number of years to be projected; the number of deaths by age / sex and single year from birth to 90+ for the base year and the number of years to be projected (this depends on the expected ASMR rates); and finally, the number of net-migrants by age / sex and single year from birth to 90+ for the base year and the number of years to be projected. Diagrammatically, the process for the calculations is shown in Figure 3.25.

Figure 3.25 Popgroup Population Projection Process



Source: Andelin and Simpson (2007)

All of this demographic data was provided by the GROS using the 2008-based projections and entered into the Popgroup software, which creates an input folder where will be placed the input files (population base, fertility, mortality and in- and out- migration). First, the population by sex and single year of age (0 to 90+) for the base year data is entered as shown in Figure 3.26 (although only part of the female population is shown because of space constraints in the figure display, all the data was entered for females also).

Figure 3.26 Example of Popgroup Population Base, The Population Estimates for the Base Year

Population Estimates and Forecasts

Population Base for year: **2008**

Check sums of all persons entered

Validate

5,168,500

Sex	Age	Population Group *Scotland*
male	0	30320
male	1	29509
male	2	28586
male	3	28582
male	4	28155
male	5	27104
male	6	26538
male	7	26987
male	8	27957
male	9	29105
male	10	29462
male	11	30605
male	12	30178
male	13	30672
male	14	31483
male	15	32329
male	16	33650
male	17	34113
male	18	33481
male	19	34266
male	20	36150
male	21	35947
male	22	36568
male	23	36736
male	24	34488
male	25	33991
male	26	33927
male	27	35130
male	28	34452
male	29	32447
male	30	29280
male	31	28418
male	32	29701
male	33	29593
male	34	30219
male	35	31985
male	36	33677
male	37	35887
male	38	35639
male	39	37121
male	40	37632
male	41	38942
male	42	38109
male	43	39422
male	44	39156
male	45	38759
male	46	38882
male	47	37958
male	48	37199
male	49	36636
male	50	35755
male	51	35009
male	52	34315
male	53	33076
male	54	32736
male	55	32121
male	56	30980
male	57	31487
male	58	31885
male	59	32869
male	60	33773
male	61	36483
male	62	28132
male	63	26549
male	64	27057
male	65	25805
male	66	23694
male	67	21947
male	68	22583
male	69	22098
male	70	21475
male	71	20277
male	72	19622
male	73	18599
male	74	17269
male	75	16273
male	76	15801
male	77	14737
male	78	13408
male	79	12363
male	80	10836
male	81	9955
male	82	9240
male	83	7997
male	84	7154
male	85	5736
male	86	5205
male	87	4649
male	88	4193
male	89	2376
male	90+	7553
all males		2,500,205
Sex	**Age**	
female	0	**29,211**
female	1	**27,986**
female	2	**27,265**

In the fertility file, ASFR are entered for females aged 15 to 49 (up to 46 for the Scottish file) and the sex ratio is also entered, as shown in Figure 3.27 (boys / 1000, girl ratio = 1050/1000). The birth count and birth differentials are also entered in the fertility file, as shown in Figures 3.28 and 3.29. When the count is entered into the birth file, the ASFR schedule is then only used to divide the count into single years of age. When the differentials are entered, they are then used to multiply the ASFR schedule for single-year rates (depending on these differentials being more or less than 1, this will increase or lower the age schedule of the ASFR). The differentials can be entered as total and by age sex groups of 15–19, 20–24, …, 45–49. If both counts and differentials are entered, the software will make the count the priority data in all files (births, mortality, and migration). The count will always override differentials, which are only used to approximate age and sex distribution within a count. In Figure 3.27, with the example of a birth count, the data is entered as a total or divided by boy and girl.

Figure 3.27 Example of Popgroup Fertility Data Input for the Base Year, ASFR

Population Estimates and Forecasts **Scotland**

Fertility *Age schedule of fertility rates, boys per thousand girls, and mixed parentage table*

Options VALIDATE **Population Group**

	Scotland
ASFR	✔
Boys/1000 girls	✔
Mixed parentage births	

Double click any population group/rate for which you will insert below values different from the standard

Data **Age specific fertility rates (per 1,000 women)**

		Population Group
	Age	***Standard***
TFR		*1.78*
female	15	**2.9**
female	16	**11.4**
female	17	**26.0**
female	18	**40.9**
female	19	**51.0**
female	20	**55.5**
female	21	**61.3**
female	22	**65.9**
female	23	**70.0**
female	24	**75.7**
female	25	**82.7**
female	26	**88.3**
female	27	**95.0**
female	28	**103.3**
female	29	**109.4**
female	30	**112.4**
female	31	**114.1**
female	32	**108.1**
female	33	**100.2**
female	34	**92.0**
female	35	**77.5**
female	36	**65.1**
female	37	**52.6**
female	38	**39.3**
female	39	**30.0**
female	40	**20.5**
female	41	**14.0**
female	42	**7.6**
female	43	**4.6**
female	44	**1.9**
female	45	**1.1**
female	46	**1.1**
female	47	**0.0**
female	48	**0.0**
female	49	**0.0**

Boys/1000 girls	1,050

Figure 3.28 Example of Popgroup Birth Counts, Number of Births

Population Estimates and Forecasts *Scotland*

Annual Assumptions Go to Births | Go to Differentials | Go to TFRs

Fertility Options wizard

~~~~~~~~~~~~~~~~~~~~shortcuts~~~~~~~~~~~~~~~~~~~~

VALIDATE ***Total, all groups*** **Scotland**

BIRTHS *Year beginning July 1*

Options	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Provide total births														
Trend total births														
Provide births by sex	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Double click any option you wish to select (or de-select) for a year and then fill in the relevant data below

Data															
	Total														
	Males	30,388	29,866	29,692	29,584	29,513	29,486	29,527	29,603	29,644	29,640	29,591	29,497	29,370	29,214
	Females	28,940	28,444	28,278	28,176	28,107	28,081	28,121	28,194	28,232	28,229	28,181	28,092	27,971	27,822

Figure 3.29 Example of Popgroup Fertility Differentials, 2008-based

FERTILITY DIFFERENTIALS (by which to multiply the single age schedule)

Year beginning July 1

Options	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Provide total														
Trend total														
Provide age values	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Trend age values														

Double click any option you wish to select (or de-select) for a year and then fill in the relevant data below

Data	***Total***														
	Age														
female	15-19	1.00	1.00	0.99	0.97	0.95	0.94	0.94	0.95	0.95	0.94	0.93	0.92	0.92	0.91
female	20-24	1.00	1.00	0.99	0.98	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
female	25-29	1.00	0.97	0.96	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.95	0.95	0.95
female	30-34	1.00	0.99	0.99	0.99	0.98	0.98	0.97	0.98	0.98	0.98	0.97	0.97	0.97	0.97
female	35-39	1.00	0.97	0.96	0.96	0.95	0.96	0.97	0.98	0.98	0.97	0.97	0.97	0.97	0.97
female	40-44	1.00	0.97	0.96	0.95	0.93	0.92	0.91	0.91	0.92	0.93	0.94	0.96	0.98	0.98
female	45-49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

The next step is to enter the ASMR in the mortality input file, as shown in Figure 3.30; again, when the count is entered into the mortality file, the ASMR are then only used to divide the count into single years of age. Differentials are used in order to multiply the ASMR (depending on these differentials being more or less than 1, this will increase or lower the age schedule of the ASMR). Figure 3.31 shows the death count entered as groups of 0, 1–4, 5–9, 10–14, …, 80–84, 85+. Figure 3.32 shows the mortality differentials entered in groups of newborn/0, 1–4, 5–9, …, 80–84, 85+.
~~~~~~~~~~~~~~~~~~~~

Figure 3.30 Example of Popgroup Mortality Rates, Age-Specific Mortality Rate

Population Estimates and Forecasts **Scotland**

Mortality *Age-sex schedule of mortality rates, per thousand population*

VALIDATE

Options

Population Group

Scotland

ASMR ✔

Double click the cell under any population group for which you will insert below values different from the standard

Data

Age specific mortality rates (per 1,000 population)

Population Group

Sex	Age	*Scotland*
male	Newborn	**4.5**
male	0	**1.0**
male	1	**0.3**
male	2	**0.2**
male	3	**0.2**
male	4	**0.1**
male	5	**0.1**
male	6	**0.1**
male	7	**0.1**
male	8	**0.1**
male	9	**0.1**
male	10	**0.1**
male	11	**0.1**
male	12	**0.2**
male	13	**0.2**
male	14	**0.3**
male	15	**0.4**
male	16	**0.5**
male	17	**0.7**
male	18	**0.8**
male	19	**0.9**
male	20	**1.0**
male	21	**1.0**
male	22	**1.0**
male	23	**1.1**
male	24	**1.1**
male	25	**1.1**
male	26	**1.1**
male	27	**1.1**
male	28	**1.1**
male	29	**1.3**
male	30	**1.4**
male	31	**1.6**
male	32	**1.7**
male	33	**1.8**
male	34	**1.8**
male	35	**2.0**
male	36	**2.0**
male	37	**2.1**
male	38	**2.1**
male	39	**2.3**
male	40	**2.4**
male	41	**2.6**
male	42	**2.8**
male	43	**3.0**

Figure 3.31 Example of Popgroup Death Counts, Number of Deaths

Population Estimates and Forecasts **Scotland**

Annual Assumptions

Go to Deaths | Go to Differentials | Go to SMRs

Mortality Options wizard ~~~~~~~~~~~~~~~~shortcuts~~~~~~~~~~~~~~~~

VALIDATE ***Total, all groups*** **Scotland**

DEATHS *Year beginning July 1*

Options	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Provide total deaths														
Trend total deaths														
Provide age-sex dths	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Double click any option you wish to select (or de-select) for a year and then fill in the relevant data below

Data

	Total	54,734	53,401	52,972	52,617	52,358	52,170	52,043	52,004	52,013	52,096	52,244	52,460	52,733	53,073
Sex	**Age**														
male	0	30	29	28	28	27	27	27	27	27	26	26	26	26	25
male	1-4	23	23	22	21	21	21	19	19	19	18	17	17	17	17
male	5-9	15	15	15	15	15	15	15	14	15	14	13	12	12	12
male	10-14	26	26	26	26	24	23	22	23	23	23	24	24	24	23
male	15-19	114	107	103	96	91	87	84	80	76	73	69	68	66	65
male	20-24	184	174	164	155	147	139	132	125	118	112	106	102	97	93
male	25-29	189	180	177	170	167	163	159	151	147	142	136	132	128	123
male	30-34	246	245	251	259	269	278	281	284	285	289	292	295	292	288
male	35-39	368	351	343	332	323	319	324	336	347	361	374	378	385	388
male	40-44	539	524	513	506	491	475	454	437	419	401	390	394	403	414
male	45-49	757	740	735	723	709	692	674	650	635	607	581	552	526	497
male	50-54	1032	1019	1025	1027	1027	1025	1020	1014	998	982	961	936	906	884
male	55-59	1390	1317	1289	1279	1286	1289	1296	1304	1309	1314	1314	1313	1307	1291
male	60-64	2223	2182	2177	2149	1995	1906	1847	1815	1808	1820	1829	1843	1859	1870
male	65-69	2530	2476	2455	2483	2609	2652	2661	2675	2658	2492	2400	2343	2314	2314
male	70-74	3253	3127	3047	2949	2897	2878	2880	2874	2924	3095	3169	3207	3248	3258
male	75-79	4124	3947	3858	3769	3682	3648	3619	3577	3507	3482	3486	3517	3534	3617
male	80-84	4121	4024	4007	3989	4000	3991	3958	3947	3932	3918	3949	3980	3990	3955
male	85+	4856	4924	5066	5226	5370	5513	5686	5872	6069	6275	6465	6665	6888	7137
	All Males	26,020	25,430	25,301	25,202	25,150	25,141	25,158	25,224	25,316	25,444	25,601	25,804	26,022	26,271
Sex	**Age**														
female	0	24	23	22	22	21	21	21	21	20	20	20	20	19	19
female	1-4	19	19	19	19	19	19	18	17	17	17	17	17	17	16
female	5-9	12	12	12	12	12	12	12	13	12	12	12	12	11	11
female	10-14	16	14	14	14	13	12	11	11	11	11	11	11	11	11
female	15-19	47	45	42	39	37	35	33	30	30	28	26	24	24	24
female	20-24	54	50	50	47	46	43	40	40	36	35	33	30	30	29
female	25-29	70	70	68	67	67	65	65	63	61	59	58	56	55	53
female	30-34	101	98	98	97	101	102	102	101	102	102	102	101	98	97
female	35-39	191	180	172	162	154	148	146	147	149	152	154	156	157	159
female	40-44	305	291	282	272	261	249	235	222	208	195	187	181	182	183
female	45-49	495	488	486	480	474	462	449	431	420	403	384	363	345	325
female	50-54	666	663	671	676	680	682	683	683	677	669	655	637	617	601
female	55-59	934	896	880	878	885	895	905	915	923	929	933	934	936	929
female	60-64	1483	1472	1481	1482	1385	1329	1292	1274	1270	1283	1296	1313	1330	1344
female	65-69	1894	1857	1838	1847	1935	1962	1977	1992	1992	1870	1803	1761	1741	1740
female	70-74	2644	2533	2459	2378	2331	2314	2302	2283	2298	2412	2454	2481	2511	2530
female	75-79	4018	3825	3690	3563	3436	3354	3284	3215	3128	3080	3072	3068	3051	3079
female	80-84	5038	4878	4818	4728	4681	4617	4504	4399	4301	4201	4150	4106	4056	3980
female	85+	10460	10323	10338	10403	10444	10484	10584	10701	10822	10956	11060	11171	11310	11465
	All females	28,471	27,737	27,440	27,186	26,982	26,805	26,663	26,558	26,477	26,434	26,427	26,442	26,501	26,595

Figure 3.32 Example of Popgroup Mortality Differentials

MORTALITY DIFFERENTIALS **(by which to multiply the single year age-sex schedule)**

Year beginning July 1

Options	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Provide Total													
Trend Total													
Provide Age-sex	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Trend Age-sex													

Double click any option you wish to select (or de-select) for a year and then fill in the relevant data below

Data	***Total***												
Sex	***Age***												
male	Newborn/ 0	**1.00**	**0.98**	**0.98**	**0.97**	**0.97**	**0.96**	**0.96**	**0.95**	**0.94**	**0.94**	**0.93**	**0.92**	**0.91**
male	1-4	**1.00**	**0.96**	**0.93**	**0.90**	**0.88**	**0.86**	**0.84**	**0.82**	**0.80**	**0.79**	**0.77**	**0.76**	**0.74**
male	5-9	**1.00**	**0.96**	**0.94**	**0.92**	**0.90**	**0.88**	**0.87**	**0.85**	**0.84**	**0.82**	**0.81**	**0.80**	**0.78**
male	10-14	**1.00**	**0.97**	**0.96**	**0.95**	**0.94**	**0.93**	**0.92**	**0.91**	**0.90**	**0.89**	**0.88**	**0.87**	**0.86**
male	15-19	**1.00**	**0.95**	**0.91**	**0.88**	**0.85**	**0.82**	**0.80**	**0.78**	**0.75**	**0.74**	**0.72**	**0.71**	**0.69**
male	20-24	**1.00**	**0.93**	**0.88**	**0.83**	**0.79**	**0.76**	**0.72**	**0.70**	**0.67**	**0.65**	**0.62**	**0.61**	**0.59**
male	25-29	**1.00**	**0.94**	**0.89**	**0.85**	**0.82**	**0.79**	**0.76**	**0.73**	**0.71**	**0.69**	**0.67**	**0.65**	**0.63**
male	30-34	**1.00**	**0.98**	**0.98**	**0.97**	**0.97**	**0.97**	**0.97**	**0.96**	**0.95**	**0.95**	**0.94**	**0.94**	**0.94**
male	35-39	**1.00**	**1.00**	**1.01**	**1.01**	**1.02**	**1.03**	**1.03**	**1.04**	**1.04**	**1.04**	**1.04**	**1.04**	**1.04**
male	40-44	**1.00**	**0.98**	**0.98**	**0.98**	**0.98**	**0.97**	**0.97**	**0.97**	**0.96**	**0.96**	**0.95**	**0.95**	**0.94**
male	45-49	**1.00**	**0.97**	**0.95**	**0.93**	**0.92**	**0.90**	**0.89**	**0.88**	**0.86**	**0.85**	**0.84**	**0.83**	**0.82**
male	50-54	**1.00**	**0.97**	**0.95**	**0.94**	**0.92**	**0.91**	**0.89**	**0.88**	**0.87**	**0.85**	**0.84**	**0.83**	**0.82**
male	55-59	**1.00**	**0.96**	**0.94**	**0.92**	**0.91**	**0.89**	**0.88**	**0.87**	**0.86**	**0.84**	**0.83**	**0.82**	**0.81**
male	60-64	**1.00**	**0.95**	**0.92**	**0.90**	**0.87**	**0.85**	**0.83**	**0.81**	**0.80**	**0.79**	**0.78**	**0.77**	**0.76**
male	65-69	**1.00**	**0.96**	**0.94**	**0.92**	**0.90**	**0.88**	**0.85**	**0.83**	**0.81**	**0.79**	**0.78**	**0.77**	**0.75**
male	70-74	**1.00**	**0.94**	**0.91**	**0.88**	**0.85**	**0.83**	**0.82**	**0.80**	**0.79**	**0.77**	**0.76**	**0.74**	**0.73**
male	75-79	**1.00**	**0.94**	**0.90**	**0.86**	**0.83**	**0.80**	**0.77**	**0.75**	**0.73**	**0.71**	**0.70**	**0.69**	**0.68**
male	80-84	**1.00**	**0.96**	**0.93**	**0.90**	**0.86**	**0.83**	**0.80**	**0.78**	**0.75**	**0.72**	**0.70**	**0.68**	**0.67**
male	85+	**1.00**	**0.96**	**0.93**	**0.91**	**0.89**	**0.87**	**0.85**	**0.83**	**0.81**	**0.79**	**0.77**	**0.75**	**0.74**
Sex	**Age**													
female	Newborn/ 0	**1.00**	**0.97**	**0.96**	**0.95**	**0.94**	**0.92**	**0.91**	**0.90**	**0.89**	**0.88**	**0.87**	**0.86**	**0.84**
female	1-4	**1.00**	**0.97**	**0.95**	**0.93**	**0.91**	**0.90**	**0.88**	**0.87**	**0.85**	**0.84**	**0.82**	**0.81**	**0.80**
female	5-9	**1.00**	**0.98**	**0.97**	**0.96**	**0.95**	**0.94**	**0.94**	**0.93**	**0.92**	**0.91**	**0.90**	**0.89**	**0.89**
female	10-14	**1.00**	**0.96**	**0.93**	**0.90**	**0.87**	**0.85**	**0.82**	**0.80**	**0.78**	**0.76**	**0.74**	**0.73**	**0.71**
female	15-19	**1.00**	**0.94**	**0.90**	**0.86**	**0.82**	**0.79**	**0.75**	**0.72**	**0.70**	**0.67**	**0.65**	**0.62**	**0.60**
female	20-24	**1.00**	**0.94**	**0.90**	**0.86**	**0.83**	**0.79**	**0.76**	**0.73**	**0.70**	**0.68**	**0.65**	**0.63**	**0.61**
female	25-29	**1.00**	**0.96**	**0.93**	**0.91**	**0.89**	**0.86**	**0.84**	**0.82**	**0.80**	**0.78**	**0.77**	**0.75**	**0.74**
female	30-34	**1.00**	**0.97**	**0.96**	**0.94**	**0.93**	**0.92**	**0.91**	**0.89**	**0.88**	**0.87**	**0.86**	**0.85**	**0.84**
female	35-39	**1.00**	**0.98**	**0.97**	**0.96**	**0.96**	**0.95**	**0.94**	**0.94**	**0.93**	**0.92**	**0.91**	**0.91**	**0.90**
female	40-44	**1.00**	**0.97**	**0.95**	**0.93**	**0.91**	**0.90**	**0.88**	**0.87**	**0.85**	**0.84**	**0.82**	**0.81**	**0.80**
female	45-49	**1.00**	**0.97**	**0.95**	**0.93**	**0.91**	**0.90**	**0.88**	**0.86**	**0.85**	**0.83**	**0.82**	**0.81**	**0.79**
female	50-54	**1.00**	**0.97**	**0.96**	**0.94**	**0.93**	**0.91**	**0.90**	**0.88**	**0.87**	**0.86**	**0.84**	**0.83**	**0.82**
female	55-59	**1.00**	**0.96**	**0.95**	**0.93**	**0.92**	**0.90**	**0.89**	**0.88**	**0.86**	**0.85**	**0.84**	**0.83**	**0.81**
female	60-64	**1.00**	**0.96**	**0.94**	**0.92**	**0.90**	**0.87**	**0.86**	**0.84**	**0.83**	**0.82**	**0.80**	**0.79**	**0.78**
female	65-69	**1.00**	**0.97**	**0.95**	**0.94**	**0.92**	**0.90**	**0.89**	**0.87**	**0.85**	**0.83**	**0.81**	**0.80**	**0.78**
female	70-74	**1.00**	**0.95**	**0.92**	**0.89**	**0.87**	**0.85**	**0.84**	**0.83**	**0.81**	**0.80**	**0.79**	**0.77**	**0.76**
female	75-79	**1.00**	**0.95**	**0.91**	**0.88**	**0.84**	**0.81**	**0.78**	**0.76**	**0.74**	**0.72**	**0.71**	**0.70**	**0.69**
female	80-84	**1.00**	**0.96**	**0.94**	**0.91**	**0.88**	**0.85**	**0.82**	**0.79**	**0.76**	**0.74**	**0.71**	**0.69**	**0.67**
female	85+	**1.00**	**0.97**	**0.94**	**0.92**	**0.90**	**0.89**	**0.87**	**0.85**	**0.83**	**0.81**	**0.79**	**0.77**	**0.75**

For the in-migration input file, the age-specific migration rates (per 1,000 people) by sex and single year of age are entered for the base year in the in-migration schedule shown in Figure 3.33. In the GROS 2008-based projections, the net-migration is expected to be positive; therefore, the out-migration can be set at zero and only the in-migration needs to be entered. The example shown here uses both the in- and out-migration files. The migration count can be entered by total and / or by sex and age groups of 0–4, 5–9, …, 70–74, 75+. The example used in Figure 3.33 shows the age and sex groups.

Figure 3.33 Example of Popgroup Migration, In-Migration (Base Year)

Population Estimates and Forecasts **Scotland**

Migration *Age-sex schedule of migration rates, per thousand population*

VALIDATE *In-migration from the UK*

Options

Population Group

Scotland

ASMigR ✔

Double click the cell under any population group for which you will insert below values different from the standard

Data

Age specific migration rates (per 1,000 population)

		Population Group
Sex	**Age**	*Scotland*
male	Newborn	**0.0**
male	0	**0.0**
male	1	**0.1**
male	2	**0.0**
male	3	**0.1**
male	4	**0.0**
male	5	**0.0**
male	6	**0.0**
male	7	**0.0**
male	8	**0.1**
male	9	**0.1**
male	10	**0.0**
male	11	**0.0**
male	12	**0.0**
male	13	**0.1**
male	14	**0.1**
male	15	**0.1**
male	16	**0.1**
male	17	**0.1**
male	18	**0.9**
male	19	**0.7**
male	20	**0.6**
male	21	**0.5**
male	22	**0.4**
male	23	**0.3**
male	24	**0.3**
male	25	**0.3**
male	26	**0.2**
male	27	**0.2**
male	28	**0.2**
male	29	**0.1**
male	30	**0.1**
male	31	**0.1**
male	32	**0.0**
male	33	**0.1**
male	34	**0.1**
male	35	**0.1**
male	36	**0.1**
male	37	**0.1**
male	38	**0.1**
male	39	**0.1**
male	40	**0.1**
male	41	**0.1**
male	42	**0.1**
male	43	**0.0**

Figure 3.34 Example of Popgroup Migration, In-Migration Count

Population Estimates and Forecasts — **Scotland**

Annual Assumptions — Go to Migrants | Go to Differentials | Go to SMigRs

Migration — Options wizard — shortcuts

VALIDATE — ***Total, all groups*** — **Scotland**

Migrants — *Year beginning July 1*

Options	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Provide total migrants														
Trend total migrants														
Provide age-sex mgts	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

NOTE *Double click any option you wish to select (or de-select) for a year and then fill in the relevant data below*

Data	***Total***													
Sex	***Age***													
male	0-4	246	278	280	292	258	252	246	246	246	246	246	246	246
male	5-9	192	210	206	208	180	176	170	170	170	170	170	170	170
male	10-14	202	228	224	224	200	196	192	192	192	192	192	192	192
male	15-19	1,950	2,106	2,062	2,022	1,942	1,920	1,900	1,900	1,900	1,900	1,900	1,900	1,900
male	20-24	2,030	2,324	2,130	1,952	1,698	1,630	1,576	1,576	1,576	1,576	1,576	1,576	1,576
male	25-29	1,092	1,254	1,064	868	604	544	492	492	492	492	492	492	492
male	30-34	396	422	330	240	120	98	84	84	84	84	84	84	84
male	35-39	586	616	554	492	380	354	336	336	336	336	336	336	336
male	40-44	276	272	238	202	152	146	136	136	136	136	136	136	136
male	45-49	286	296	280	268	236	230	226	226	226	226	226	226	226
male	50-54	292	286	274	266	238	232	226	226	226	226	226	226	226
male	55-59	194	174	172	170	156	154	154	154	154	154	154	154	154
male	60-64	26	22	20	20	16	16	16	16	16	16	16	16	16
male	65-69	76	74	74	74	70	70	68	68	68	68	68	68	68
male	70-74	6	4	2	4	4	4	2	2	2	2	2	2	2
male	75+	110	118	118	120	114	114	114	114	114	114	114	114	114
	All Males	7,960	8,684	8,028	7,422	6,368	6,136	5,938	5,938	5,938	5,938	5,938	5,938	5,938
Sex	**Age**													
female	0-4	324	364	364	376	340	338	330	330	330	330	330	330	330
female	5-9	196	216	220	232	214	214	210	210	210	210	210	210	210
female	10-14	100	112	110	108	92	88	86	86	86	86	86	86	86
female	15-19	2,472	2,644	2,622	2,598	2,524	2,498	2,480	2,480	2,480	2,480	2,480	2,480	2,480
female	20-24	1,412	1,752	1,572	1,404	1,130	1,062	1,018	1,018	1,018	1,018	1,018	1,018	1,018
female	25-29	852	1,006	864	724	494	440	394	394	394	394	394	394	394
female	30-34	680	736	662	594	456	430	408	408	408	408	408	408	408
female	35-39	556	582	538	500	418	402	388	388	388	388	388	388	388
female	40-44	322	322	298	274	228	216	210	210	210	210	210	210	210
female	45-49	354	358	344	328	296	288	284	284	284	284	284	284	284
female	50-54	312	306	296	290	266	260	256	256	256	256	256	256	256
female	55-59	258	244	236	234	214	208	208	208	208	208	208	208	208
female	60-64	156	146	142	142	130	128	126	126	126	126	126	126	126
female	65-69	14	12	12	12	10	10	10	10	10	10	10	10	10
female	70-74	40	42	42	42	40	40	38	38	38	38	38	38	38
female	75+	166	178	188	196	194	192	192	192	192	192	192	192	192
	All Females	8,214	9,020	8,510	8,054	7,046	6,814	6,638	6,638	6,638	6,638	6,638	6,638	6,638
	All Persons	16,174	17,704	16,538	15,476	13,414	12,950	12,576	12,576	12,576	12,576	12,576	12,576	12,576

The same process as for in-migration is used with out-migration data shown in Figures 3.35 and 3.36.

Figure 3.35 Example of Popgroup Migration, Out-Migration (Base Year)

Population Estimates and Forecasts **Scotland**

Migration *Age-sex schedule of migration rates, per thousand population*

VALIDATE *Out-migration to the UK*

Options

Population Group

Scotland

ASMigR ✔

Double click the cell under any population group for which you will insert below values different from the standard

Data

Age specific migration rates (per 1,000 population)

Population Group

Sex	Age	*Scotland*
male	Newborn	0.0
male	0	0.0
male	1	0.0
male	2	0.0
male	3	0.0
male	4	0.0
male	5	0.0
male	6	0.0
male	7	0.0
male	8	0.0
male	9	0.0
male	10	0.0
male	11	0.0
male	12	0.0
male	13	0.0
male	14	0.0
male	15	0.0
male	16	0.0
male	17	0.0
male	18	0.0
male	19	0.0
male	20	0.0
male	21	0.0
male	22	0.0
male	23	0.0
male	24	0.0
male	25	0.0
male	26	0.0
male	27	0.0
male	28	0.0
male	29	0.0
male	30	0.0
male	31	0.0
male	32	0.0
male	33	0.0
male	34	0.0
male	35	0.0
male	36	0.0
male	37	0.0
male	38	0.0
male	39	0.0
male	40	0.0
male	41	0.0
male	42	0.0
male	43	0.0

Figure 3.36 Example of Popgroup Migration, Out-Migration Count

Population Estimates and Forecasts **Scotland**

Annual Assumptions Go to Migrants Go to Differentials Go to SMigRs

Migration Options wizard ~~~~~~~~~~~~~~~shortcuts~~~~~~~~~~~~~~~

VALIDATE *Total, all groups* **Scotland**

Migrants *Year beginning July 1*

Options	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Provide total migrants														
Trend total migrants														
Provide age-sex mgts	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

NOTE *Double click any option you wish to select (or de-select) for a year and then fill in the relevant data below*

Data	*Total*														
Sex	***Age***														
male	0-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	5-9	0	0	0	0	0	2	2	2	2	2	2	2	2	2
male	10-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	15-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	20-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	25-29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	30-34	0	0	0	4	36	50	58	58	58	58	58	58	58	58
male	35-39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	40-44	10	20	28	38	66	70	74	74	74	74	74	74	74	74
male	45-49	10	22	30	38	52	58	58	58	58	58	58	58	58	58
male	50-54	0	0	0	0	0	0	0	0	0	0	0	0	0	0
male	55-59	0	0	0	0	4	6	6	6	6	6	6	6	6	6
male	60-64	30	72	84	92	112	114	114	114	114	114	114	114	114	114
male	65-69	4	20	22	24	32	32	32	32	32	32	32	32	32	32
male	70-74	14	24	26	26	32	32	32	32	32	32	32	32	32	32
male	75+	6	8	8	8	10	10	10	10	10	10	10	10	10	10
	All Males	74	166	198	230	344	374	386	386	386	386	386	386	386	386

Sex	**Age**														
female	0-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	5-9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	10-14	16	18	18	20	26	26	26	26	26	26	26	26	26	26
female	15-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	20-24	0	0	0	0	0	4	18	18	18	18	18	18	18	18
female	25-29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	30-34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	35-39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	40-44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	45-49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	50-54	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	55-59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
female	60-64	0	6	6	6	10	10	10	10	10	10	10	10	10	10
female	65-69	78	104	108	112	124	126	126	126	126	126	126	126	126	126
female	70-74	6	10	8	8	10	10	10	10	10	10	10	10	10	10
female	75+	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	All Females	100	138	140	146	170	176	190	190	190	190	190	190	190	190
	All Persons	174	304	338	376	514	550	576	576	576	576	576	576	576	576

3.4.1 Results from the Replication of the GROS Projections Using Popgroup

Tooled with this data, the Popgroup software allows a forecast scenario to be executed and places the results of the forecast into an output folder for perusal. The results of the replicated GROS projections using Popgroup as well as the original predictions from the GROS will now be examined. There is a methodology difference between the GROS and Popgroup calculations when dealing with migration. The Popgroup does not account for migrants' deaths within the year of migration or female migrants giving birth within the same year of their migration. This affects the mortality and fertility results of the migration year, therefore affecting the remaining projection years also. This is overcome by entering the annual GROS data into the Popgroup files. This data already accounts for the annual surviving net-migrants and births where babies are born to migrants within their first year of migration.

When examining the overall population, it was found there are similar trend in both the GROS projections and the Popgroup projections. The average error in absolute value between Popgroup and the GROS projections in 2050 for all age groups can be seen in Table 3.11.

Table 3.11 Average Error in Absolute Value between Popgroup and the GROS Projections, 2050

Age	*Male*	*Female*
0- 4	0.0042	0.0038
5- 9	0.0013	0.0009
10-14	0.0039	0.0038
15-19	0.0085	0.0109
20-24	0.0027	0.0013
25-29	0.0062	0.0075
30-34	0.0073	0.0062
35-39	0.0010	0.0002
40-44	0.0063	0.0058
45-49	0.0114	0.0087
50-54	0.0172	0.0135
55-59	0.0202	0.0204
60-64	0.0091	0.0116
65-69	0.0123	0.0088
70-74	0.0395	0.0229
75-79	0.0247	0.0405
80-84	0.0115	0.0021
85+	0.0145	0.0013
Total	***0.0007***	***0.0025***

The GROS and Popgroup results, as shown in Figure 3.37, depict a similar projection trend for the total population of Scotland up until 2050.

Figure 3.37 Projected Total Population, GROS & Popgroup, 2008–2050

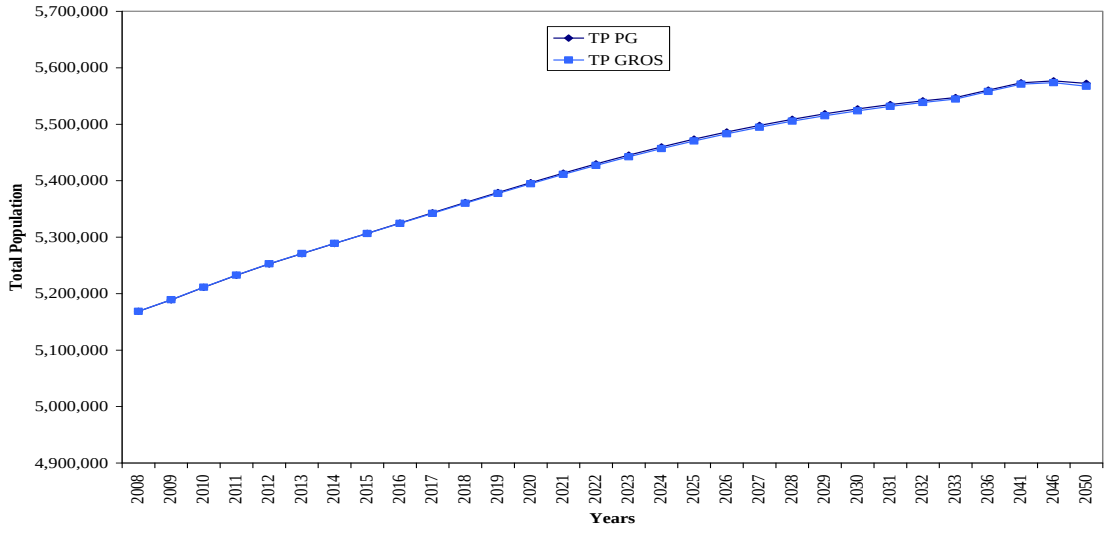
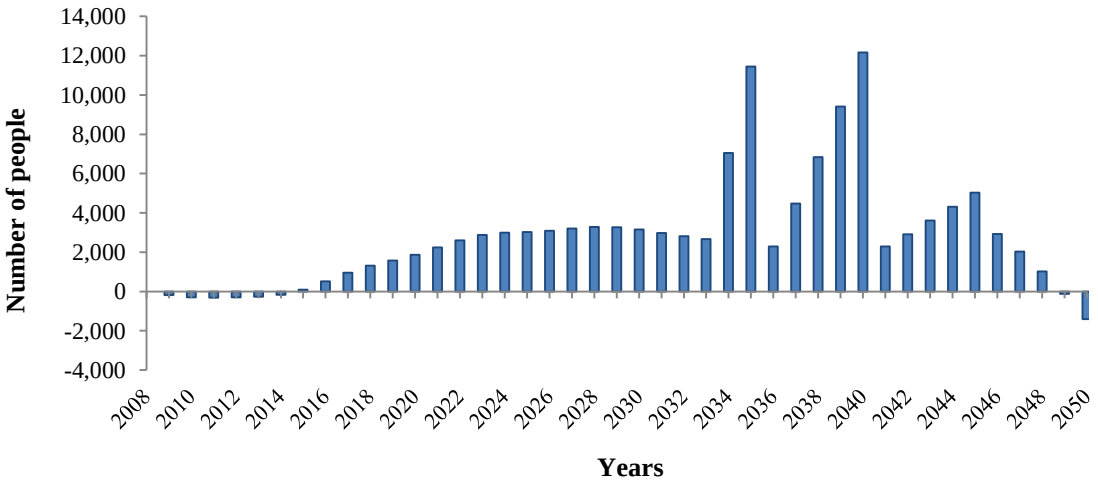


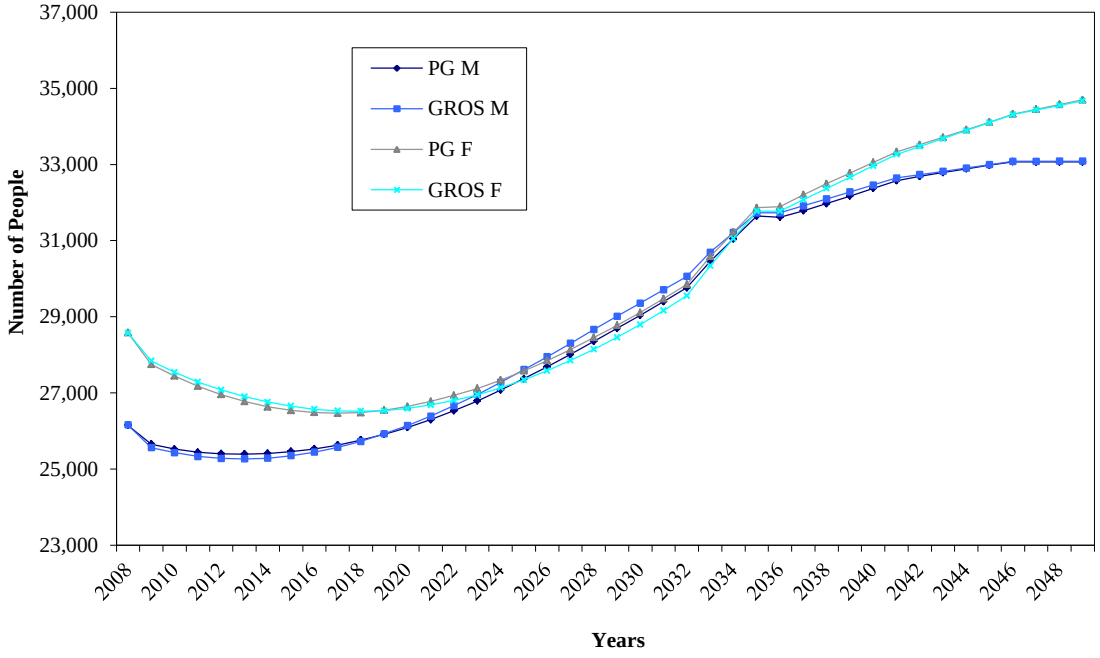
Figure 3.38 shows the actual difference between the Popgroup and GROS population projections from Figure 3.37.

Figure 3.38 Difference between GROS & Popgroup Population Projections, 2008–2050



Figures 3.39 to 3.41 show the comparison between Popgroup and the GROS projections for the three components of population change, mortality, fertility and migration and show they all follow similar trends.

Figure 3.39 Projected Number of Total Mortality, GROS & Popgroup, 2008–2050



Years between 2035, 2040, 2045, and 2050 have been extrapolated for this diagram only

Figure 3.40 Projected Number of Male & Female Births, GROS & Popgroup, 2008–2050

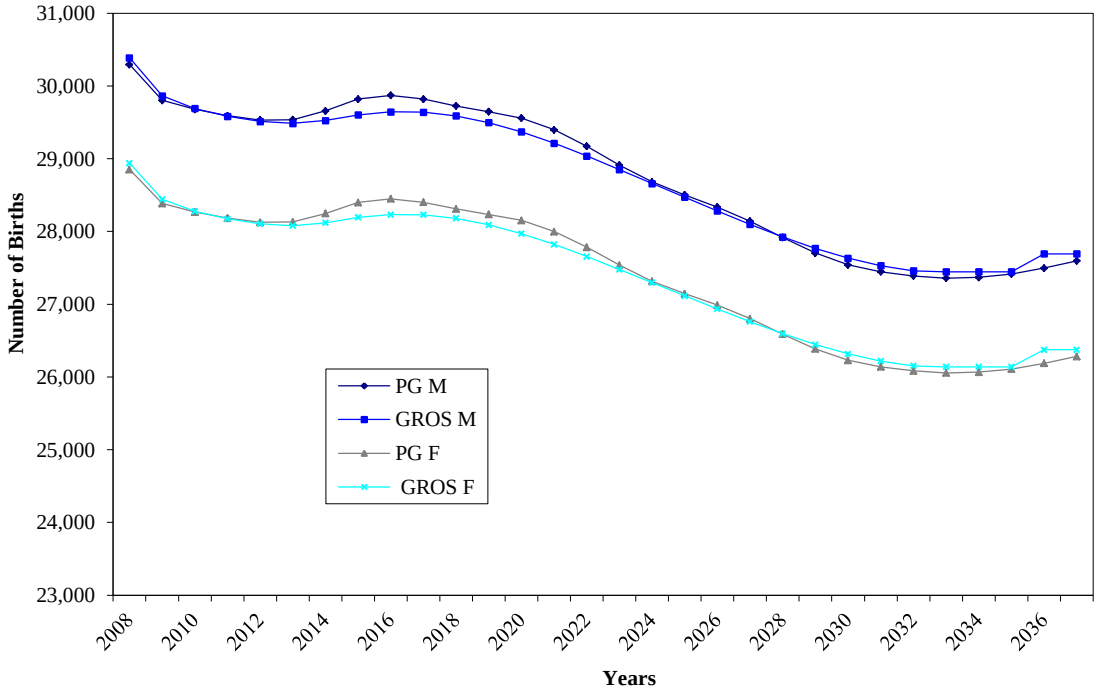


Figure 3.41 Projected Number of Male & Female Migration, GROS & Popgroup, 2008–2050

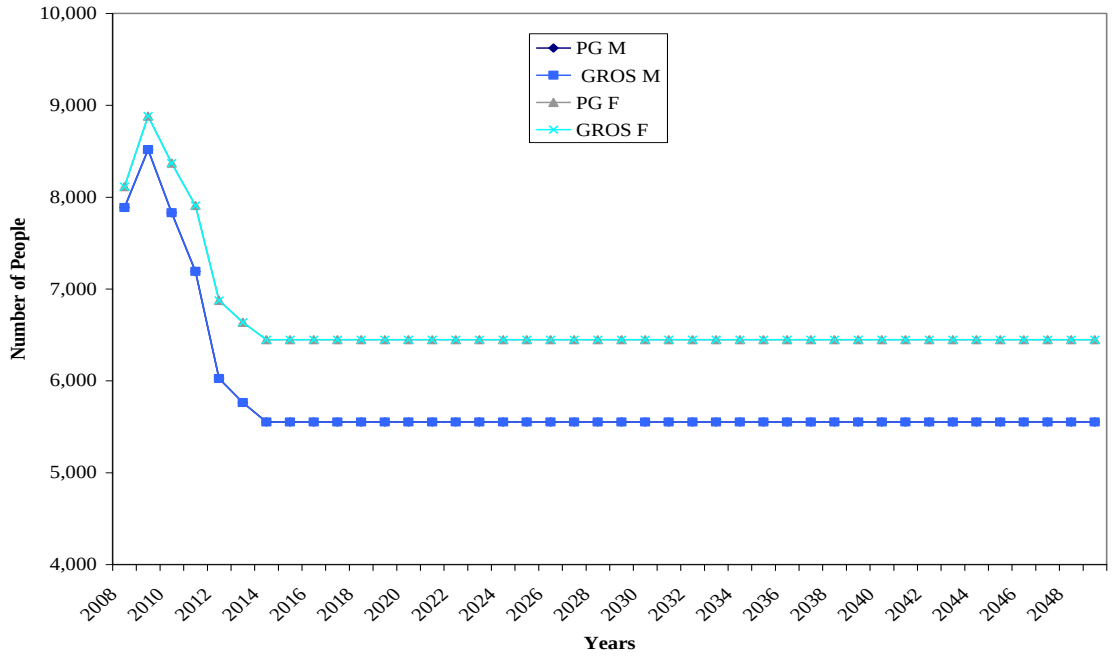


Figure 3.42 shows the Scottish projections by the GROS and Popgroup by sex and Figures 3.43 to 3.60 show the number of projected males and females broken down into age groups of 0–4, 5–9, 10–14, …, 80–84, 85+, all of which exhibit similar forecasted trends.

Figure 3.42 Projected Number of Males & Females, GROS & Popgroup, 2008–2050

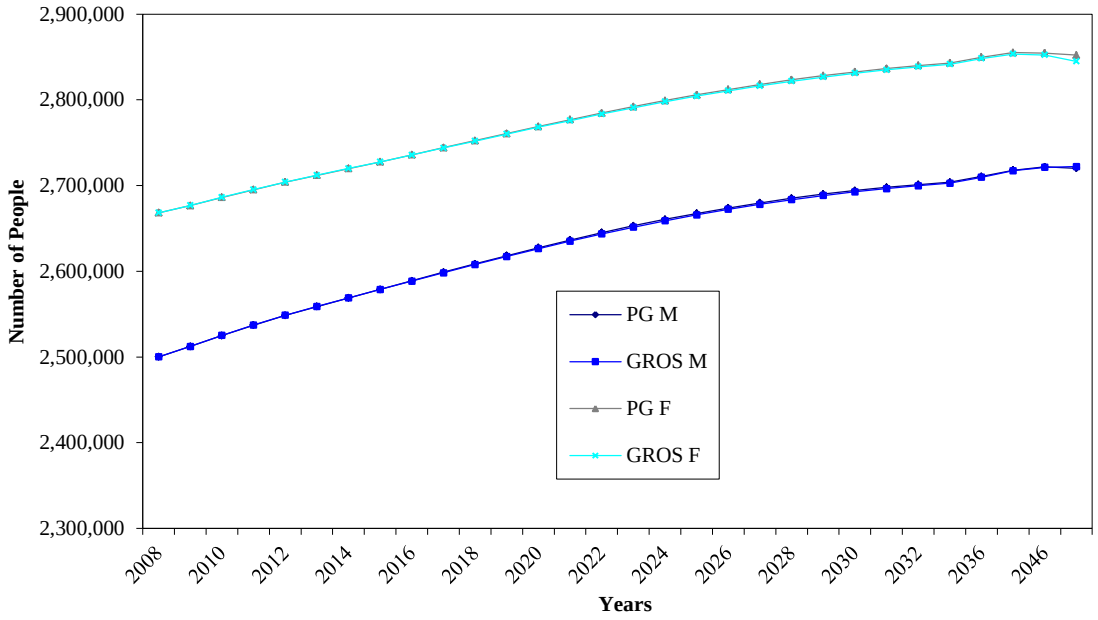


Figure 3.43 Projected Number of Males & Females Aged 0–4, GROS & Popgroup, 2008–2050

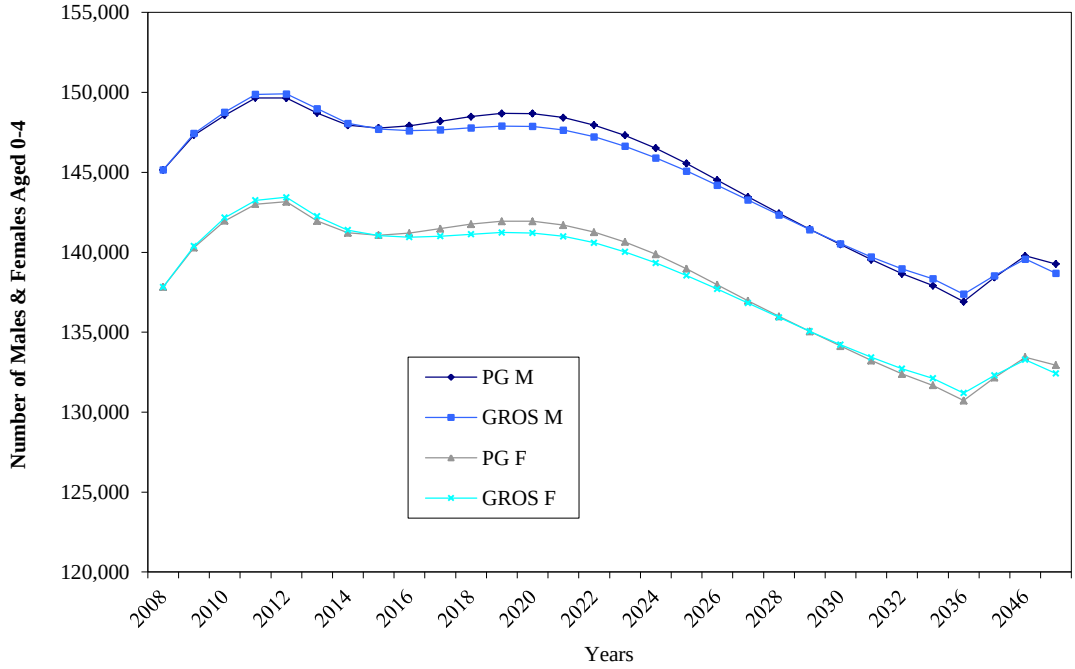


Figure 3.44 Projected Number of Males & Females Aged 5–9, GROS & Popgroup, 2008–2050

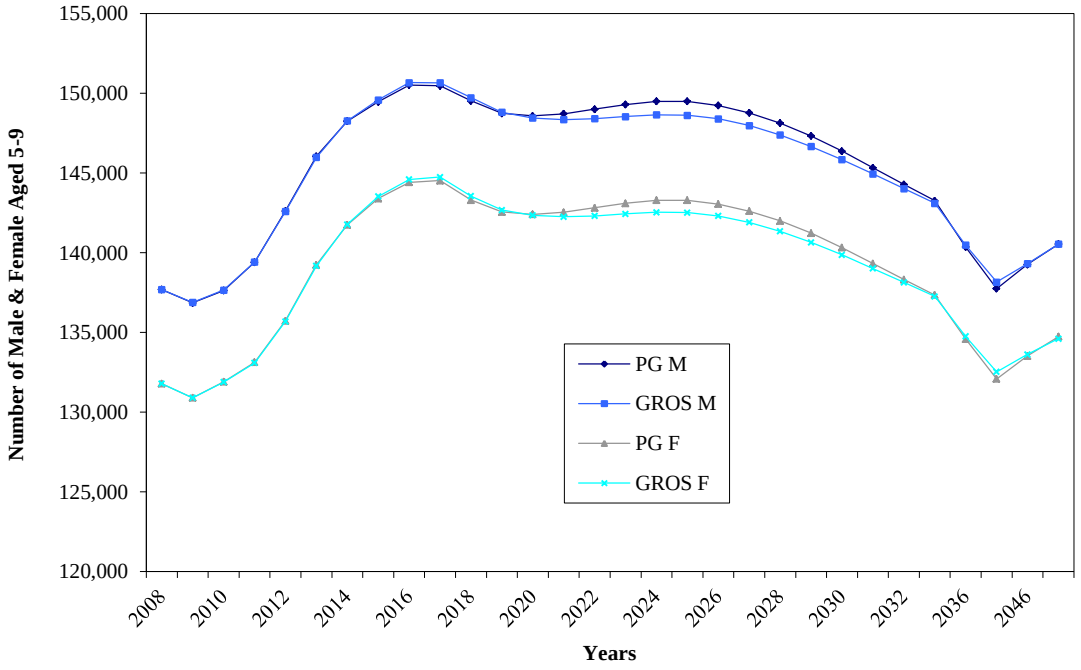


Figure 3.45 Projected Number of Males & Females Aged 10–14, GROS & Popgroup, 2008–2050

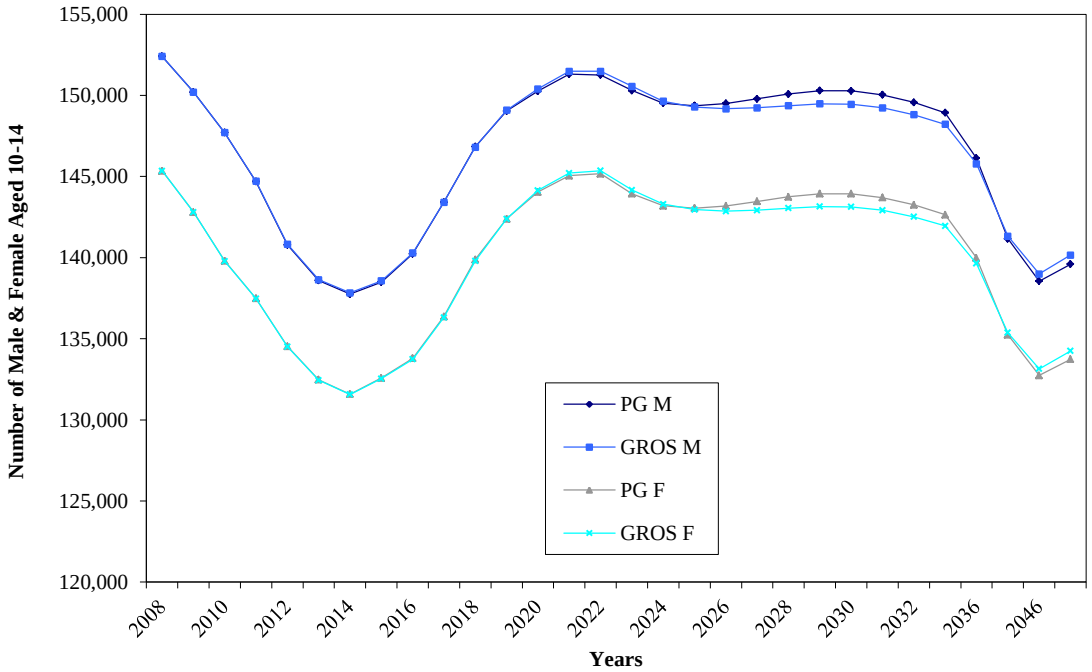


Figure 3.46 Projected Number of Males & Females Aged 15–19, GROS & Popgroup, 2008–2050

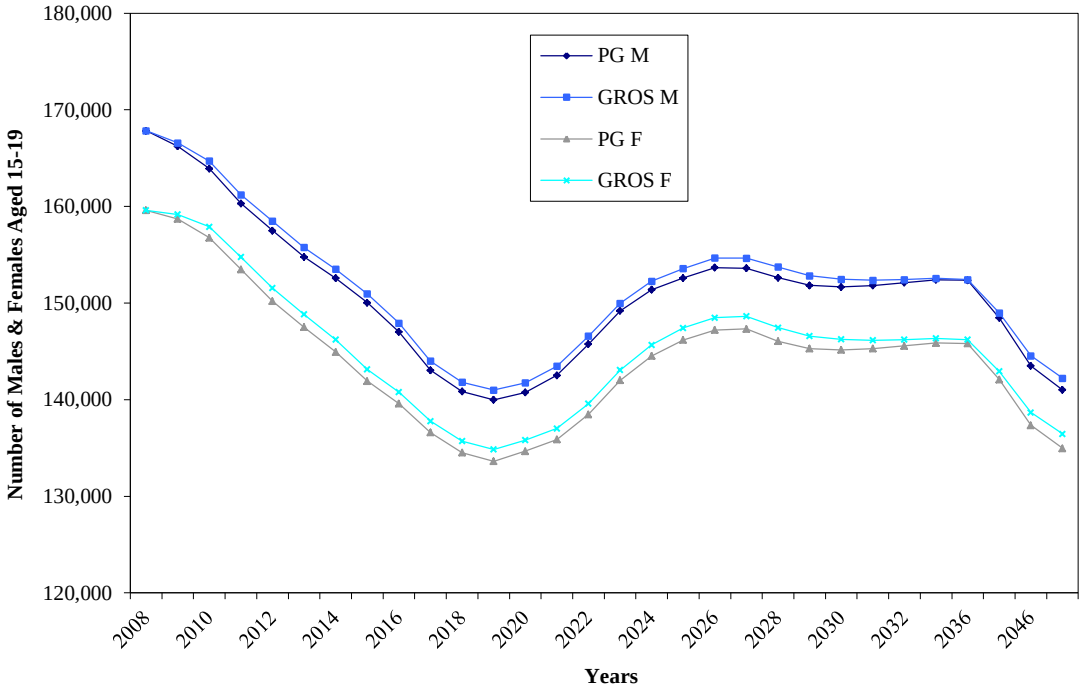


Figure 3.47 Projected Number of Males & Females Aged 20–24, GROS & Popgroup, 2008–2050

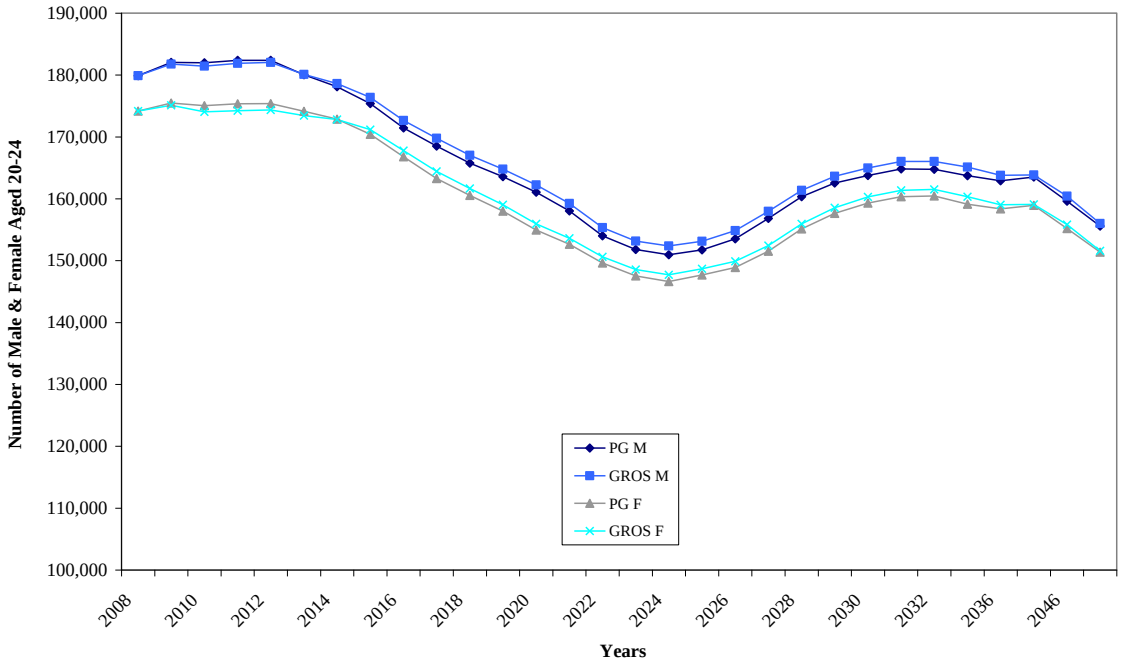


Figure 3.48 Projected Number of Males & Females Aged 25–29, GROS & Popgroup, 2008–2050

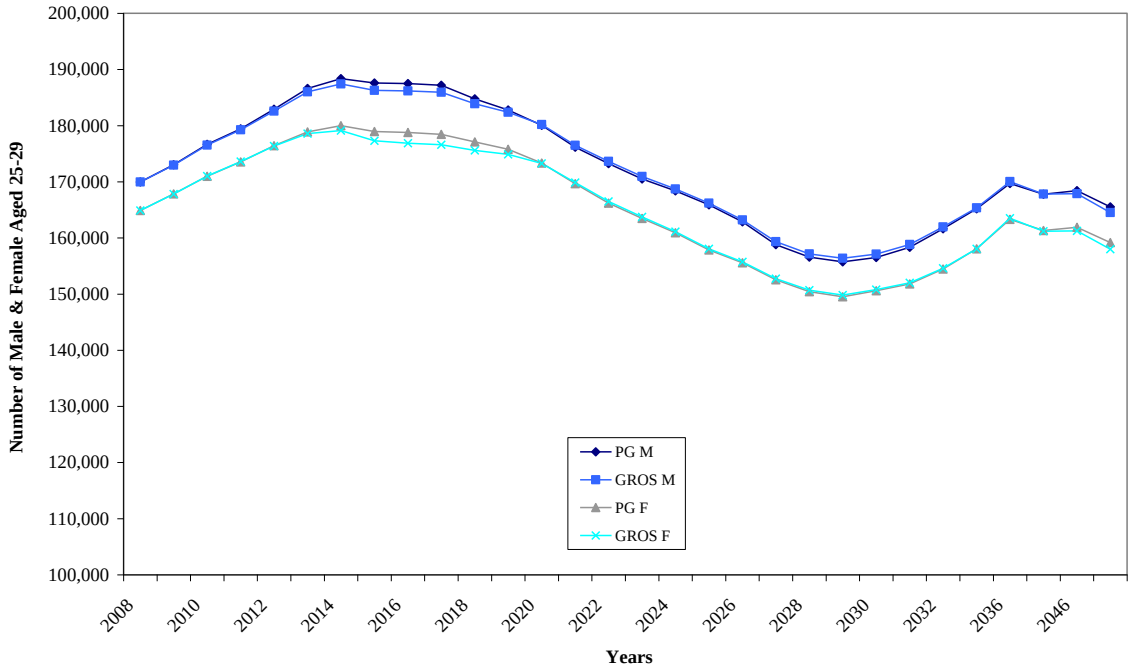


Figure 3.49 Projected Number of Males & Females Aged 30–34, GROS & Popgroup, 2008–2050

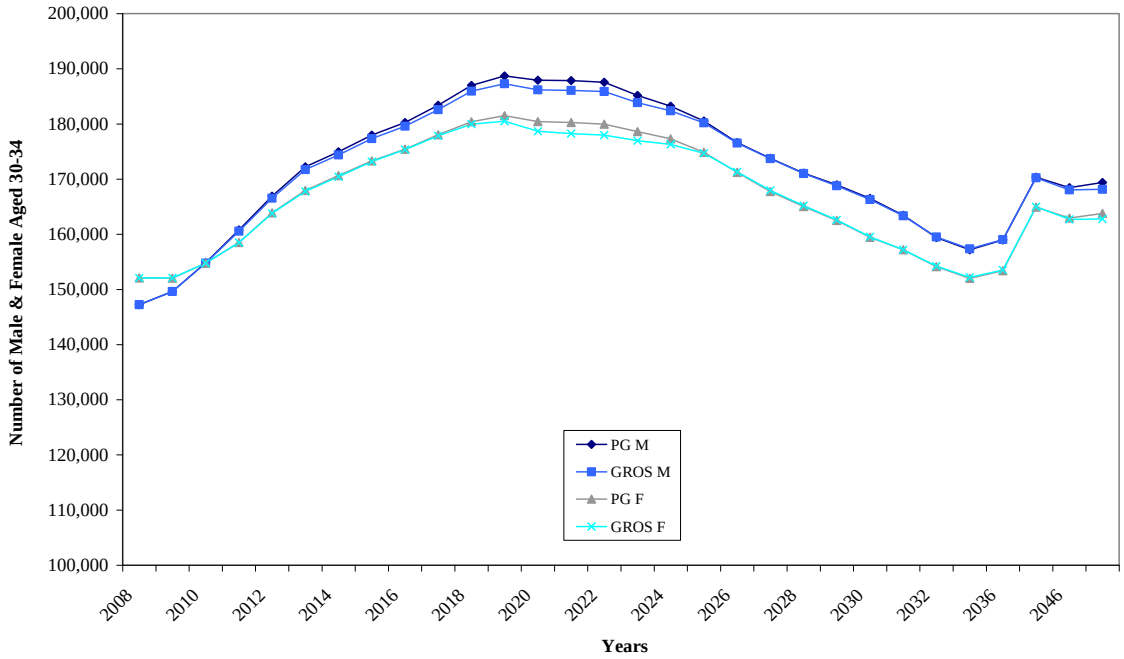


Figure 3.50 Projected Number of Males & Females Aged 35–39, GROS & Popgroup, 2008–2050

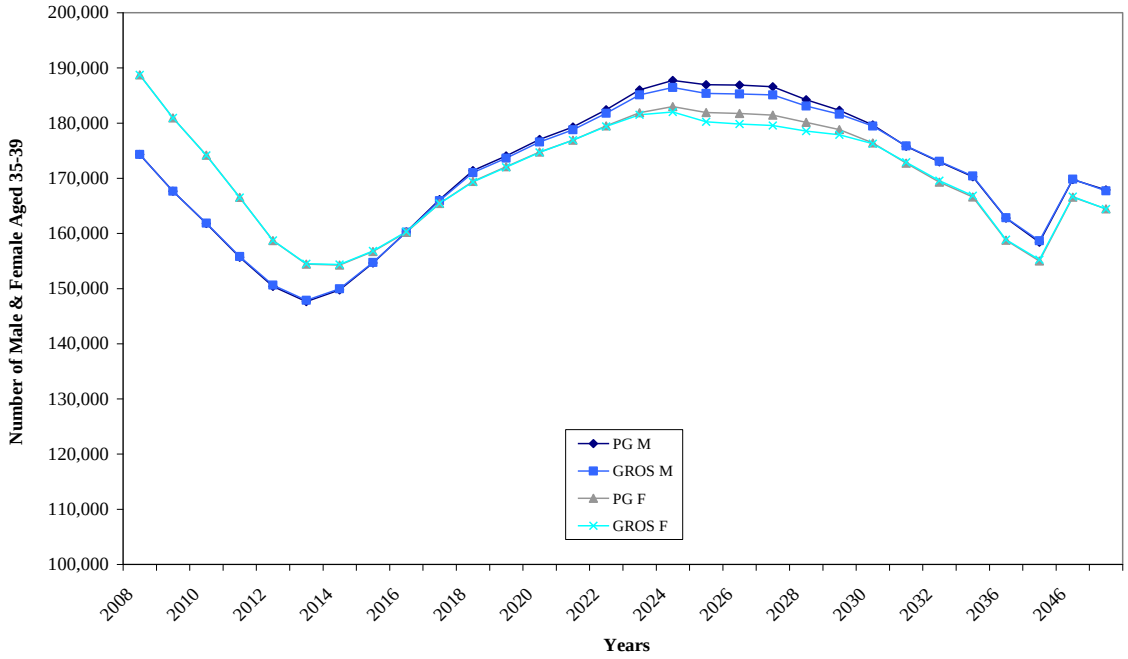


Figure 3.51 Projected Number of Males & Females Aged 40–44, GROS & Popgroup, 2008–2050

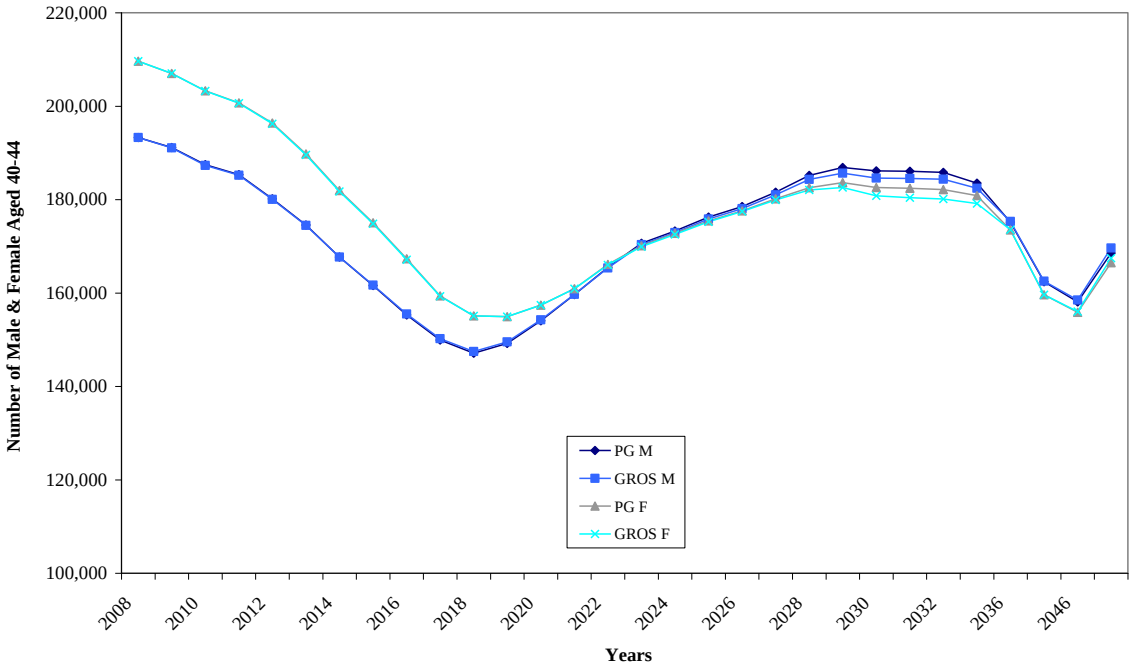


Figure 3.52 Projected Number of Males & Females Aged 45–49, GROS & Popgroup, 2008–2050

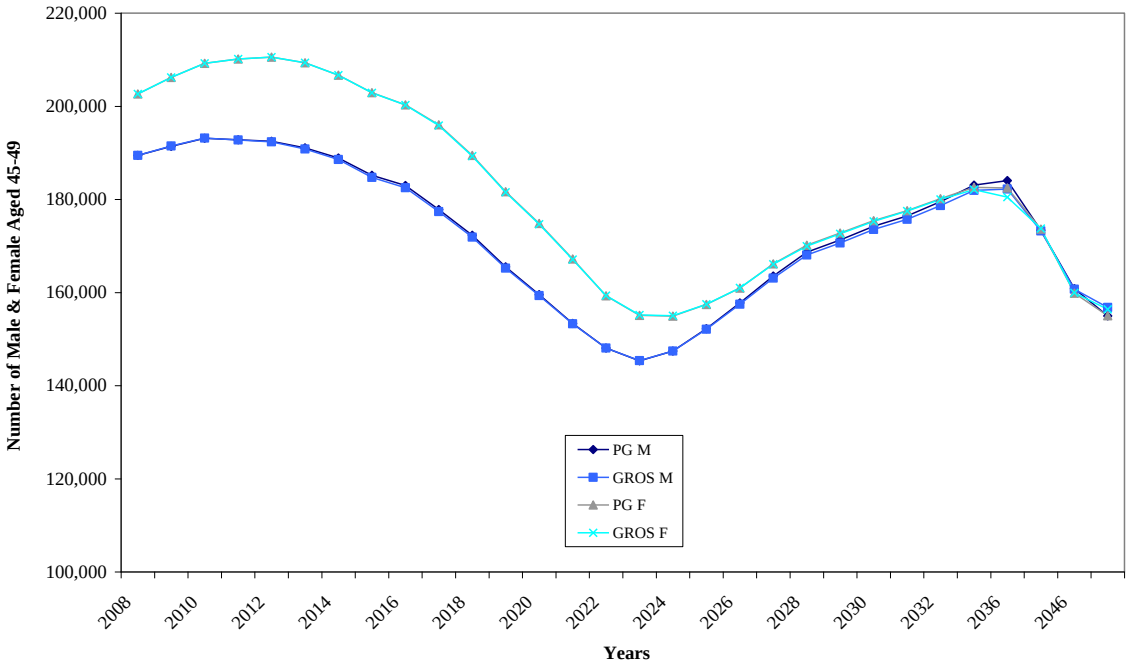


Figure 3.53 Projected Number of Males & Females Aged 50–54, GROS & Popgroup, 2008–2050

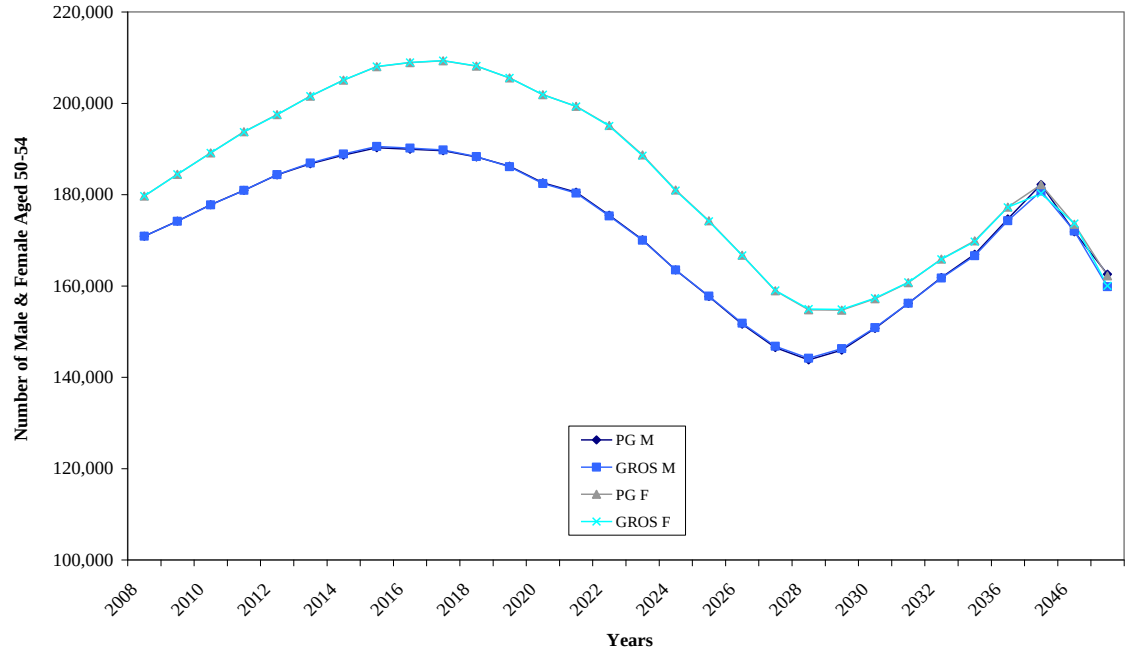


Figure 3.54 Projected Number of Males & Females Aged 55–59, GROS & Popgroup, 2008–2050

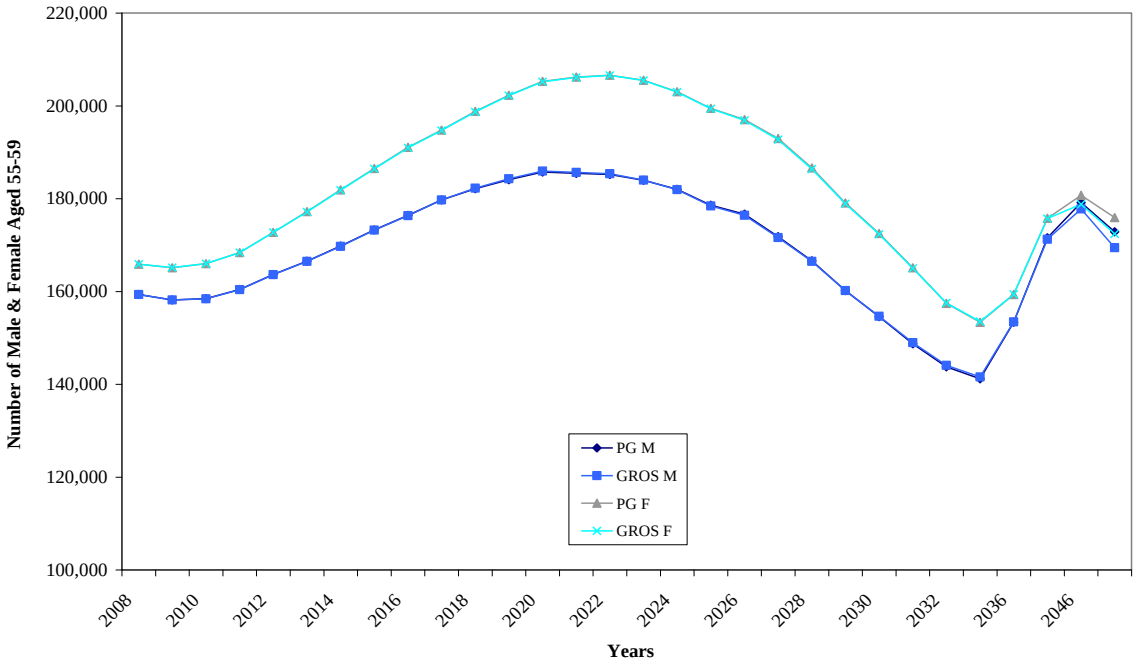


Figure 3.55 Projected Number of Males & Females Aged 60–64, GROS & Popgroup, 2008–2050

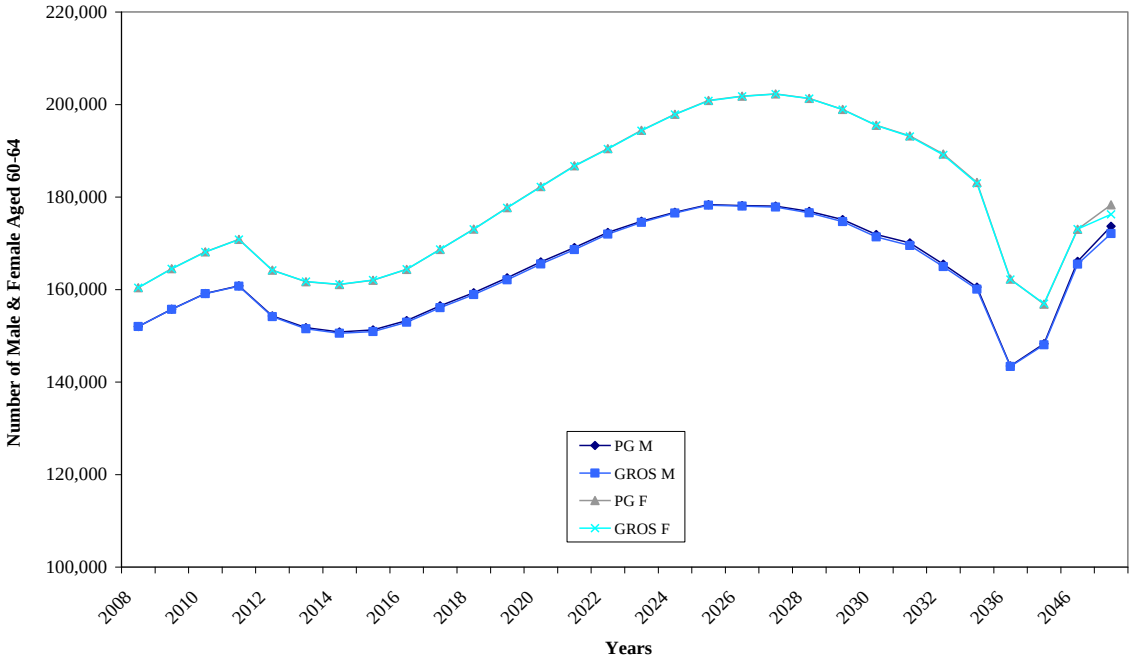


Figure 3.56 Projected Number of Males & Females Aged 65–69, GROS & Popgroup, 2008–2050

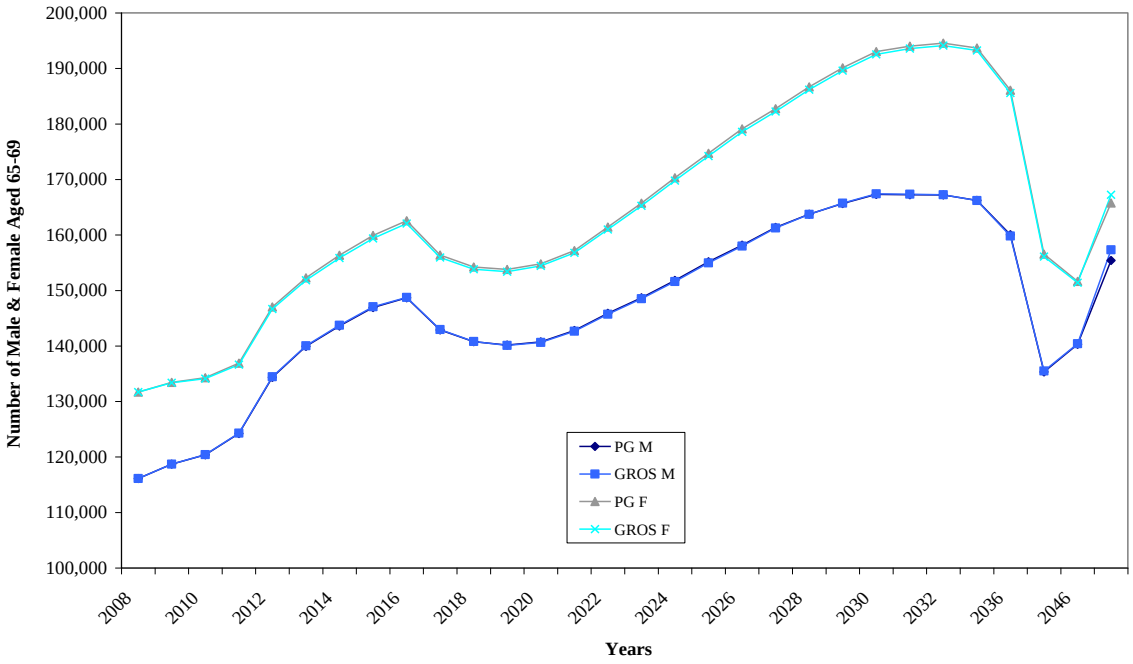


Figure 3.57 Projected Number of Males & Females Aged 70–74, GROS & Popgroup, 2008–2050

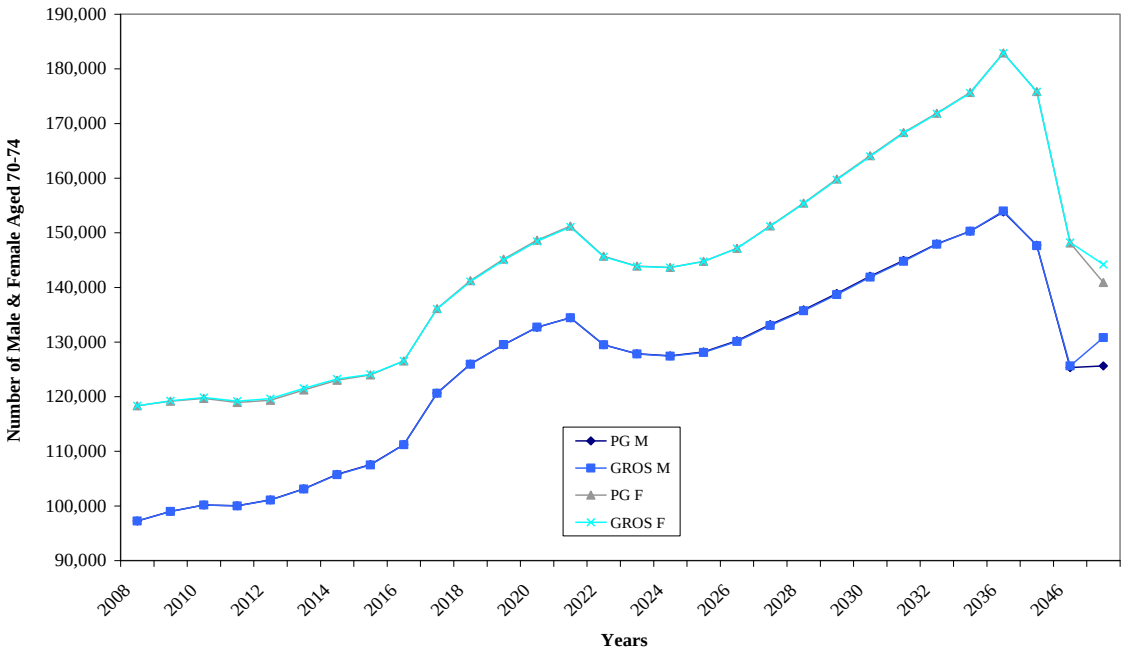


Figure 3.58 Projected Number of Males & Females Aged 75–79, GROS & Popgroup, 2008–2050

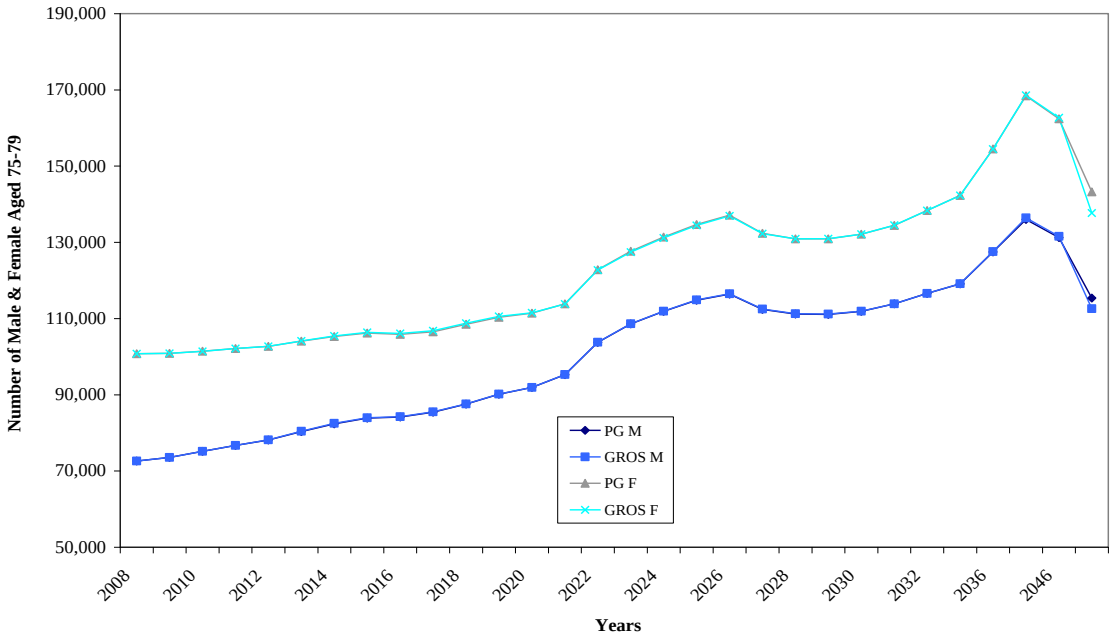


Figure 3.59 Projected Number of Males & Females Aged 80–84, GROS & Popgroup, 2008–2050

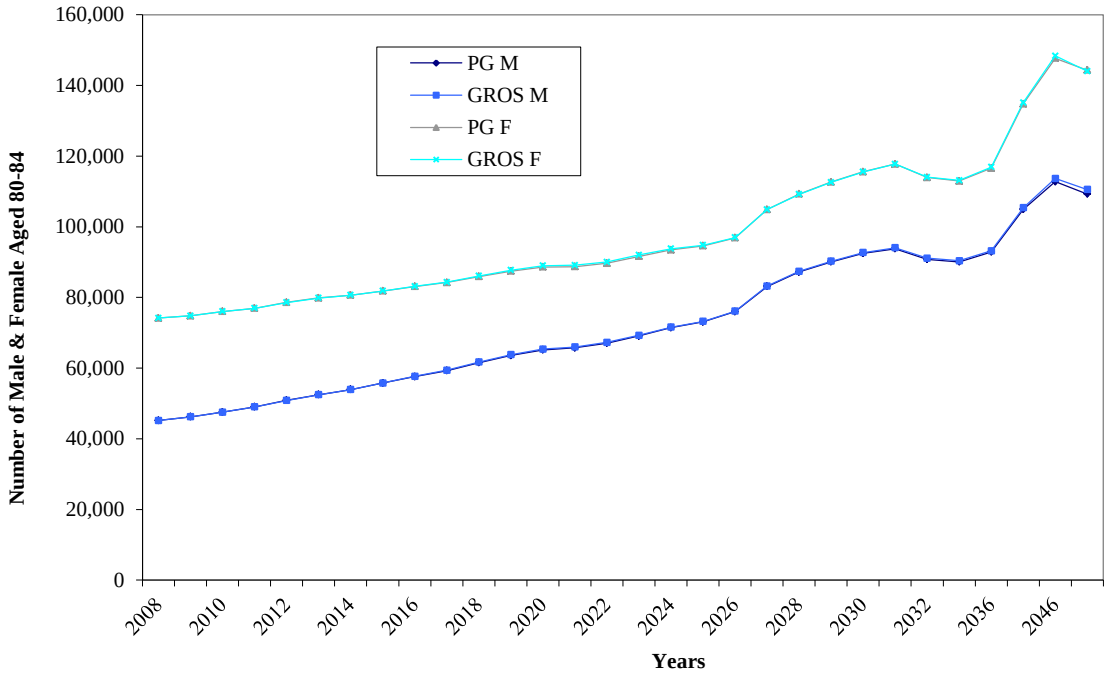
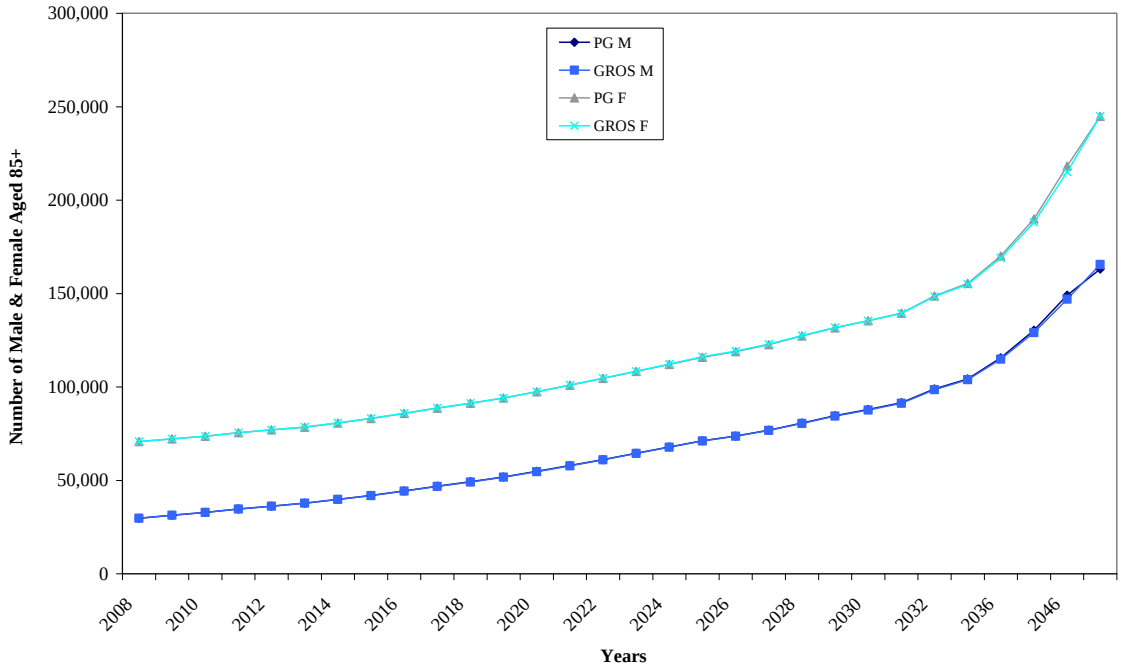


Figure 3.60 Projected Number of Males & Females Aged 85+, GROS & Popgroup, 2008–2050



3.5 Alternative Demographic Futures for Scotland Using Popgroup

The projections carried out by the GROS assume particular levels for mortality, fertility, and migration. These assumptions can change. The next part of this chapter investigates what level of fertility and migration Scotland would have to experience in order to counteract the ageing and long-term declining population. The GROS projections have been closely replicated using the Popgroup software in order to prove the software has the ability to carry out the population projections efficiently. This software will be used to examine alternative demographic futures for Scotland.

As population forecasting are subject to many uncertainties and errors, one of the ways to find out which parameter is critical (which assumptions affect the population increase / decrease the most), and to find out the impact of what any changes in these key parameters will have on the Popgroup model, is to carry out a sensitivity analysis. A sensitivity analysis also allows us to build up confidence in the Popgroup model. The GROS projects the TFR will continue to be at a level of 1.7 from 2013 to 2050 and expects a long-term positive net-migration of 12,000 people up until 2050.

Questions of interest are what would happen if both migration and fertility were to increase / decrease more significantly than the GROS assumptions? At what level would fertility and migration need to be in order to offset the ageing and long-term declining population?

This is what the remainder of this chapter explores. Three scenarios are investigated. Firstly, fertility sensitivity is carried out (scenario 1), followed by a migration sensitivity analysis (scenario 2), and finally, for fullness, an examination of what the demographic impact an improvement in mortality would have in Scotland (scenario 3). Bearing in mind people do not get to choose when they die, unlike fertility (where people have a choice to have children or not) and migration (where people can decide to emigrate or immigrate), changes in mortality is limited.

These analyses focus on the working-age population as this is an important economic group that is currently ageing and declining. This could have a profound effect on the current and future economic wealth and wellbeing of Scotland, "Population growth (and growth of the working-age population in particular) is one of 3 key supply-side drivers of GDP growth, over the medium to long term, along with labour market participation and productivity" Scottish Government (2010a, p.6). These scenarios further focus on the 20–64 age group as they account for 95 per cent of the working-age population in Scotland (Wright and Lisenkova, 2006).

Scotland's current and predicted decline in the size of the working-age population is not an isolated event for a developed country. Research shows that increase in the size of the working-age population has been driven by the less developed countries in the world. According to Hayutin (2010), the working-age population has increased by 40 per cent (1.3bn) in the last two decades, with 95 per cent of the growth taking place in the less developed countries (Asia making up around 66% of the world's growth and Africa making up 20%). The projection over the next two decades is that the size of the working population in Europe will decrease by 10 per cent (around 50 million). At the same time, the less developed countries are projected to increase by around 1bn (50% is expected to be from Asia and almost 40% from Africa).

The size of the working-age population of the world has increased from 1.5bn in 1950 to 4.5bn in 2010 and is projected to increase to 5.8bn by 2050, while the size of the working-age population in the EU-27 has increased by 26 per cent from 1950 to 2010 (from 246.4m in 1950 to 333.4m in 2010). This is expected to decrease by 16 per cent by 2050 (to 279.8m in 2050). Table 3.13 shows the projected change in the size of the working-age population for selected countries. The results show that Australia, USA, Canada, and the UK will have a slight growth, while the size of the working-age population in Spain, France, Netherlands, Italy, Germany, and Japan will reduce over the coming decades.

Table 3.12 Changes in the Working Population, Selected Countries

Countries	***2010***	***2030***	***2050***
	Millions	***Change in Millions***	
Australia	14.5	1.4	1.3
USA	212.3	18.1	17.5
Canada	23.6	1.0	1.6
UK	40.9	1.2	1.8
Spain	30.8	0.7	-4.1
France	40.5	-1.1	-1
Netherlands	11.2	-0.7	-0.3
Italy	39.3	-3.0	-5.9
Germany	54.3	-8.1	-7.4
Japan	81.6	-13.0	-16.7

N.B. Working age defined as 15–64 year olds

Source: Hayutin (2010)

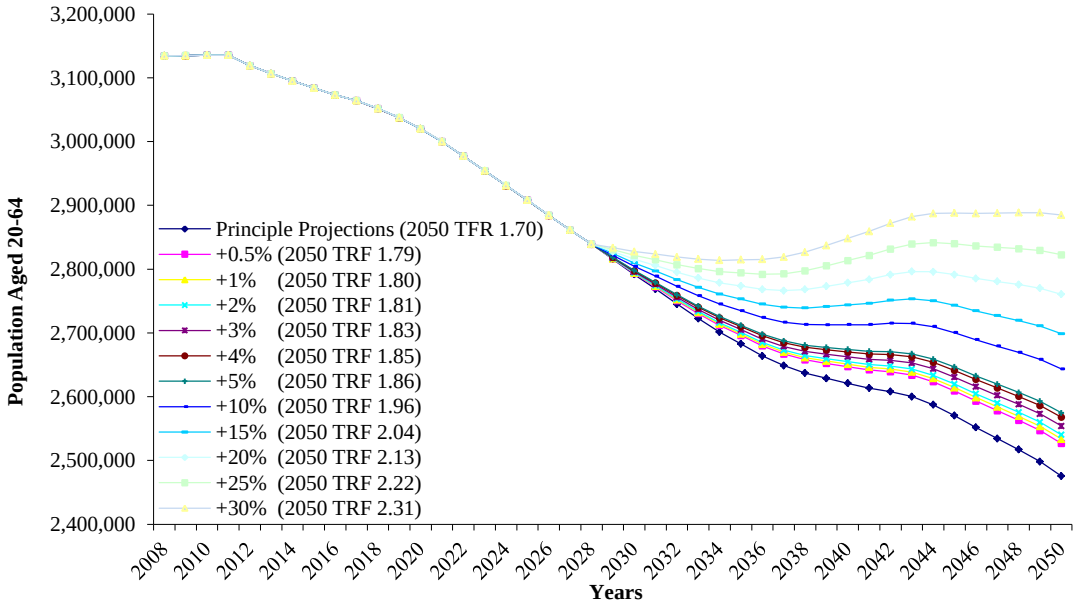
3.5.1 Fertility Sensitivity Analysis

This analysis investigates what would happen if fertility rates increased higher than what the GROS anticipates in the 2008-based principle projections. One of the assumptions of the model is zero net-migration. By assuming this, it will allow other assumptions to be made on how much fertility alone would need to increase by in order to combat the ageing and declining population in Scotland. A further assumption used is the GROS 2008-based principle projections for mortality. The scenario projects the 2008-based ASFR and shows that by 2050, the total fertility rate in Scotland will be of 1.7 (this fertility rate is not high enough to combat the

ageing and declining population). The 2008-based ASFR is then increased by 0.5%, 1%, 2%, 3%, 4%, 5%, 10%, 15%, 20%, 25% and 30%, resulting a TFR increase to 1.79, 1.80, 1.81, 1.83, 1.85, 1.86, 1.96, 2.04, 2.13, 2.22 and 2.31 respectively, by 2050, as shown in Figure 3.61.

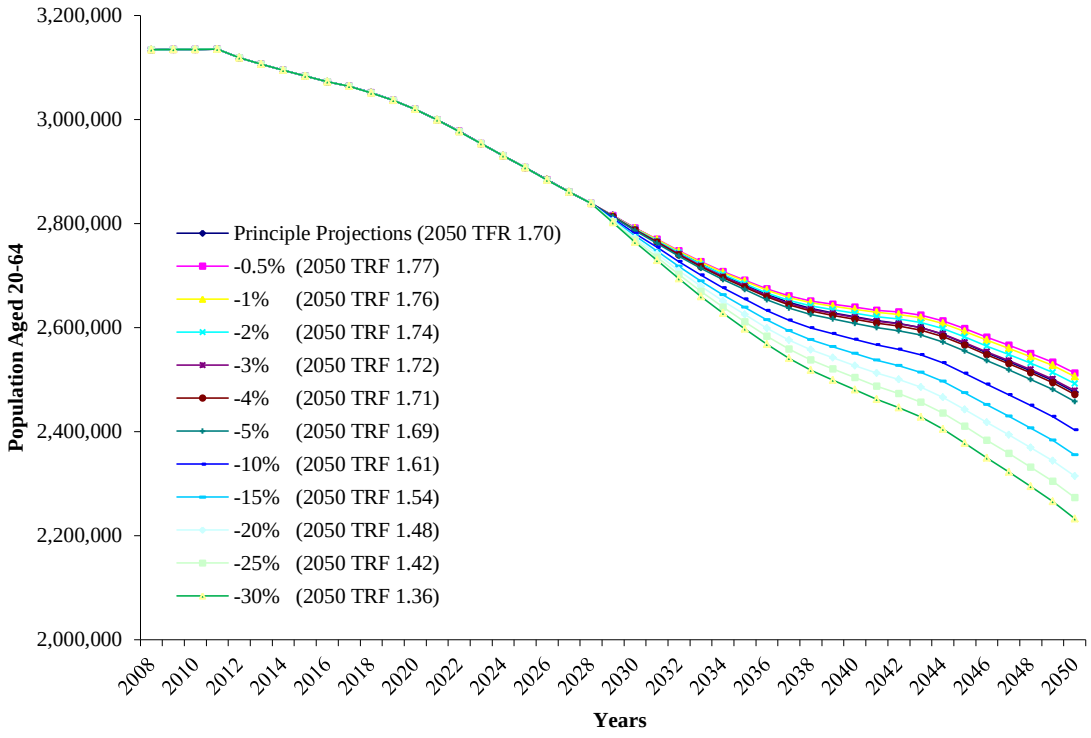
Figure 3.61 also shows that the Scottish fertility rate would have to increase by 18 per cent in order to replace itself (replacement level 2.1) by 2050. The higher fertility rates would only begin to affect the working population from 2028, as there is a twenty-year lag. This means that even if Scotland were to experience a sharp rise in fertility today, of say a high of 30 per cent, this would not affect the working-age population until two decades later. The increases in fertility rates show that, from the current principle projection in 2008 (3,134,316 working-age population), up to and beyond the replacement level, is that even under the highest increase of 2.31 replacement level, there still will be a significant decline (7.96%) in the size of the working-age population regardless of higher fertility rate by 2050 (2,884,781 working-age population). As a result, it can be assumed that a higher level of fertility is not going to prevent Scotland from population decline and ageing. Fertility is not a critical parameter in this scenario, although in any event an increase in the level of fertility is desirable.

Figure 3.61 Working-Age Population, Higher Fertility and Zero Migration, Scotland, 2008–2050



It is reasonable to assume the fertility rate could decline from its current level. Figure 3.62 shows the results of a decrease from the 2008-based ASFR, by 0.5%, 1%, 2%, 3%, 4%, 5%, 10%, 15%, 20%, 25%, and 30% resulting in a TFR by 2050 of 1.77, 1.76, 1.74, 1.72, 1.71, 1.69, 1.61, 1.54, 1.48, 1.42, and 1.36 respectively. The results show that a decline in the fertility rate with zero net-migration would of course compound the ageing and declining population problem further. The working-age population would shift from 3,134,316 in 2008 to a potential low of 2,232,582 in 2050. A decrease in the fertility rate of 30 per cent shows a potential decrease of 28.7 per cent in the size of the working-age population.

Figure 3.62 Working-Age Population, Lower Fertility and Zero Migration, Scotland, 2008–2050



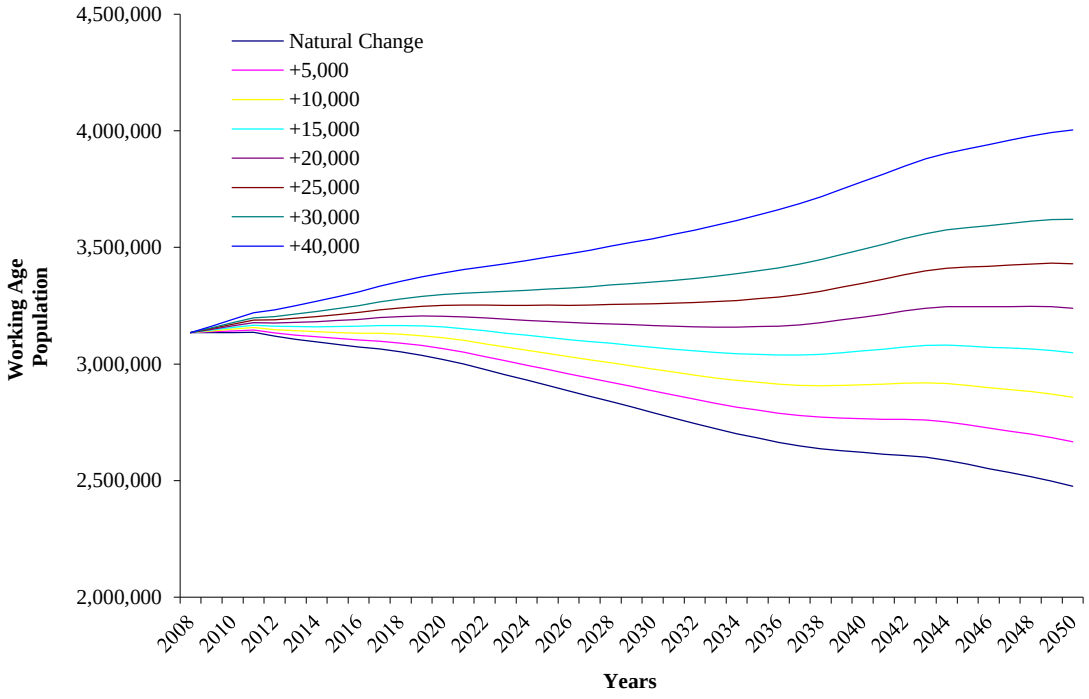
3.5.2 Migration Sensitivity Scenario

The migration sensitivity analysis, scenario 2, assumes a positive net-migration of young migrants with children (two adults 66.67%, and one child 33.33%). It is also assumed the young migrants are aged between 20 to 39 years old (as a result of migration trends exhibited in Scotland over the last 7 years), are evenly split between male and female as has been the recent trend in Scotland (Scottish Government,

2010a) with the children being aged between 0 and 19 years old. These assumptions are then used along with a baseline assumption of zero migration, which is useful but unrealistic. The zero migration highlights what the demographics would be with only natural change. The 2008-based principle assumptions for fertility and mortality are also assumed in this scenario.

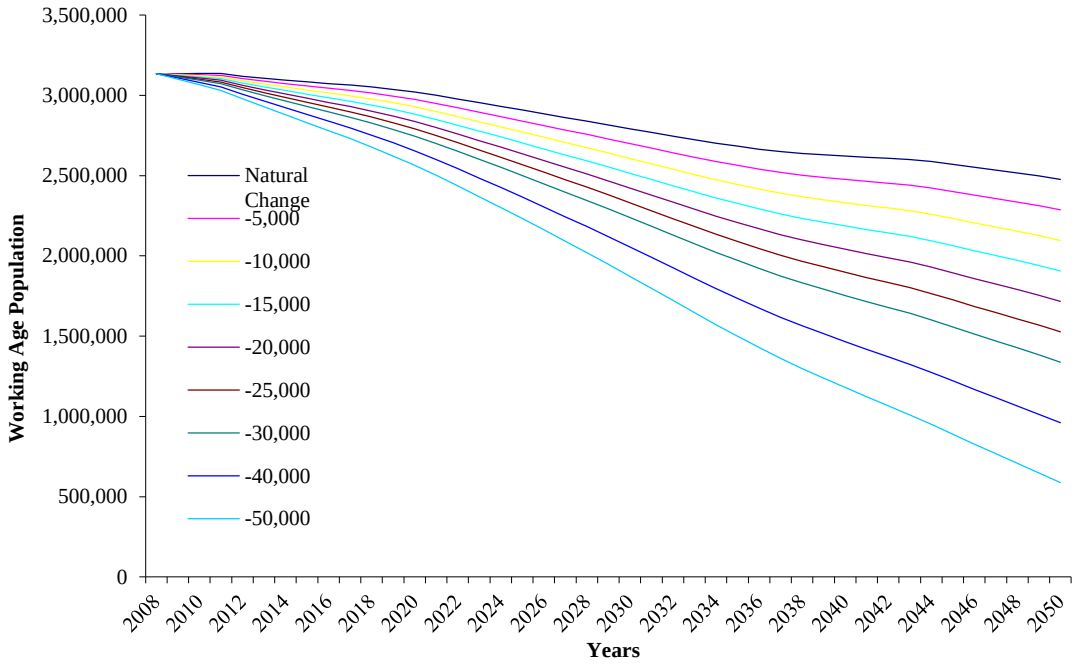
The GROS projects a long-term positive flow of 12,000 migrants to Scotland per year, which is not enough to prevent the population from ageing and declining. As a result, an examination of what the positive net-migration would have to be to maintain the 2008-based level of the working-age population, and how the working-age population changes with varying positive and negative net-migration, needs to be carried out. In Figure 3.63, the number of annual net-migrants per year has been positive: 5,000, 10,000, 15,000, 20,000, 25,000, 30,000, 40,000, and 50,000, with the sex ratio set at 50:50. These positive examples reflect Scotland's recent trends in net-migration. The results show that between 2008 and 2050, the working-age population would drop if Scotland experienced positive net-migration of less than 20,000 per year.

Figure 3.63 Working-Age Population, Varying Positive Migration Assumptions, 2008–2050



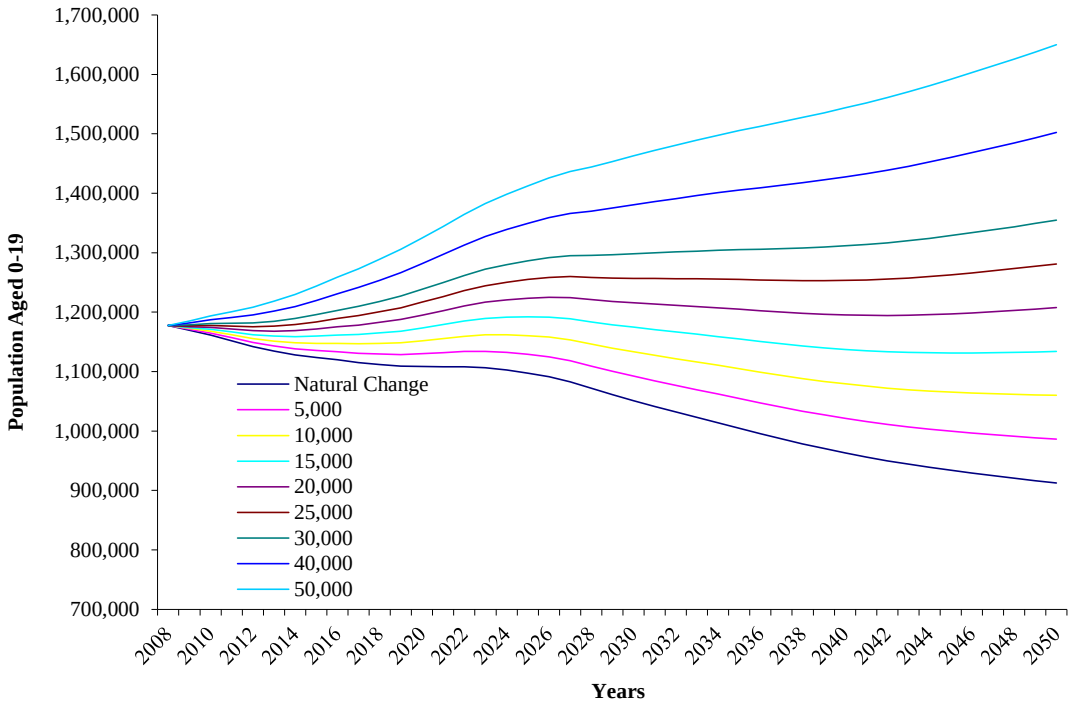
In Figure 3.64, the number of annual net-migrants per year has been set to negative -5,000, -10,000, -15,000, -20,000 -25,000 -30,000, -40,000 and -50,000, with the sex ratio set at 50:50. These negative examples reflect Scotland's historic trends in net-migration. The results show that between 2008 and 2050, the working-age population would drop significantly as expected.

Figure 3.64 Working-Age Population, Varying Negative Migration Assumptions, 2008–2050



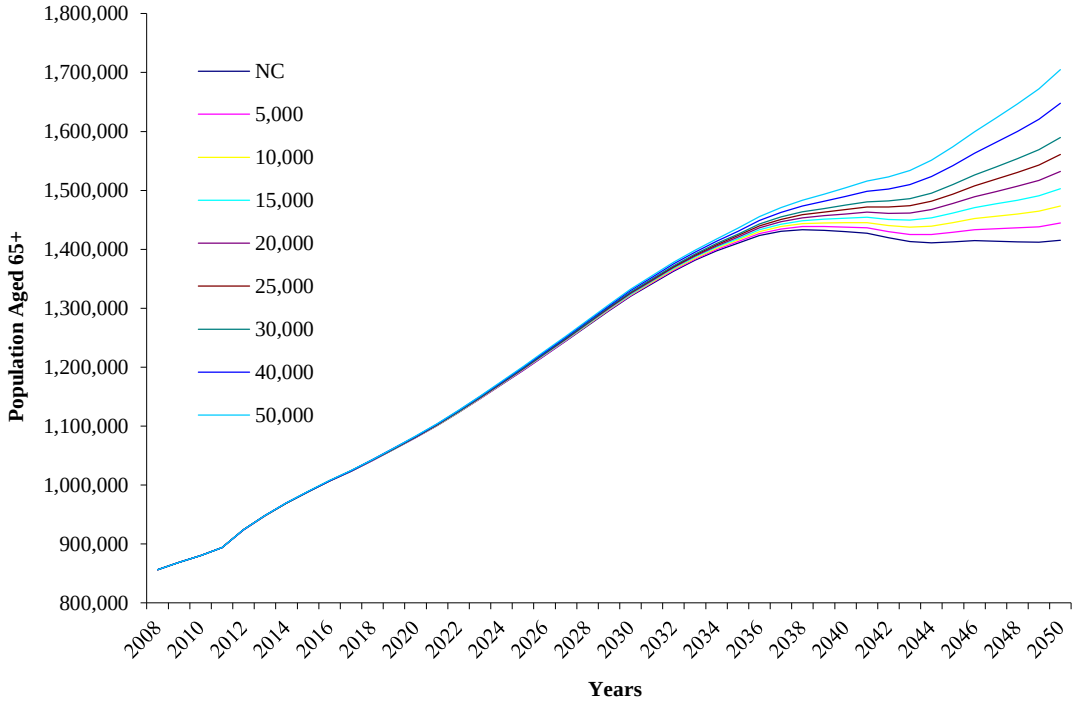
Further investigation of the effects of varying migration flows on the Scottish population shows that, under the assumption of a positive increase in the migration flows of 0–39 year olds, the effect on the 0–19 years old age group is immediate, as shown in Figure 3.65. To retain the level of younger people in the population at its current level by the end of the projection period in 2050, the model forecasts that an inflow of around 17,500 migrants per year will be required. Under the assumption of natural change only, the Scottish population will age substantially as the number of children is reduced. Further, with the assumption of negative net-migration flows, this will only exasperate the ageing population of Scotland by reducing the number of younger people in the population.

Figure 3.65 Projected 0–19 Year Old Population, 2008–2050



At the other end of the dependency spectrum is the retired population. Increasing the number of the working-age population through positive net-migration will help Scotland's population grow in the direction that is economically desirable and sustainable, but what also must be addressed is that eventually, the migrants themselves will age, assuming they remain in Scotland over their lifetime. This is evident in Figure 3.66, where the number of older dependants is not immediately affected because of the assumption that positive net-migrant is from the age groups of 0 to 39 years of age. As a result, the effect on the 65+ population will begin to take effect 26 years later (around 2034), when the oldest migrants begin to retire at the current retirement age. As would be expected, the higher the level of migration currently is, the higher the number of 65+ year olds will be within the Scottish population by 2050. With the natural change assumptions, the number of 65+ year olds is expected to level off and decrease slightly around the mid 2030's. With migration levels at a positive 5,000 per year, the number of 65+ year olds is expected to level off around the mid 2030's by 2050, and anything above this would continue to increase the number of 65+ in the Scottish population.

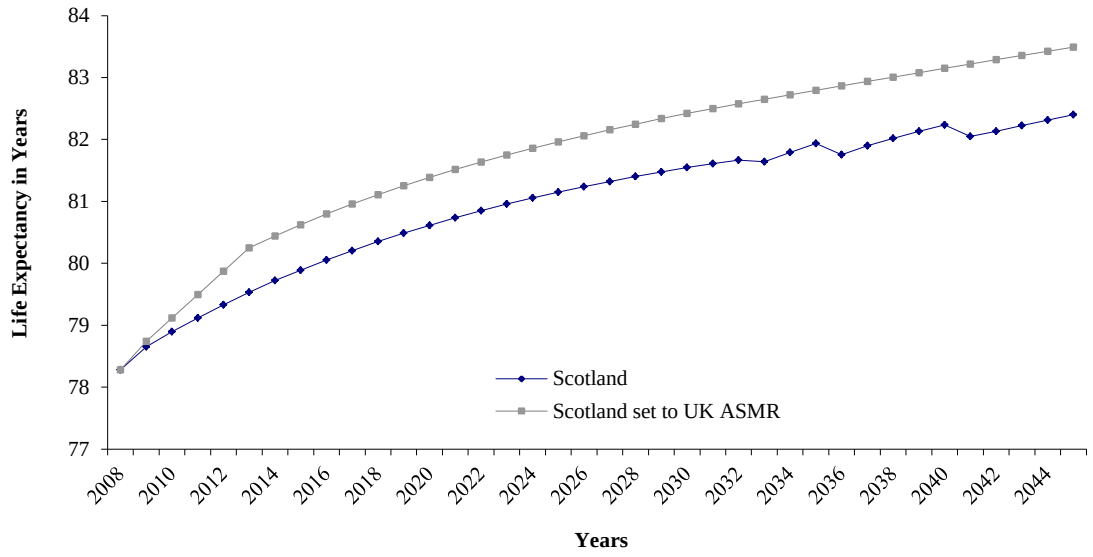
Figure 3.66 Projected 65+ Population with Various Positive Migration Levels, 2008–2050



3.5.3 Improvements in Mortality

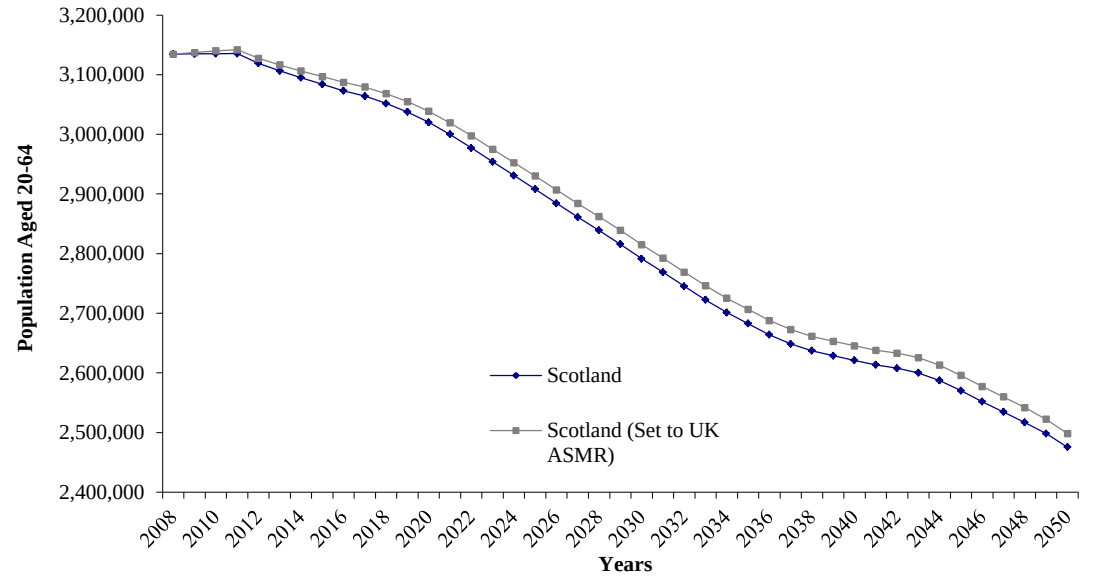
When examining the ASMR for all the countries that constitute the UK, it was found that Scotland has the worst ASMR and lowest life expectancy of the UK by a considerable margin. In Scenario 3, the assumption is the 2008-base principle rate for fertility and zero net-migration. A further assumption is that the Scottish ASMR will evolve to match that of the UK ASMR over a five-year interval (assuming that Scotland could make reductions in both male and female mortality rates to equal the UK average). Substituting the Scottish ASMR with that of the UK levels, the results show the overall life expectancy significantly increases for the Scottish population as expected, as shown in Figure 3.67.

Figure 3.67 Life Expectancy, Scotland and Scotland set to UK ASMR, 2008–2050



In examining the effect that improvements in the mortality rate has on the working-age population, the results show the projection initially exhibits a very slight increase in the working-age population, and then quickly begins to decrease again in the long run. This shows that higher levels of life expectancy still result in a reduction in the size of the population aged 20–64; therefore, mortality does not appear to be a critical parameter in dealing with the problem of an ageing and declining working population, as Figure 3.68 shows.

Figure 3.68 Scotland's ASMR and Scotland set to UK ASMR affect on the Working-Age Population, 2008–2050



3.6 Conclusion

The GROS 2008-based population projections were examined. According to the principle projections, the number of deaths is expected to stay fairly steady at around 52,000 from 2011 until 2021–2022, when the number is expected to increase reaching 59,617 in 2033. The number of female deaths is expected to be initially higher than males, then converging in 2023–2024, from which the trend changes and male deaths would then become higher. Life expectancy at birth is expected to increase for both males and females in Scotland, from 75.5 years in 2008 to 80.7 years in 2033 for males and 80.2 years in 2008 increasing to 85.3 years in 2033 for females. This shows a significant improvement. In addition, life expectancy at the higher age group, the 65+, is set to increase for both genders, from 16.6 years in 2008 to 20.8 years in 2033 for males and from 19.2 years in 2008 increasing to 23.3 years by 2033 for females.

Fertility is expected to decrease with an assumption that TFR will be fairly stationary over the projected period (shifting from 1.73 in 2010 to 1.70 from 2013 onwards to 2050), with all years projected to be under the 2.1 replacement level. Net-migration is expected to maintain a positive net-gain, levelling off to 12,000 from 2014 to 2050. This is expected to be made up from 5,500 international net-migrates and 6,500 UK cross-border net-migrates. The expected population is set to increase over the projected period. Scotland is expected to grow slower than the rest of the UK but higher than the EU-27 average growth over the same period (Scotland at 7% and the EU-27 average of 5.5%). If these assumptions prove to be accurate, then Scotland's population will age significantly, with higher concentrations in the older age group (33% increase in the 60–74 years age group and a massive 84% in the 75+ age group), while the population of working age is expected to decline. It is reasonable to assume the dynamics of the future demography of Scotland will have adverse consequences on the economy such as in intergenerational transfers and public welfare.

Popgroup software was shown to be sufficiently adequate in replicating the GROS 2008-based projections; therefore, it was used in examining the sensitivity around the three components of population change. The three scenarios examining the working-

age population and (1) fertility, (2) Migration and (3) mortality were produced. When fertility rates were examined, the results were that, from the current principle projection in 2008 up to and beyond the replace level of a high of +30 per cent, there would still be a significant decline in the size of the working-age population by 2050. When the mortality rates were examined, the results showed that a decrease in the Scottish mortality at the level chosen, which was the same level as the UK mortality, had little impact on the working-age population of Scotland in the future. The results of the migration scenario showed that Scotland would need to experience a positive net-migration of around 20,000 (young migrants) in order to maintain the current working-age population by the end of the projection period in 2050.

The migration component appears to be critical. In examining the migration results, it has become apparent that it is the key in counteracting the ageing and declining working population of Scotland (at least in the shorter to medium-term). As Champion (1994, p.672) points out "...with successive waves of immigrants settling permanently and with strong natural increase occurring after arrival because of the relatively high fertility and young age, the immigrant presence has already become a very significant force in demographic terms". Although, Wilson and Rees (2003, p.191) conclude "...small inward migration can slow population decline but makes little difference to population ageing. Without a higher fertility rate Scotland's population will become demographically unsustainable". These three scenarios do of course contain uncertainty, which is inherent in any forecasting.

Chapter 4 The Rational of Volunteering

4.1 Introduction

This chapter will investigate the economic theory of volunteering by first examining the reasons suggested for its evolution at both an institutional and individual level. Second, an examination of the main theories on volunteer motivation will be carried out. It has not been possible so far to have one volunteer motivational model that will 'fit all' because human beings are not a homogenous group. For this reason, the economic theory will include some psychological elements to it in order to aid the understanding of volunteer motivation (Findlay and Findlay, 2005). Finally, the standard labour supply model will be extended to include volunteer labour. This will be done using the model framework from the moonlighting theory. Examining these areas facilitates a greater understanding of the voluntary sector prior to turning attention to the Scottish voluntary sector itself, which is the subject of Chapter 6.

The discussion of volunteering in this research is within the context of formal volunteering, since formal volunteering allows the measure of a 'market value' to be placed on the voluntary activity and aids the development of an economic discussion of the voluntary sector in Scotland. In this dissertation, volunteering is defined as "Unpaid non-compulsory work; that is, time individuals give without pay to activities performed either through an organization or directly for others outside their own household" International Labour Office (2011b, p.13). The basic economic organisation forms are profit organisations, non-profit organisations, government, and individual households. All of these forms have their own comparative advantage and work in economic gaps left by the others.

The voluntary sector is an economic organisation and the activity of volunteering can be described as an economic activity, "Voluntary labour uses limited resources to produce goods and services to satisfy human needs, thereby having the characteristics of an economic activity" Roy and Ziemek (2001, p.9). This economic activity is "...seeking to alleviate want, deliver heath care and education, provide social services and give a voice to a multitude of cultural, artistic, religious, ethical, social and environmental concerns" Salamon et al, (2004, p.xxi); moreover, Hardill

and Baines (2009) explain volunteering as an activity where people contribute to society through developing social capital. This social capital, created by the voluntary sector, makes social contributions to ease social problems. Further, Stukas et al (2009) state that volunteering helps fill the gaps communities have not filled or have overlooked. They suggest volunteers have the ability to act as a form of social glue, linking disparate members of a multicultural society and help contribute to the greater public good through their creation of social capital. For these reasons, the voluntary sector is important.

The voluntary sector comes under several headings including civic groups, friendly societies, non-governmental organisations, community groups, registered charities, voluntary groups, social enterprises, non-profit organisations, trusts, social economy organisations, and associations. The voluntary sector has numerous positive attributes, it has the ability to connect with the public and service users in a positive way because of the very nature of their activity. This is on a level that can be described as informal, flexible and usually on a smaller scale than most governments, individuals and for profit organisations could manage. This enables the sector to provide a unique public service. Although the voluntary service is not a public good, it can be explained as quasi-public good (near public good) because of character of the voluntary service, meaning that it is public in nature, however not completely non-rival and non-excludable. This public service provides a social output that would otherwise need to be provided by paid labour.

Salamon (2010) identified commonalities in defining the voluntary sector and allows the sector to be treated as a distanced economic unit. The commonalities include: different production function, as the sector does not exist to make and distribute profit, unlike the for-profit sector; public-goods production, as the sector produces goods and services that provide benefit to the wider public, not for private consumption, which is often the case with other sectors; different governance structures, as they are not governed by public elections or governmental structures (the voluntary sector is usually controlled by their members or citizen boards); distinctive revenue structure, by securing revenue from a number of sources such as private contributions; distinctive staffing structure, as the voluntary organisations

usually are informal and can have organisation ran by solely volunteer labour; different tax treatment, as the voluntary sector often has different tax treatment from other economic sectors, e.g., they can receive tax deductible gifts; distinctive legal treatment, typically the voluntary sector has separate legal forms set aside including, associations, foundations, companies limited by guarantee, public benefit organisations, public utility corporations, and trusts. Salamon (2010) states, that taken together, these distinctive features establish a credible case for treating the voluntary sector as a distinct sector or class of entity.

4.2 Institutional Theory of Volunteering

When examining the theory of the evolution of the voluntary sector, a number of popular theories have been found. Salamon and Anheier (1997) examined the demand-side theory that associates the sector's existence evolving with the demand for public services to be provided privately. The demand for provisions, e.g., elderly care and childcare, has not been completely met by the public or private organisations. The role for voluntary sector can be explained by apparent market failures of the public and private sectors. Demand for volunteer organisations and services are derived by the wants of government as well as individual and groups. The market failure could be, for example, because of the lack of competition in state provision leading to inefficient production or service, meaning the service user needs would not be satisfied. The private sector market failure could be derived from the inability to pay for the provision. There could be a location issue with users living in an area where the cost of provision is too high for private sectors to provide, e.g., in geographically isolated areas. The voluntary sector would provide service to the niche market. The demand-side theory involves a communal problem-solving.

Salamon and Anheier (1997, p.1) also highlight the social origins approach as the reason for the voluntary sector's existence, where the sector is "Deeply embedded in the social, economic, and political dynamics of different societies". This approach suggests the voluntary sector evolves through experiencing critical moments in the country's history. This then sets a course in which society as a whole will follow for a given period. Salamon (2010) gives an example of the era of rapid industrialisation

as a critical historical moment. The social origins approach also involves a communal problem solving.

The partnership theory consists of both the public and private organisations working with the voluntary sector in areas of production and service, as opposed to being a substitute for a failure to provide. Investigating government and voluntary partnerships, Salamon (1995) has suggested the voluntary sector should provide collective goods and the government's role is only to be there to fix any failures of the voluntary sector. These failures include particularism in choosing services, insufficient resources available to them, 'paternalism tendencies', and dealing with human problems in a less than professional way.

Salamon (1995, p.1) suggests these failures or weaknesses are compensated by government's strengths, "These two massive sets of institutions share many of the same basic objectives and have the strengths and weaknesses that are the mirror image of each other". Further, Salamon and Anheier (1997), conclude that both institutions are responding to the same social pressures, they complement each other and could provide what they describe as 'unique attributes' the other lacks. With the government's resources and the voluntary sectors local knowledge, this makes a mutually beneficial partnership (Roy and Ziemek, 2001).

The idea of the supply-side theory is that the voluntary sector evolved because of opportunities of providing unsatisfied demands from public products or services (Bacchiega and Borzaga, 2003). Salamon and Anheier (1997) found the supply of entrepreneurs' commitment to establish voluntary organisations to these unsatisfied demand is one of the reasons why the voluntary sector is in existence, that competition has driven this evolution. They suggest that religious institutions are an example of such organisations, where they supply people with their 'human needs' in order to gain support for the religious institution. As a result, the sector in this case is not in existence because of altruistic reasons.

Transaction cost theory has also been suggested as a reason for the voluntary sector's existence. Ben-Ner (2002) states the voluntary sector is in existence because it can solve better the problems associated with the provision of products and services with

non-rivalry or non-excludability attributes, or what he refers to as publicness attributes, than for-profit firms. Those for-profit firms are affected by asymmetric information between the suppliers and clients. Valentinov (2007) found two types of transaction costs that can be minimised by the voluntary sector, which are opportunism-induced and bounded rationality-induced. The minimising of these costs increases the resources available to them, further Valentinov points out that bounded rationality-induced transaction costs are seen to be economised by the non-profits sector more efficiently than the opportunism-induced transaction costs.

Valentinov (2008) list two dimensions to the transaction cost economising role of the voluntary organisation. First, the reduction of the cost of searching for information, processing, and communicating information. Second, the minimisation of opportunistic behaviour by what he refers to by means of aligning incentives of concerned stakeholders. Further, he points out the stakeholders, who receive a measure of utility from their contribution to the voluntary organisation's mission, would therefore not be interested in behaving opportunistically. Although, Valentinov rightly states that not all voluntary organisations manage to restrain opportunism sufficiently, this still exists even though there is little need for volunteers to act opportunistically. Asymmetric information is found in the relationship between customers and the public and private organisations, which is not found to the same extent in the voluntary sector. The voluntary sector reduces the 'lemons' problem as it usually does not suffer from retaining and paying rent to poor performers, unlike private and public organisations. The voluntary sector reduces the free riding problem and monitoring costs.

Socially inefficient outcomes can arise in public and private organisations because of the consumers' willingness to pay can contain distortions, resulting in inefficient levels of production or service provisions which do not arise in the same way in the voluntary sector as there is no direct cost to the customer. Further, costs of contracting are limited in the voluntary sector. Since the voluntary organisation and volunteers derive no profit from their activities, property rights can often be inefficient. When the organisation is not in a position to distribute the profits, it means the owners will have no advantage by 'exploiting' any superior information

they could have in an attempt to increase profits. For these reasons, Bacchiega and Borzaga (2003) find the service users are, in some manner, protected against contractual failure.

4.3 Individual Theory of Volunteering

Models to help explain the determinates of the supply of volunteer labour will be examined.

4.3.1 Volunteering as a Functional Approach

One of the leading theories on volunteer motivation is the functional approach. It leads on from work carried out by functional theorists, for example Smith et al (1956) and Katz (1960). According to Katz (1960, p.170), functional approach attempts to understand the reasons people hold the attitudes they do, "The reasons, however, are at the level of psychological motivations and not of the accidents of external events and circumstances…While many attitudes are predominantly in the service of a single type of motivational process, as described above, other attitudes may serve more than one purpose for the individual".

The functional approach examines volunteers' motives, whereby if volunteers see a particular motive to be important to them, they would then actively pursue a voluntary task for that purpose allowing them to use this motive. The functional approach finds that people get involved in volunteering in order to satisfy their social and psychological goals. It also finds that people may be involved in the same or similar volunteer activities. Although, in doing so, they are actually trying to achieve different goals. Clary et al (1998) examined the functional approach to volunteering motivation and developed a 'Voluntary Functions Inventory' (VFI) scale. They identified six primary motives for volunteers, as shown in Table 4.1. Their research shows that volunteering serves many different functions for a diverse population, even when the same task is being carried out.

Table 4.1 Primary Motives for Volunteering

Function	***Description***
Values	To express values related to altruistic and humanitarian concerns for others
Understanding	To permit new learning experiences. A chance to exercise knowledge, skills and abilities that might otherwise go unpractised
Social	To be with one's friends or to engage in an activity viewed favourably by important others
Career	Concerned with career-related benefits that may be obtained from participation in voluntary work
Protective	Centre on protecting the ego from negative features of the self, in the case of volunteerism, may serve to reduce guilt over being more fortunate than others. Also to address own personal problems
Enhancement	Involves a motivational process that centres on the ego's growth and development and involves positive strivings

Source: Clary et al (1998)

The functional approach suggests that if a volunteer viewed a particular motive as an important one, they would be more inclined to actively volunteer with that purpose in mind. If the voluntary activity fails to satisfy the function, this will cause the volunteer to give up eventually; therefore, the personal and social function is being served by that person's thoughts and feelings and ultimately actions. In general, if the organisation is to retain the volunteers, then the volunteering expectation the volunteer holds needs to be fulfilled. In this approach, volunteers appear to take pride in the imagery that volunteering brings, e.g., personal sacrifice and serving. Lewin (1951) found a similar outcome when he produced his 'Field Theory' showing that behaviour (B) is determined by the total of an individual's perception (P) of himself and the environment (E) he is faced with (giving Lewin's equation, $B = f(P,E)$).

There is an important link between the volunteer's own personal motivations and the voluntary organisational environment. This 'matching principle' is where the motivations of the person are fulfilled by the voluntary activity or voluntary organisation. "Matching, then, requires that our understanding of the volunteer environment be as rich and detailed as our understanding of the motivations of individual volunteers" Olson et al (2006, p.1).

To understand further what motivates volunteers to give their time, with respect to the opportunity cost, some of the main models will be discussed.

4.3.2 Volunteering as Consumption / Time Allocation

In the consumption model, volunteering is a utility yielding ordinary good. The persons maximise their utility depending on their time and budget constraints. They receive some form of satisfaction from the action of volunteering that equals to the margin, the satisfaction from other uses of their time (paid work, leisure). The model assumes that volunteer participation does not vary with age. Prouteau and Wolff (2006), with reference to the consumption model, state the supply of volunteer labour is a utility-bearing good and that voluntary work is related negatively to its price. The consumption model can be split into different motives: public goods, private goods, impure altruist model and relational goods.

In the public goods model (or pure altruism model), the volunteer is willing to give his time to increase the amount of public goods and to satisfy someone else's desires, even if the time and effort contribute to the risks of a possible sacrifice to the beneficiary. In this model, an individual can also receive benefits through financial donations. A volunteer would not be allowed to supply their time if it is less than their opportunity cost of time. An example of such volunteers who are professionals and received a high income may not be truly altruistic if they give their time and effort instead of money. There may be inefficiencies because of labour specialisation, for example a doctor who volunteers as a cook in a homeless shelter on the weekend, devoting eight hours of his time. In his job as a doctor, the market premium may be for example £100 per hour. As such, he should not spend his time cooking food that is valued on the market at for example £25 per hour for a trained cook. In this case, the doctor should perform eight extra hours in his job and give his earnings to pay for thirty-two hours of expert cook to help with feeding the homeless. The doctor deciding to donate his time and effort instead of the money would therefore be considered inefficient and not pure altruistic in nature.

The model will only hold if the value that people put on their own efforts is the same as the value they put on to the efforts that others put in (government or other volunteers). As a result, it makes no difference as to whether the effort comes from them personally or from someone else, as long as the public good is increased by the amount that is required. This brings in the problem of potential free riding, noted in

the rational choice theory, and also a possible crowding out effect. There are concerns that increasing government spending on public goods or a large rise in the participation of volunteers will 'crowd out' the pure altruist voluntary actions. If the volunteer sees the increase in spending by the government and the increase in the number of volunteers as a form of substitution of his own efforts, this would cause a reduction in his contributions (if motive were for the public good).

Monroe (1996) found strong evidence of the existence of pure altruism and argues that not all human behaviour is based on self-interest and that man has an interest in his fellow human beings. The IVR (2007a) found the reasons people gave the most when asked why they volunteer was that they wanted to improve things, help people or saw a need in the community. Cappellari and Turati (2004) found if people are motivated intrinsically, they will supply more voluntary labour. Unger's (1991) empirical study found support for the existence of altruism as a motive to volunteer and describes volunteering as a self-sacrifice with no obvious benefit other than fulfilling the needs of others. Research carried out by Volunteer Development Scotland (2004) found that 75 per cent of Scottish volunteers did so because they saw a need to help. Research has shown support for the public goods model by examining employees of voluntary organisations. It has been found that workers in the voluntary sector supply their labour at lower than market wages, in order to bring about positive social externalities (Goddeeris, 1988 and Roy and Ziemek, 2001).

In the public goods model, people are implied to have a strong concern for the public good, yet this does not always transform into the actual act of volunteering, as Weemaes and Schokkaert (2009, p.4) research shows: "When people hold a public good motivation, the strength of this motivation will have only a limited effect on actual volunteering". Smith (1981) states that altruism motivations exist in all volunteers but it is not sufficient to be an inducement to supply voluntary labour. In real life, it has been suggested by Roy and Ziemek (2001) that individuals are not indifferent to whether they volunteer their time to the public good or if the government or other volunteers provide it. The public goods model implies the volunteer is only interested in the total provision of the public goods, which may not be the case in reality (Knox, 1999).

In a private goods model, the volunteer is willing to provide his effort if the action of the giving is itself the motivator and is a utility-maximising model. “It is one of the most beautiful compensations of life that no man can sincerely try to help another without helping himself” Emerson (1803–1882, p.1). Andreoni (1990) calls this the ‘warm glow’ feeling where the volunteer is motivated by warm glow and is not concerned with the total amount of provision of the public good. Even though other people benefit from it because of the non-rivalry properties of the public goods, the volunteer is only interested in the private benefit that comes from their own giving of time. If the individual sees his effort as a private benefit, they would volunteer their time even if their efforts were valued at a lower rate than what it would be if they were in a job that paid for the labour.

Knox (1999) refers to the private goods model as ‘economic altruist’ and explains this as a volunteer who only wants to satisfy his or her own desire that someone else is being aided. Adam Smith said “How selfish so ever man may be supposed, there are evidently some principles in his nature that interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it” (1759, p.29). He describes this as the force of our ‘fellow feeling’ for the misery of others, which allows us to feel compassion for other people’s misfortune. Under this private goods theory, an increase in government expenditure or an increase in voluntary participation by others can encourage the individual to increase his efforts in volunteering, this is called the ‘crowding in’ effect. If the person sees the intervention as supportive, there will be an increase in the voluntary effort. As a result, it is important to assess the motivation of the volunteers.

Brown and Zahrly (1989) find that volunteers are particularly motivated by the private goods model because of the ability to influence and search in order to gain personal satisfaction (where the influence and search model expects the hours that are contributed to be partly dependant on the ability to influence the output or to gather information that would be of value). Schram and Dunsing (1981), using OLS estimators to investigate married women, found that volunteers are motivated by the private goods model and that participation in volunteering is influenced by those

socio-economic and social-psychological variables they describe as indicative of the human capital return. Further, volunteers are also motivated by the ability to influence and search to gain personal satisfaction.

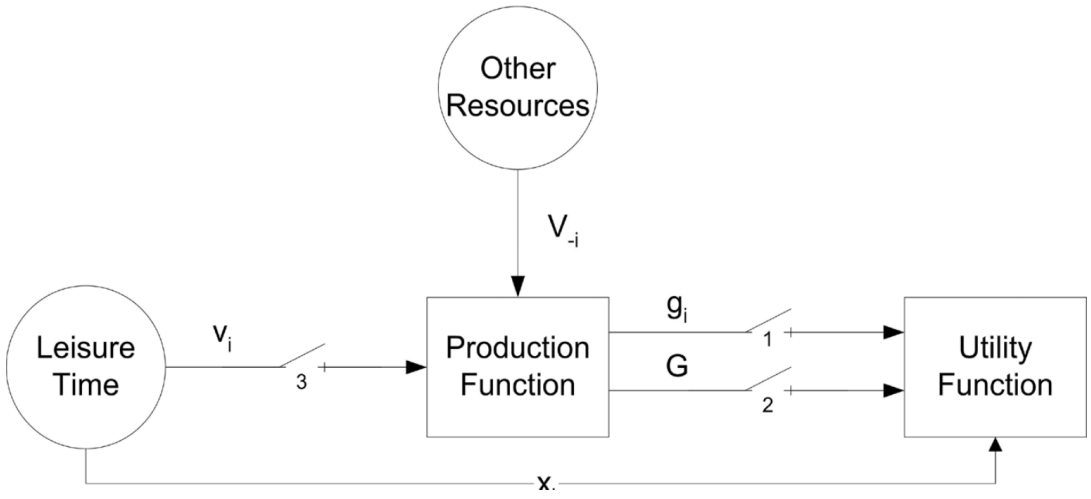
The impure altruist model developed by Andreoni (1990) suggests in reality that volunteers experience a combination of the different motivates, which is what causes them to give their time. They receive utility from both increasing its total supply and the act of giving. Nagel (1970) and Daly and Cobb (1994) also found evidence of a mixture of public and private altruistic motivations. In addition, Weemaes and Schokkaert (2009, p.15) conclude that it is a mixture of altruism motivations that people exhibit in the real world "Mixed altruism is a feature of the real world, in which individuals are driven by different motivations". Findlay and Findlay (2005, p279) find the motives to volunteer to be a mixture of both, "Individuals engage in voluntary activities for a mixture of altruistic and self-interested reasons". Fitch (1987), Cnaan & Goldberg-Glen (1991), and Winniford et al (1997) found that it was a combination of 'altruistic' and 'egoistic' motives that was causing people to volunteer.

Bowman (2004) also found that volunteers are a mixture of altruists and egoists and refer to them as 'enlightened egoists'. He produced a model of impure altruism for an individual volunteer, shown in Figure 4.1, which he sets out as follows: Resources and produced goods flow along the lines as directed by the arrows. The circles show fixed amounts of exogenously determined resources. The centre square shows a production function chosen by the organisation, for putting together resources to produce a public good jointly, G, and a private good, g_i, where the subscript represents an individual volunteer. Bowman assumes $G = v_i + V_{-i}$ and $v_i + x_i = t_i$, where v_i shows the quantity of time volunteers give to the voluntary organisation, V_{-i} shows the quantity of time other volunteers give to the voluntary organisation and t_i shows the *i*th volunteer's total amount of available leisure time. The square on the right side shows the utility function of the *i*th person that puts together these goods and other uses of leisure time, x_i, in a total consumption package.

Bowman also enters logical switches, shown as breaks in the arrows, which can be either on or off, allowing the flow of resources and goods or stopping them (they are

represented in the figure in the off position). The switches on or off position depends on the person, their choices and their characteristics. If the person is an impure altruist, then switches 1 and 2 will be on, and G and g_i will show in their utility function. If they are a pure egoist, then switch 1 is on but switch 2 is off, resulting in G not appearing in their utility function. If they are a pure altruist, then switch 2 will be on, switch 1 will be off and g_i will not show in their utility function. Bowman states there is a logical connection between these switches and the input side of the production process. Switch 3 will stay on as long as switch 1 or switch 2 is on, as there would be no reason to volunteer if it gives no utility to the volunteer. Switch 3 will be off if both switch 1 and switch 2 are off, leaving just x_i in the individual's utility function.

Figure 4.1 Impure Altruism Model for an Individual Volunteer



Source: Bowman (2004)

Prouteau and Wolff (2007) carried out some research on the relational motive for volunteer work. This is where volunteering can be viewed as a way to develop 'friendly relationships', which is the motivation for the volunteers. Prouteau and Wolff (2007) use cross-sectional data from France, collected by the INSEE in 2002 through the Vie Associate, which provides national patterns of volunteer work in France. The sample size was 2,631 participants who are members of an association (1,578 of which are volunteers). They regressed the probability of volunteering with the variable 'having friends in the association', allowing for demographic and economic characteristics of the volunteers including age, sex, and income. Their

research showed that people wanting to make friends in the association increases their likelihood to volunteer. Although, having friends in the association does not significantly increase the likelihood of that person volunteering. This research shows the existence of an inherent benefit in terms of a relational good. Examining the relational motive as a reason why people supply labour on a voluntary basis, Ben-Ner (2002, p.7) suggested that voluntary organisations have a distinct advantage in providing relational goods and that relational goods can only be provided by "Those who participate in the social or emotional production process itself". The IVR (2007a) examined why people volunteer and found that one of the top reasons was meeting people and making friends.

Hackl et al's (2005) research concluded there was no clear statistical evidence for the validity of the consumption model except when examining income and age. With income, they found a highly significant influence on the participation in volunteering. With the age variable, they found that, instead of reducing, volunteering participation actually increases with age. They attribute this to older people changing their motives from the investment model to the consumption model, where older people are now investing in their mental and physical health by volunteering. They suggest this supports the consumption model. Day and Devlin (1996) and Menchik and Weisbrod (1987) found evidence to support the consumption model when they examined income. The results showed a positive income effect, the hours of volunteer participation increased with full income but at a decreasing rate.

4.3.3 Volunteering as Investment

The investment model is taken from the human capital theory, where Becker (1964, p.9) describes the human capital investment as the activities that will have an influence on future monetary and psychic income by increasing resources in people. Further, he suggests there are a number of forms these investments take, "Schooling, on-the-job training, medical care, migration, and searching for information about prices and incomes…But all these investments improve skills, knowledge, or health, and thereby raise money or psychic incomes". In the investment model, the person volunteers subject to their leisure hours in order to improve their future

employability status, future income prospects, build potentially valuable contacts and networks. The person will also volunteer if he or his household can use the output from that task. In the investment model, the assumption is that volunteer participation varies with age. The expectation is that over time, the investment in human capital will decrease, leading to an inverse U-shaped human capital curve, and assumes negative intrinsic value for carrying out the voluntary task (Menchik and Weisbrod, 1987).

In the investment model, an individual cannot receive benefits simply by financial donations. People are motivated by extrinsic rewards, e.g., the investment in their own human capital, in order to receive training from the voluntary organisation or to gain some experience, which may be lacking in their paid job. With the extrinsic motive, including the desire to build up a social network of contacts of which could become potentially valuable, the act of volunteering that helps others is a by-product of the supply of voluntary hours. Andreoni (1990) found that people volunteer as a way to develop their skills. Findlay and Findlay (2005, p.278) also found that voluntary organisations facilitate skill development, "...it has become increasingly recognised that volunteering and organisational membership may have direct learning and economic benefit for the individual involved"

Menchik and Weisbrod (1987) point out the investment model is not a utility-bearing good in itself, it is more like an activity that increases the person's future earning power by giving work experience and perhaps valuable contacts. Smith and Macaulay (1980) and Vaillancourt and Payette (1986) found volunteers are motivated by self-interest only. Vaillancourt (1994) found that people were more likely to participate in volunteering if their career or family were likely to benefit from the activity. There has been much interest surrounding volunteer work and the benefits it could bring in the labour market. Mesch et al (1998) found that retaining volunteers in the organisation was more dependent on the factors relating to future career benefits.

Schram and Dunsing (1981) also found in their research that people were motivated to participate in volunteering in order to gain access to information, e.g., hearing of possibly other job opportunities, although Hackl et al (2005) found no evidence of

the networking motive for volunteering linked with the investment. They found statistical evidence in support of the investment model and positive wage rate premiums. They further found that volunteers earned a significantly higher wage rate than non-volunteers, showing in their data a wage rate that was on average 18.7 per cent greater between people who volunteered and people who did not. They also found the number of hours volunteered impacts this wage premium, showing support for what they call the significance of skill acquisition to accumulate human capital and the importance of deepening of social contacts and the signalling of willingness to perform.

Day and Devlin (1997) carried out research to find out if volunteer work improves individual earnings. They found a significant positive wage rate for men who participate in volunteering, but not for women. They conclude this is because of the difference in volunteering organisations that women and men tend to participate in. Day and Devlin (1998) found the volunteer workers had around 7 per cent higher pay than workers that did not volunteer. Further, Devlin (2001) found this figure to be more around 4 per cent. Govekar and Govekar (2002) found the influence and search model is important in volunteer motivation. They predict the hours that will be contributed can be dependent on the volunteer's ability to influence output or to collect valuable information. According to Weemaes and Schokkaert (2009, p.19), when volunteering brings with it larger private benefits for the volunteer, then this in turn leads to an increase in the amount of times that individual will volunteer "…the more people hold warm glow and investment motivations, the larger the degree of volunteering".

Prouteau and Wolff's (2006) study examined whether or not volunteer work pays off in the labour market. Their results show that volunteers in the public sector are not motivated by higher wages; therefore, this did not influence volunteer involvement, although the people that volunteered did receive a higher pay. In the private sector, they found the wage premium to be negative. The study also revealed that people who had a wish to change jobs were not enticed to volunteer in order to achieve the change. Their results do not support the investment model and is more consistent with the consumption model. Bacchiega and Borzaga (2003) found that non-profit

workers are generally more satisfied with their jobs than for-profit and public employees, despite shown through studies to be paid less than private or public employees. This has been suggested as being an evidence of the investment model, as volunteers will accept low or no income as long as the future income will be higher. Cnaan & Goldberg-Glen (1991) found there was very little evidence of the investment model.

In Scotland, the voluntary sector and the Scottish Government have found that volunteering can be used as a vehicle into paid employment. As such, there are numerous initiatives that use the services of the voluntary sector to enhance employment prospects for the individual. Examples of two recent initiatives are the 'Future Jobs Fund' and the 'Third Sector Internship Programme'. The 'Future Jobs Fund' is a programme that is designed to 'help young people help themselves and their community' by creating additional jobs focusing mainly on the unemployed aged eighteen to twenty-four running from 2009 to 2011. The framework for the program is that an individual must work a minimum of twenty-five hours per week for six months at a minimum wage (not distorting the labour market) to be eligible.

The Scottish Council for Voluntary Organisations (SCVO) (2010a, p.6) points out the activities must be designed so they "…produce demonstrable community benefit above and beyond the benefit generated by an individual being in employment rather than claiming benefits". The SCVO created a consortium whose members range from large national charities to small community based social enterprises, making 214 voluntary sector employers over all the Local Authority areas. This consortium was given government funding to create 2,278 jobs in the Scottish Third Sector over the eighteen months of the programme. Research carried out by SCVO (2010a, p.28) found the programme was having a positive effect on the individuals who were working in the third sector through the Future Jobs Fund. The benefits the individuals felt were "…Increased employability, increased confidence, improved work behaviours, a greater sense of direction". The 'Third Sector Internship Programme' is part of a Scottish Funding Council initiative designed to support students in finding paid work experience in the voluntary sector during their studies. The fund is worth £2 million and is managed by the SCVO, The Open University in

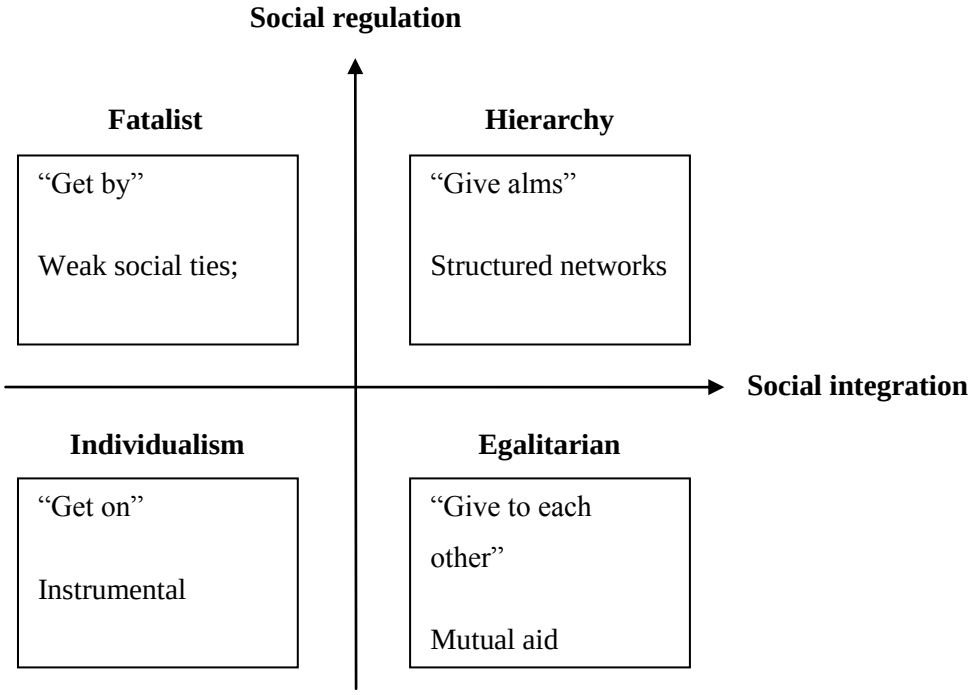
Scotland and Queen Margaret University. This fund is offered to 300 students from any higher education institution in Scotland and will be run over a four-year period from 2011. The SCVO (2010b, p.1) said that this program offers successful students "…outstanding opportunities to develop their skills and experience whilst also having a positive impact on the vital work delivered by Scotland's third sector".

4.3.4 Volunteering as both Consumption / Time allocation and Investment

Bruno and Fiorillo (2009) found that both consumption and investment motives make up the volunteer labour supply and that volunteer participation relies on intrinsic motivation, income, age, family responsibilities, and the specific task carried out. They also found that both motives interact together to shape voluntary participation, although they place a greater impact on consumption motives. Mueller (1975) found that individuals choose to volunteer because of economic and non-economic reasons. This can be if they themselves, or perhaps a relative, will benefit from the activity. This includes building on knowledge and adding to skills by performing the activity, or to even use volunteering as a way to keep the human capital accumulation up if the person is currently unemployed. The volunteers receive satisfaction for their altruistic urge, while receiving a sense of status, bringing in both the consumption model and investment model.

Bénabou and Tirole (2005) identify three reasons why people volunteer. The first is individual conduct, which is intrinsically motivated by a feeling of obligation. The second is extrinsic motivation by some kind of reward. The third is that people are motivated by the need to have a good reputation in other people's eyes, e.g., relaying to people how generous they are. Freeman (1997) suggests that individuals respond to requests to volunteer by taking into account how much they value the specific voluntary organisation's activity. If the request to volunteer comes with some 'social pressure', volunteering is therefore a conscience good or activity. Hardill and Baines (2009) offer a typology model to explain why people volunteer, as shown in Figure 4.2. They suggest four sets of explanations for people to volunteer, broken down into two strong group components and two individualised components. This shows that both consumption and investment are equally important. Hardill and Baines also point out that keeping a balance of both rewards is important in volunteering.

Figure 4.2 Typology of Explanations for Volunteering



Source: Hardill and Baines (2009)

4.3.5 Life Satisfaction Motive

Another motivating factor to participation in volunteering is to increase the feeling of wellbeing and life satisfaction. Davis et al (1998) found volunteers reported improved heath and function because of volunteering. Piliavin and Siegl (2007) found that both the consistency of volunteering and the diversity of the contribution were significantly related to wellbeing and the self-reported health. Lum and Lightfoot (2005, p.31) found that volunteering "Slows the decline in self-reported health and functioning levels, slows the increase in depression levels, and improves mortality rates for those who volunteer". Thoits and Hewitt (2001) found that volunteer work improved the six aspects of wellbeing, which are life satisfaction, happiness, self-esteem, physical health, depression, and a sense of control over life. They also found that individuals who possess greater wellbeing would invest more hours to the voluntary sector. Meier and Stutzer (2004) found evidence that volunteers were more satisfied with their life physically and mentally than people who did not volunteer. Mellor et al (2009) found the relationship between volunteering and wellbeing was a positive one, where the volunteer received greater

personal wellbeing than people that do not volunteer. They also found that volunteering contributed some additional variances in wellbeing even after factors, such as psychosocial and personality, were controlled for. They argue there is a robust relationship between volunteering and wellbeing.

4.3.6 The Theory of Financial Motivation

Von Kotzebue and Wigger (2009) examined the consequences of a redistribution of volunteer funding, by government or general contributors, on an individual's own private consumption motive and the total public good. They noted that, under the neutrality theorem of public goods provision, a redistribution of total income within the contributors to a public good neither has an effect on the supply of that public good nor on the individual consumption of the private good, taking into consideration that no person will lose more income than what has been dedicated to the supply of the good before.

Von Kotzebue and Wigger (2009) find the level of provision of the public good and the person's private consumption are affected by small redistributions within the contributors or by small variations of governmental grants for example. This shows that people will change their contributions in such a way that the total amount of supply has not been altered and the original bundles of the two are still possible. It also shows that all individuals adjust their donation by exactly how much their income has changed, as a consequence of the redistribution. Whereas Kingma's (1989) study found out there was a crowding out of 14 per cent because of increased government spending. Abrams and Schmitz's (1978) study found a crowding out of 28 per cent because of increases in government spending.

In order to examine changes in the supply of volunteer labour, given the presences of a financial reward, it is important to understand the underlying motivation of the volunteer. It is reasonable to assume that a person motivated by the investment in their own future monetary and psychic income would not reduce their volunteer effort when in receipt of a financial reward. Considering the consumption motive, if the volunteers were motivated by a private benefit to themselves, then rewarding the labour supply of hours would also have no negative effects. If the volunteer was

driven by an intrinsic motivation to increase the public good, this would create some controversies over what the outcome could be. The conventional view is that if the volunteer is driven by intrinsic motivation, then offering a reward for volunteering would have a negative result and would reduce the interest and time spent on the task for that intrinsically motivated person. Deci and Ryan (1985) describe intrinsic motivation as being a fundamental 'energy source' to a person. Deci and Ryan (2000) find that if voluntary effort is rewarded in order to complete the task, then this will reduce the volunteer's interest in that task. This lowered interest is due to the fact of receiving a reward, which can be monetary or any contingent tangible reward.

Fischer and Schaffer (1993) and Carpenter and Myers (2008) also found there can be a reduction in the motivation to volunteer if extrinsic (or material) rewards are placed over intrinsic motivations. In a study carried out by Frey and Götte (1999, pp.4–12), the findings were that external rewards can undermine the intrinsic motivation for an activity and have unintended consequences and crowd out intrinsic motivation. Although, they also found that if the financial incentive was big enough, it could motivate volunteers to supply more hours, "There is a statistically significant crowding-out effect on volunteer work, if volunteers receive financial compensation. If the rewards are small enough, they actually reduce hours volunteered…because the potential donors feel their motivation not to be appreciated…An increase in rewards raise volunteer work but in a marginally decreasing manner".

Cameron and Pierce (1994) carried out a meta-analysis review to find out if extrinsic rewards presented a threat to people that are intrinsically motivated. Their results were there was no threat to intrinsic motivation by extrinsic rewards. Eisenberger and Cameron (1996) combine analysis over a twenty-five year period and their research concluded there was not enough evidence to say that financial rewards reduced intrinsic task interest.

The wage rate effect on volunteering needs to be taken into consideration. Brown and Lankford (1992, p.325) found the wage rate is an important variable as to how much a person will volunteer "The wage rate is a theoretically important variable in determining hours of volunteer work because, with a full-information model in which hours of work are fully flexible, the wage measures the worker's opportunity

cost of time". As such, they propose that if there is an increase in the opportunity cost of time for a person, then this will decrease the labour supplied to the voluntary organisation. They also found that lower tax prices result in an increase of the number of hours that are volunteered.

Frey and Götte (1999), Deci and Ryan (1985) suggest non-financial rewards increase intrinsically motivated volunteers. Eisenberger and Cameron (1996, p.1162) found there are two 'reliable positive effects' (as they call it) of the reward on intrinsic motivation,

> With verbal reward, people spend more time on a task following the reward's removal than before its introduction. In addition, people state they like the task better after verbal reward or after tangible reward that depends on performance quality…Reward, when used appropriately, has a much more favourable effect on task interest and creativity than is popularly supposed

Many complex issues and numerous outcomes can arise in using financial rewards. This complicates the issue of encouraging the supply of volunteer labour input. On one side, there are intrinsically motivated volunteers who react negatively when they are offered a reward for work they are doing, which can result in a loss of interest in the task. On the other side, there are extrinsically motivated volunteers who see a financial reward as a form of recognition, resulting in more interested in the task. If the volunteer is driven by a private benefit motivation, the reward would not affect them in any direction.

During a focus group session (2011)[7], one of the topics discussed was financial compensation for volunteering. A number of points were highlighted. First, the general feeling was that it would make the voluntary activity blurry by adding in a financial compensation, confusing the basic concept of volunteering. There is a fear among the existing volunteers that people would join for the wrong reasons, i.e., not to genuinely help others, but to receive a financial reward. The mutual feeling in the group was it would not make them take on any additional activities or commit more

[7] Focus group session with older volunteers from Queens Cross Housing Association, held at Windsor Community Hall, Glasgow on 18th July 2011

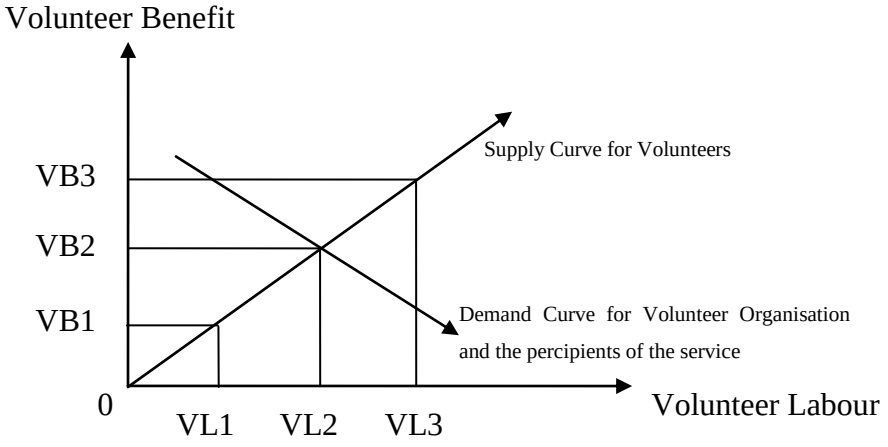
hours. Although, one participant felt that if the financial compensation was given by way of a 'thank you' then she would appreciate the gesture.

4.4 The Cost of the Volunteers to the Organisation

The number of voluntary hours that a voluntary organisation demands is a declining function of voluntary organisations costs. Volunteers have a zero wage and they supply their labour without being paid; however, they are not free to the voluntary organisation as there is a cost involved. Such costs can include, rent for office area, recruitment, training, retaining, and supervising, which often require the labour input of paid staff. It is reasonable to assume the voluntary organisation will not accept everyone who wishes to volunteer. They cannot utilise all available voluntary labour. The limit on the amount of labour demanded by the voluntary sector could have implications for the government wishing to transfer any future provisions to the sector, if the sector cannot afford to take on an appropriate level of volunteers to cope.

Emanuele's (1996) research showed that voluntary organisations make choices about the quantity of volunteers to have. As the cost of volunteer labour increases, they demanded less of that labour, corresponding to a downward sloping demand curve for that voluntary labour. The equilibrium will be determined by the volunteering market. Figure 4.3 shows the market equilibrium is at the volunteer benefit VB2 and volunteer labour supply VL2.

Figure 4.3 Voluntary Market Equilibrium



Emanuele's (1996) empirical study concluded that it makes more sense to take on volunteers for the long-term as opposed to a short-term basis. The reason is the increased value for money in keeping long-term volunteers. Further, Govekar and Govekar (2002) suggested that this demonstrates volunteer organisations are not perfect substitutes for government projects, as it implies that a shift in the supply curve of volunteers will lead to a lesser change in the use of volunteers than would take place if the demand curve were horizontal. However, the demand for volunteer labour is not a horizontal line at price zero. The supply of volunteer labour is a competitive advantage over the public and private sector, but this can be corroded for several reasons, as Steinberg (1997, p.191) pointed out: "The competitive advantage thereby provided is limited by mismatches between volunteer skills and required tasks; the cost of recruiting, training and supervising volunteers; and conflicts between volunteers and paid staff".

Each voluntary organisation chooses a mixture of volunteers and paid staffs depending on its own particular voluntary labour (paid labour substitution) that is the most productive and cost minimising for the organisation, assuming the paid and voluntary labour are interchangeable. This will happen until the marginal product of volunteer employee labour is equal to the marginal product of paid employee labour. This inter-changeability can bring with it issues of conflict between the paid and voluntary workers.

4.5 Separating Volunteer Action from Labour Market Exchange

The decision to volunteer depends on a comparison between the reservation wage and satisfaction gained in the role. Volunteering is mainly carried out by people that have a main paid job. The decision to volunteer in a 'second voluntary job' will usually depend on the number of hours carried out in their first paid job (usually constrained to forty-eight hours per week in Scotland unless opted out); however, individuals face a trade-off taking the shape of an extension to the income / leisure choice model. This trade-off is between allocating time to income generating activities, voluntary activities and leisure activities; moreover, the individual is limited by the waking hours in a day (around sixteen hours in average). As a result, all three activities must be equal to or be less than the waking hours.

An extension to the standard labour supply model is the moonlighting theory, where the primary job generates consumption (e.g., income, satisfaction, and knowledge) and a secondary job generates extra consumption (e.g., more income, satisfaction, and knowledge). People may have extra time after their main job and perhaps decide to take on a second voluntary job as a response to a mixture of the motivations. These motivations include the 1) constraint motive, as the volunteers are limited by what they can do in their first paid job, 2) heterogeneous motive, so they can build up skills, networks, etc., for the future, which are perhaps not found in their first paid job, 3) altruistic motives, as they just want to help, and 4) homogenous motive, where the volunteers are so satisfied with what they do in their paid job that they want to share this experience in a voluntary setting. An examination of the theory and the research that has been done on moonlighting will be carried out and the logic of the theory will be adapted in order to derive a voluntary equation.

The moonlighting theory examines the labour supply's responsiveness to changes in the wage and labour supply constraints. It is based on the idea that workers take on a second job for a number of different reasons. For example, if they are facing some kind of financial pressures from wage constraints, that will give them an incentive to take on a second job in order to earn more money, like a survival strategy, but only if the wage on the second job is sufficiently high enough (of course, the worker may simply decide to leave the constrained job and find a new job with no constraints on it). They could also take on a second job to protect against unemployment in their first job. It may be the nature of the industry or location factors that causes people to have two jobs. If the community is small, a second job may be needed to benefit the community. Employment opportunities within the first job also may be limited.

There has been much research on the demographic characteristics and economic reasons why people moonlight. Hamel (1967) found the multiple job holding was carried out mainly by married men, with low wage earnings and had children. They held two jobs because of financial pressures. Hamel (1967) found that, when the financial pressures decrease, so did the number of multiple job holding. Shishko and Rostker (1976) also found that family size is significant and positively related to

moonlighting hours. They also found the more a person earns in the first job, the less they will supply to a second job.

Renna (2006) carried out a study to find out how contractual hours and overtime premiums affect the decision either to moonlight or to work overtime. He examined the standard working week and noted that, if the government reduces the hours in a working week, this will then cause the individual workers to have a time constraint on their job. This in turn could force a worker to get a second job or work overtime in his first job. Renna (2006) found that by reducing the standard hours of work in a week, it increases the chance of a person to moonlight, but also add a negative effect on the chance of a person to do any overtime. Bell et al (1997) investigated the possibility of workers having second jobs as an attempt to guard against unemployment in their first job. They found there was 'very weak' evidence to support this theory.

People working in certain industries, e.g., agriculture, tend to take on second jobs. Hanf and Muller (1974) investigated small farmers in Germany and found that to improve their income, they took on a second job. This reduced a farmer's leisure time and the leisure time of his wife more. Dickey and Theodossiou (2004) also investigated moonlighting in the fisheries and aquaculture industries in rural Scotland. They found that people who moonlight did so not strictly for financial reasons. They found evidence for the 'portfolio' model of moonlighting. This is where jobs in different occupations can offer some kind of insurance. They found the moonlighters they studied, did so because the second job offered workers training, professional contacts, etc.

Krishnan (1990) found that moonlighting decisions depended on your partner's activities. He investigated a husband's decision to moonlight together with the wife's decision to work. He found that, when the wife increased her participation in work, this decreased the husband's propensity to moonlight. He also found that longer hours and higher income on the first job reduce the propensity to moonlight, implying that if the hours were constrained then this would increase the frequency of moonlighting. Böheim and Taylor (2004) also found the more hours worked in the main job, the less likely people are to take on a second job. On the other hand, if

people were constrained in their main job, they would be more likely to take on a second job. In addition, they found that it is 'negative financial shocks' that incite people to take on a second job, and that over a longer period of time, constrained hours are not an important reason in determining people's decision to keep doing a second job, unlike 'heterogeneous main job characteristics'.

Allen (1998, p.204) examined moonlighting behaviour of adults that are single or married with the presence of and absence of children. He found that having a larger extended family and a higher number of young children in the immediate family cause a lower propensity to moonlight. Allen (1998) stated there was a relationship with labour market constraints and moonlighting and found that women aged 20–49 year old, who are unmarried, appear significantly more likely to engage in moonlighting than women in their 50s. In addition, young men show no significant difference in their moonlighting likelihoods compared to unmarried men in their 50s. Both single men and women take on second jobs as a way to build up their savings. Further, Allen (1998) found that younger single females face a potentially flatter future earnings profile compared to younger single males. He suggests this brings about a greater incentive for younger females to moonlight.

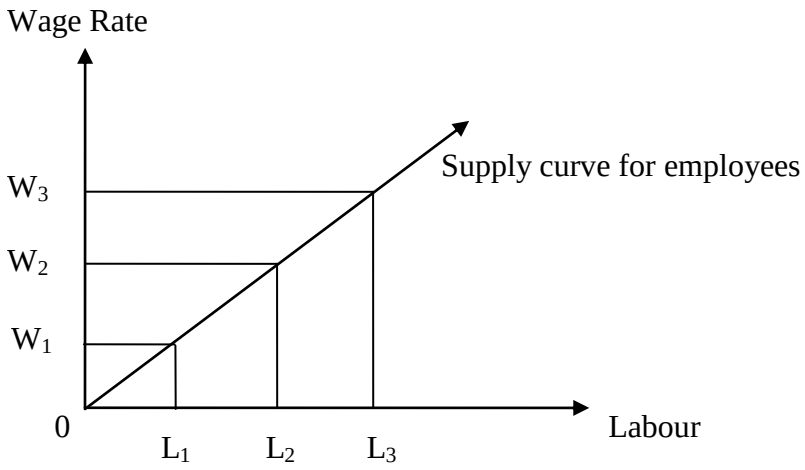
Paxson and Sicherman (1996, p.391) carried out a research into dual job holding with its link to job mobility. They found that people often move in and out of second jobs because of changes in work hours, and that constraints on the first job may induce people to take on second jobs. They also find that multiple job holding is a dynamic process "…dual job holding is a prevalent and dynamic process, that workers move into and out of dual job holding along their working careers, that both dual job holding and job change are used to adjust hours of work, and that a discrepancy between working hours and desired hours of work is a common phenomenon"

The moonlighting theory, set out by Smith Conway and Kimmel (1998), has been used to explain the decision of workers to supply labour to a second job. In their research, Smith Conway and Kimmel (1998) focus on male labour supply when there is a constraint placed on the number of hours they can do in their first job and how this affects the decision to work in a second job. They also examined the decision to take on a second job based on the work being heterogeneous. Their findings suggest

the decision to moonlight is responsive to changes in the wage on both of the jobs and arises from both the constrained and heterogeneous motives, but that workers who have a second job because of the constraint motive usually have shorter multiple job holding episodes than workers with other motives have. They find that non-moonlighters tend to be less wage-responsive and their moonlighting (static) model creates a relatively high primary job labour supply elasticity. Their research shows that moonlighting is mainly caused by the constraint motive.

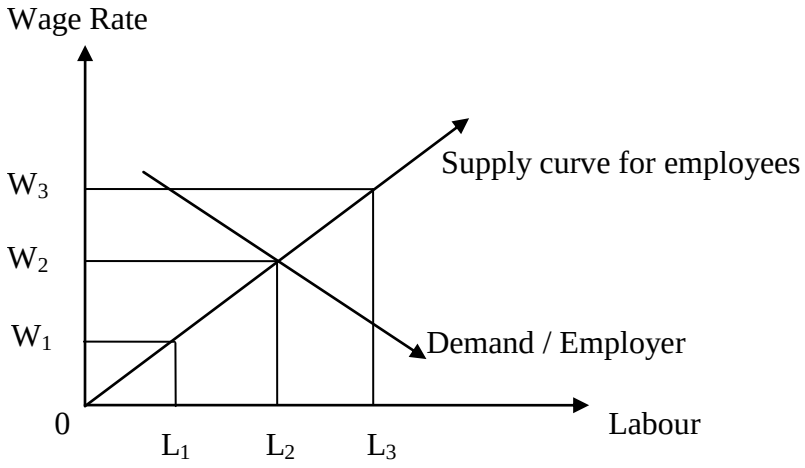
Having discussed the theory, an economic model of moonlighting will be analysed. In investigating the labour market, an extension of the income-leisure model can be used to explain why some people choose to moonlight on a second job, with wage rates usually less than what they receive on the first job. This will begin by setting the income-leisure models, which show individuals income-leisure choices given an income budget constraint for a given week as well as the effects when non-labour income is entered into the model. Then, an extension of the income-leisure model will be examined to see the effects of a forty-hour week constraint on the income budget line and how this can expose under or over employment. Finally, an individual's choice to moonlight given a constrained forty-hour week on their first job will be examined. The standard labour supply model can be seen in Figure 4.4. Workers will supply their labour at the corresponding reservation wage that has been placed on the labour. This will be subject to several conditions, e.g., the current labour market environment with employment opportunities, employer demand, unemployment of an individual over a period of time and the skill set an individual has.

Figure 4.4 Labour Market Supply Model



The person has to choose how many hours he will supply to labour and how many he will have for leisure. These decisions will also depend on the demand-side variables. The equilibrium will be determined by the market, as shown in Figure 4.5 at wage rate W_2 and labour supply L_2.

Figure 4.5 Market Equilibrium



In the labour market, time provides an income and sometimes intrinsic satisfaction. Outside the labour market, time does not provide any income but usually provides satisfaction. Once an individual enters the labour market, there is only a fixed amount of time available in which to spend on a combination of these two activities (the decision of labour-leisure allocation) that can be achieved given the budget constraint. Figure 4.6 shows a typical income budget constraint for a week, with twenty-four hours a day multiplied by seven days. The income budget begins at Z

where there is no income. For every hour spent on working labour (L), it will reduce the Leisure time (or non-working time, M) and will give an income equal to wage rate W. The income budget line PZ, with a slope of W, describes all the levels of possible income by reducing leisure hours and increasing working hours. If the person decides to be at point T on the PZ income budget line, they will have M_T hours of leisure and will work L_T hours (equals to 168 - M_T) and will have an income $Y_T = W * L_T$.

Figure 4.6 Income Budget Line Constraint, Per Week

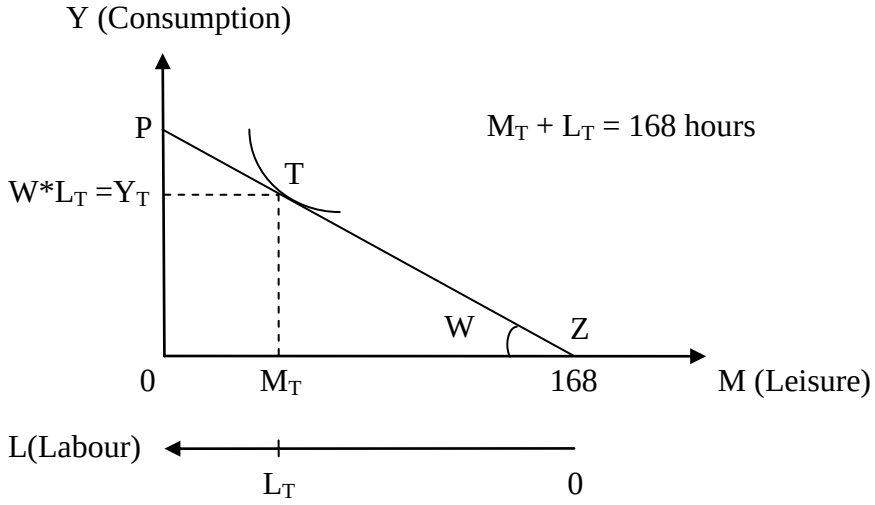


Figure 4.7 shows non-labour income in the income budget constraint. The PXZ budget line has a kinked shape at point X, which is known as a corner solution. The income budget begins at point Z where people who have non-labour income choose not to join the labour market. At zero hours of labour supplied, the person will have an income of X, where point X is directly above Z on the income budget line and is the beginning of the backward running labour axis L. As the person receives labour income, this does not reduce the amount of non-labour income X. Every hour of work will create extra income equals to the wage rate. The income budget line has a slope of W and goes upwards from point X to point P towards the Y-axis.

The total income is equal to the sum of X plus W * L, if the person decides to be at point T on the income budget line, they will supply L_T hours of labour, have M_T hours of leisure and have an income of $Y_T = X + WL_T$. An increase in X would cause the income budget line to shift upward in a parallel way. A decrease in X would

cause the income budget line to shift downward in a parallel way but the slope of the income budget line will remain W.

Figure 4.7 Non-Income in the Income Budget Constraint, Per Week

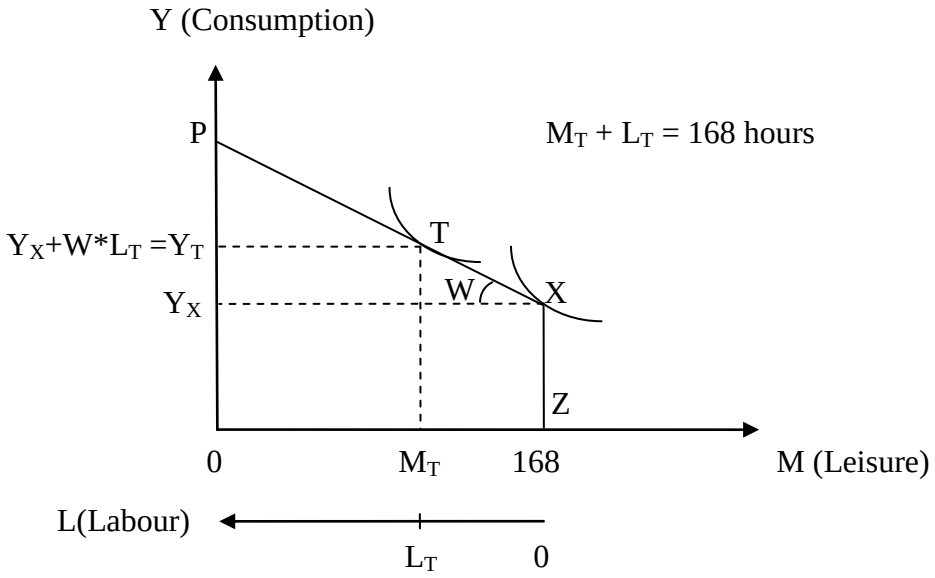


Figure 4.8 shows the effect on the income budget line of a fixed forty-hour week. In the absence of the forty-hour week constraint, a person can decide to be on any point on the income budget line between Z and P. With a forty-hour constraint per week, it limits the person to be at point X only; therefore, the person cannot work less than forty hours and makes part ZX of the income budget line not an option. The person will receive no payment for working more than forty hours, making PX not an option either, unless they wanted to work for no money, but their income would still be on the NX line. The persons Y, M, L combinations are very limited to the area ONXF.

Figure 4.8 Forty-Hour Week Constraint

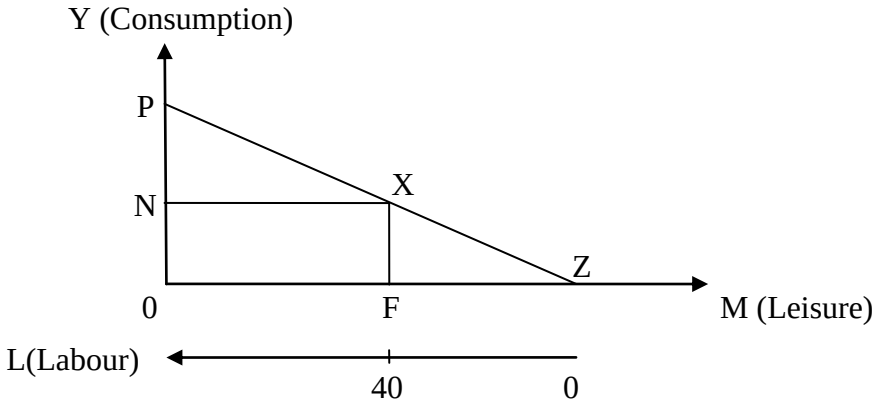


Figure 4.9 shows the person will maximise their utility at point G and would like to work L_G hours, but is constrained to work just forty hours, meaning that at point X the person is underemployed; therefore, this person suffers a loss of utility, as he is on the indifference curve U instead of U_1 and has more leisure time than income, which is not what was wanted.

Figure 4.9 Forty-Hour Week Constraint and Under Employment

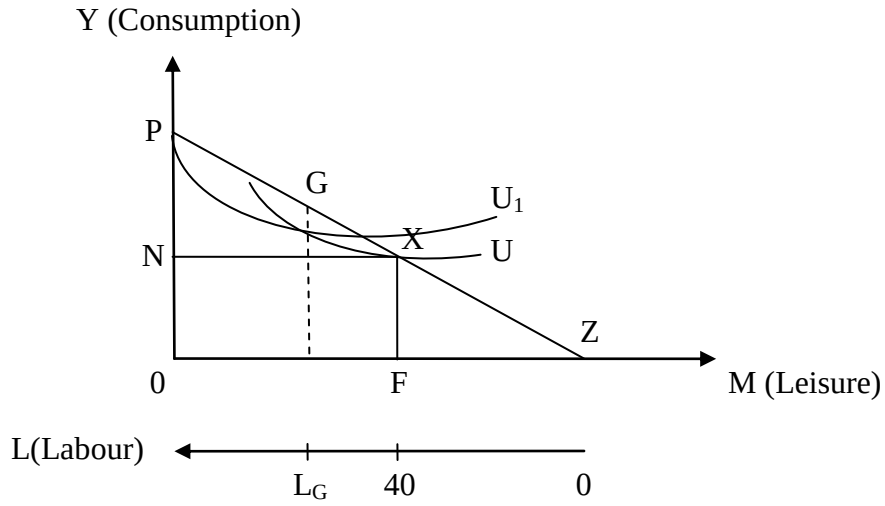


Figure 4.10 shows a person will maximise its utility at point S and would like to work L_S hours but is constrained to work more to meet the forty-hour constraint. This means at point X, the person is over employed; therefore he suffers a loss of utility as he is on the indifference curve U instead of U_1 and has more income than leisure time, which is not what was wanted.

Figure 4.10 Forty-Hour Week Constraint and Over Employment

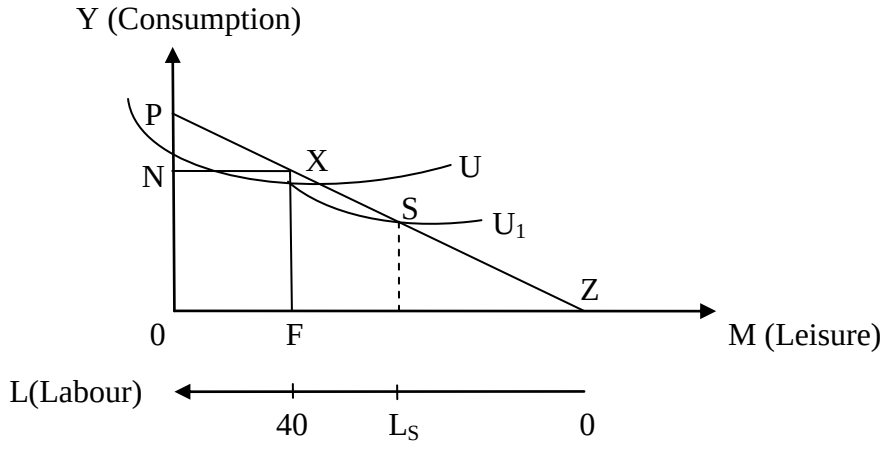
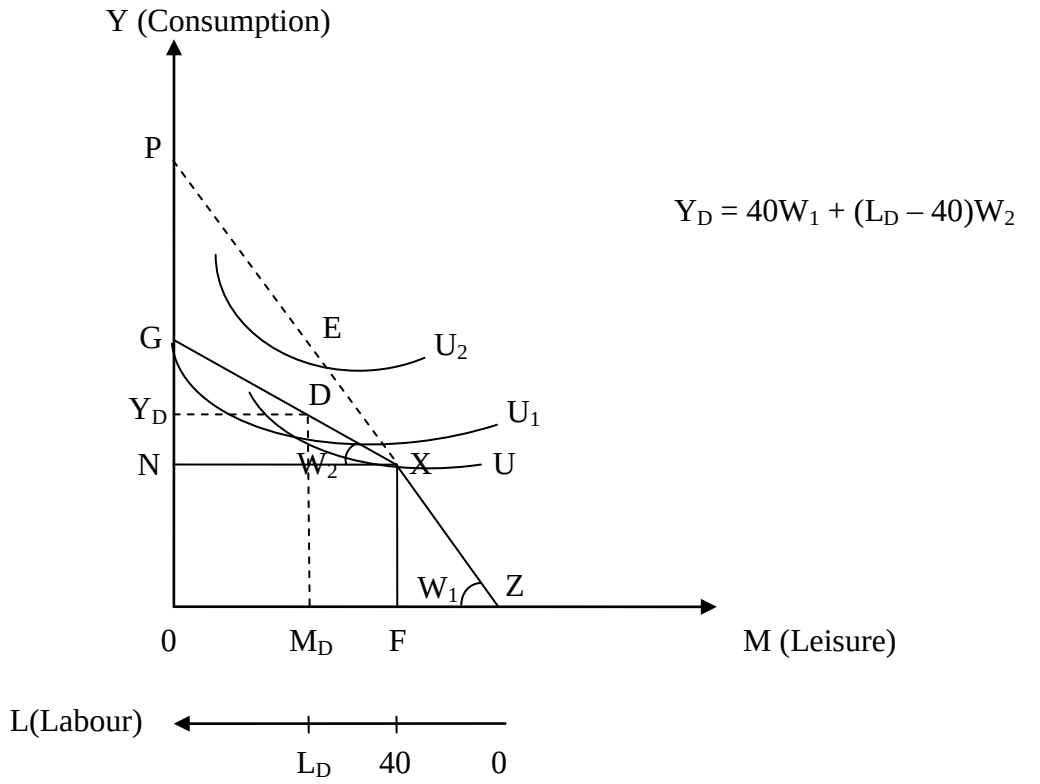


Figure 4.11 shows the effects of a forty-hour week constraint and the effect of moonlighting on a second job. If the employer from the first job were to offer a person more hours than forty at wage W1, then this person would maximise its utility at point E on the indifference curve U_2. However, given the inability to work more than forty hours in their first job, the person can increase their utility from U by moonlighting on a second job, even if the second wage rate W_2 is lower. Given the second job wage rate is almost half of the first jobs wage rate, for example, the possibilities from moonlighting on the second job are shown by line XG. This person maximises utility at point D, works a total of L_D hours per week (40 on the first job and $L_D - 40$ on the second) and receives an income of $Y_D = 40 \times W_1 + (L_D - 40) \times W_2$. This moonlighting increases utility from U to U_1.

Figure 4.11 Forty-Hour Week Constraint and Moonlighting



4.5.1 Fitting Volunteer Labour into Moonlighting Theory

The assumption is that volunteering is a normal good. As research has shown, volunteer participation rises with an increase in income, controlling for other variables (Vaillancourt, 1994; Freeman, 1997; Schady, 2001 and Pho, 2008).

Volunteering labour can be described as a paradox because of its nature of being both work and leisure at the same time. Brown and Lankford's (1992) model suggests that individuals make the decision of how much paid labour they will supply to the market first, before deciding on how much voluntary time they wish to supply. With the demand-side, the assumption is a perfectly elastic relationship for volunteers at point zero wage. The number of hours the individual has available for activities, e.g., volunteering, plays an important role in the supply of volunteer labour. This is time, rather than wage rate, that is significant. Many robust moonlighting models derive sets of testable implications from their comparative statistics. Sets have been produced by Shishko and Rostker (1976) and adapted by Böheim and Taylor (2004) and Smith Conway and Kimmel (1998); therefore, they have not been repeated here. This research has mainly followed the logic set out by Smith Conway and Kimmel (1998) in order to produce a volunteering equation.

C = Consumption, h = Hours worked on paid job, V = Hours supplied to the voluntary service, L = Leisure hours. If working on a paid job and volunteering provide neither utility nor disutility beyond what is caused by forgoing leisure, then the standard leisure / consumption utility function U is:

U (C,h,V,L)

In addition to the usual non-negativity constraints on h, L and C, w = wage received from one hour worked on the paid job, and b = benefits in the model that can be felt straight away as consumption or as a deferred benefit (e.g., in the investment model). The benefits from volunteering in the model can be for an individual or a group, physically tangible or intangible including the 'warm glow' of helping someone, lunch money and travel money. Y = the non-wage income, T = total amount of time available (16 hours). This utility function is maximised subject to both a budget and time constraint:

$C = wh + bV + Y$ and $T = h + V + L$

Substituting these constraints into the utility function for C and L yields the utility maximising problem:

Max U (wh + bV + Y, h, V, T – h – V)

If the individual is constrained on their paid job then h is no longer a choice variable and the individual may choose to supply more labour to the voluntary sector. In Figure 4.12, the individual cannot work any more than H hours on his paid employment and the decision to do voluntary work depends on whether the benefit received on the voluntary work exceeds its marginal disutility or not, given that H hours have been performed in the paid job already. This Figure shows an individual who chose to supply voluntary labour hours:0

Figure 4.12 An Hours-Constrained Worker Choosing to Supply Volunteer Labour

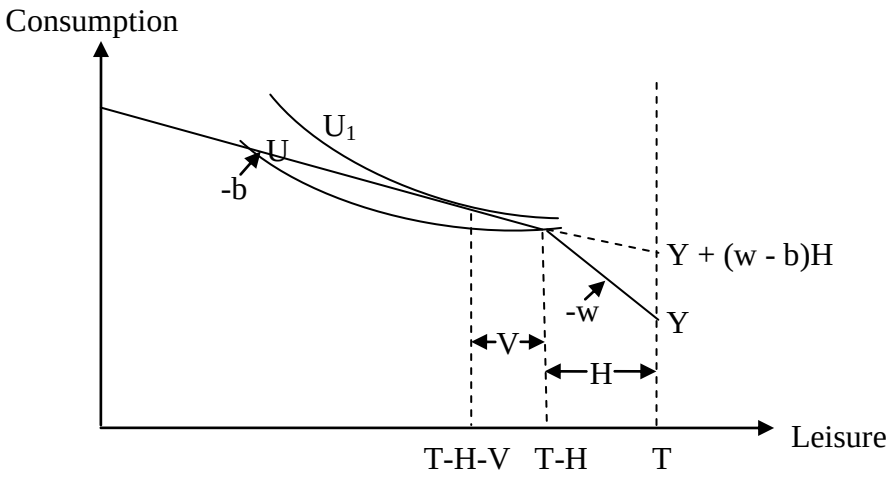


Figure 4.13 shows an individual who chooses not to volunteer his labour even though the hours supplied to the paid employment cannot be increased.

Figure 4.13 Constrained Worker Choosing Not to Supply Volunteer Labour

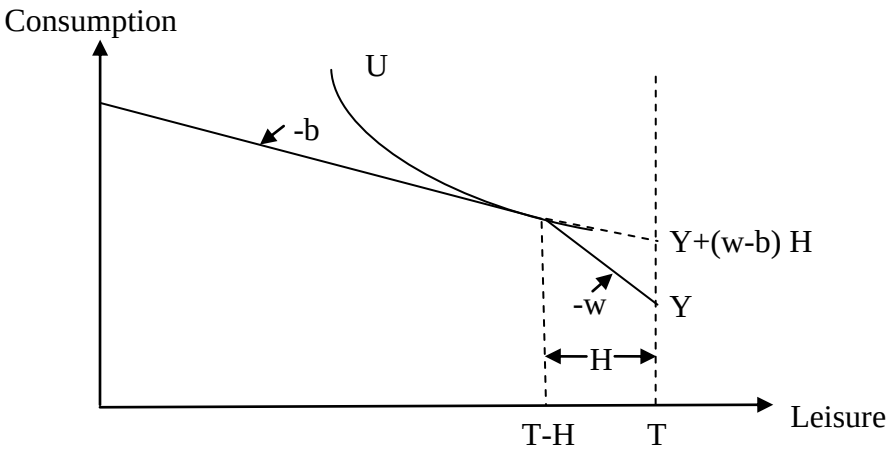
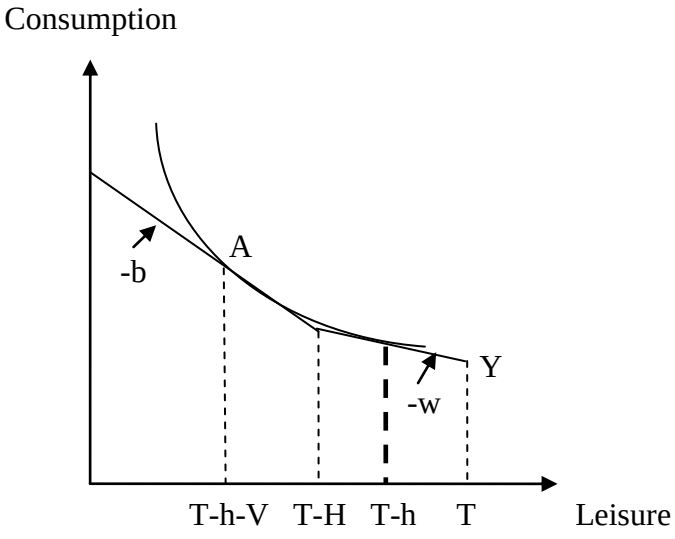


Figure 4.14 shows a person who has chosen to volunteer when they have no restrictions on their working week. He can work any number of hours h between the given standard working time span of T-H, where T is the total time available and H is the hours on paid first job. W_1 is the wage rate per hour on the paid first job, Y is the non-labour income, V is the number of hours on voluntary second job, and b is the benefit gained per hour on the voluntary second job. Voluntary labour may be supplied if enough benefit can be gained. This model shows a higher benefit gained in the voluntary second job than in the first job. By assuming the labour supplied to the voluntary service V is a choice variable, it can be argued the individual facing this situation would aim at supplying more hours in the voluntary sector. The individual will maximise his utility at point A. It could also be the case that the individual receives less benefit in the voluntary job than in the second job, but still does the two regardless.

Figure 4.14 Utility Maximising Non-Hours Constrained Paid Worker and Volunteer Worker



4.6 Conclusion

There is a large amount of literature on the voluntary sector and the volunteer as an individual. Little has been written specifically from a Scottish context. In general, the main theories of why the voluntary sector exists at an institutional level has been said to have originated because of both supply and demand reasons, social reasons that

have been embedded in society, partnership reasons rather than being a substitute for state and private failings, or because of transaction cost considerations. This chapter has examined the main theory of volunteers at an individual's level as well as why people volunteer. Reasons such as the functional approach have been used to explain this activity, whereby people volunteer in order to satisfy their social and psychological goals.

Other motivations popularised, explaining why people volunteer, include the consumption model (public goods model, private goods model, impure altruism model, and relational model). The public goods model (or pure altruism model) is when a volunteer is willing to give his time if it increases the amount of public good and/or to satisfy someone else's desires. The private goods model is when the volunteer is willing to give up his time if the action of the giving in itself is the motivator (receives a warm glow) and is not concerned with the total amount of provision of the public good. The model of impure altruism is where volunteers experience a combination of the different motivates both public and private, causing them to volunteer. The relational motive suggests that people volunteer as a way to develop 'friendly relationships'.

The investment model has its origins in the human capital theory. This suggests a person will volunteer, subject to their leisure hours, in order to improve their future employability status, future income prospects and/or build potentially valuable contacts and networks. A person will also volunteer if he or his household can use the output from that task. The life satisfaction model found that volunteers are motivated as a way to increase the feeling of wellbeing. All of these main theories lay out their justifications and it is reasonable to assume the motivation to volunteer will fall within these main models. The theory of the financial rewards motive to volunteer contains many complexities as the outcome depends on the individual's own motivations. When considering the consumption motive, at the extremes, intrinsically motivated people will not be encouraged to volunteer by receiving financial incentives. At the other end, it assumes that extrinsically motivated people will be encouraged to volunteer by receiving a financial incentive.

In this chapter, the decision to volunteer has been analysed using the moonlighting theory. This theory is based on the idea that workers take on a second job for a number of different motives. These motives include constraint motive, heterogeneous motive, altruistic motives, and homogenous motive. This research focused on individuals facing some form of constraint in their working week. Using the moonlighting theory allowed an insight into how a volunteer decides on how much volunteering activity to participate in, both with and without constraints. The results for the constrained worker found the decision to volunteer depended on whether the benefit received on the voluntary work exceeds its marginal disutility, given the hours already committed to the main job. An unconstrained worker was found to supply voluntary labour if enough benefit could be gained. If the benefit from volunteering exceeded the benefit in that person's main job, then that person would aim to supply more hours in the voluntary sector.

Chapter 5 Older Volunteers

5.1 Introduction

In Chapter 2, it was found the most significant change currently in the Scottish age structure is the pensionable age group, more specifically the very old age group (75+ year olds). Further, in Chapter 3, both the GROS and Popgroup forecasts found that, of all age groups, the number of people in the 60+ will increase the greatest in the future (with concentration again in the 75+ year olds); therefore, the older population is one of the main drivers of the demographic change Scotland faces presently, and in the near future. This will cause an increase in the demand for labour (from public, private and the voluntary sectors) to cope with providing services to the very olds.

The increase in older people contains a large pool of potential supply of volunteer labour. Rational choice theory suggests that, as the older people retire, they will have a greater amount of leisure time. In addition, exchange theory suggests these retired people will be looking to replace the social benefit gained while in the labour market with a role that will allow them to continue to derive this benefit, e.g., volunteering. As a result, the voluntary sector can draw upon this labour supply in the future. Further, of all the age groups, the 60+ had the largest percentage increase (although, not in absolute numbers) in their participation in the voluntary sector over the last decade.

For these reasons, understanding the older person in terms of volunteering is important to the future potential supply of volunteer labour. There have been a number of studies carried out on volunteering in terms of older adults. These studies will be used to aid this understanding. It is important to identify the underlying motivations of older people who volunteer, as a way of projecting future trends. The voluntary sector, along with public and private sectors, has to compete for limited resources, both financial and human. This is at a time where the country's population is both ageing and declining in the longer term. This makes the recruitment and retention paramount for the voluntary organisations. According to the Scottish Council for Voluntary Organisations (SCVO) (2010c), one of the top challenges for

Scottish voluntary organisations was finding people; therefore, recruitment of older volunteers will be examined.

SCVO (2010c) also lists retention as another top challenge facing Scottish voluntary organisations. There appears to be some disillusionment with the Scottish voluntary sector, according to the SCVO (2010c), where 41 per cent of former volunteers said they would never volunteer again. When the less well off former volunteers were asked, the percentage rose to over 50 per cent; therefore, how older volunteers are managed will be examined. Finally, barriers erected preventing older people from volunteering will be discussed. This chapter will begin with an overview of the ageing population in the world and in Scotland specifically, as a way of understanding the landscape that older people are set in.

5.2 An Ageing World

"Population ageing is unprecedented, without parallel in the history of humanity. Increases in the proportions of older persons (60 years or older) are being accompanied by declines in the proportions of the young (under age 15)" UN (2002, p. xxviii.) In 2008, the ONS (2009a) found the world's older population, made up of the 65+ age group, was around 506 million people or 7 per cent of the world's total population. This is expected to increase to 1.3bn by 2040 or 14 per cent of the world's total population. In less than a decade, the number of people in the older population is expected to be greater than the number of children, for the first time in known history.

The ONS (2009a) found the largest number of older people live in developing countries (62 per cent of all people aged 65+), even though the industrialised countries have higher percentages of older people. The UN (2002) found that the global population of older people is expanding at a rate of 2 per cent each year, faster than the population as a whole. In addition, the older population is itself ageing, with the fastest growing age group in the world being the oldest-old, i.e., those aged 80+ (increasing at 3.8 per cent per year). Currently, this group makes up 1 per cent of the total population, and by 2050, this will increase to 4.1 per cent (or 379 million), which will account for 20 per cent of the older persons. A large part of the expected

increase in the 80+ year olds is driven by China with 12 million in 2002 to 99 million by 2050. Other large increases are expected to be seen in the USA with 9 million in 2002 to 30 million by 2050, in India with 6 million in 2002 to 48 million by 2050, and Japan with 5 million in 2002 to 17 million by 2050.

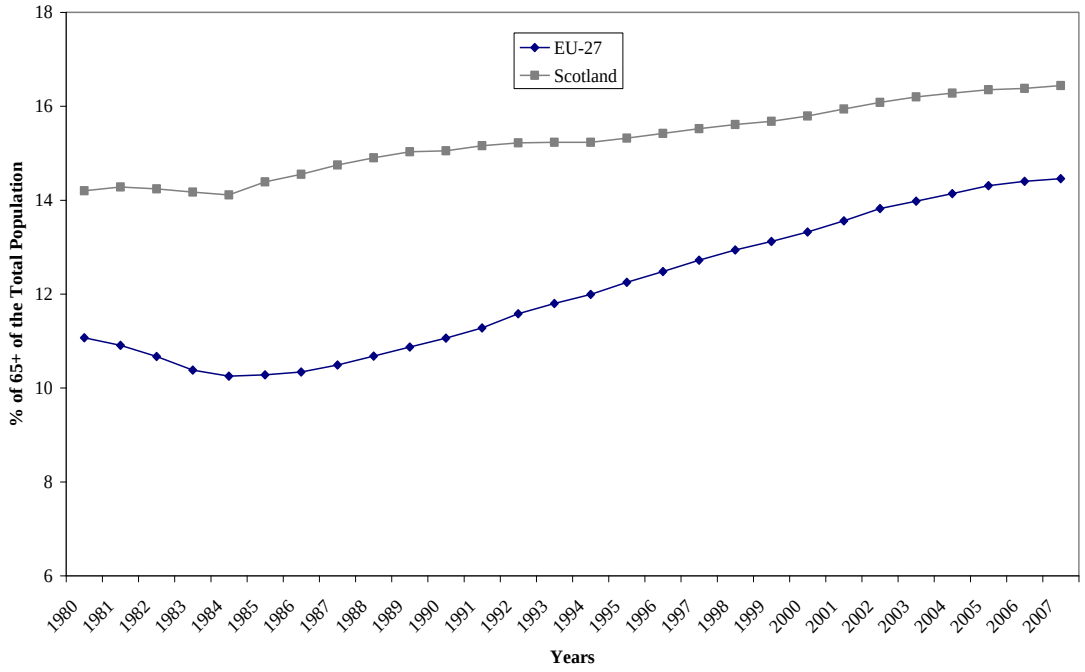
Generally, by 2050, the numbers of older people of 65+ years old will more than triple. The UN also found that Europe currently has the world's highest proportions of older persons and it is projected to remain so for at least the next 50 years. They found that around 37 per cent of the European population projected to be 60+ years old in 2050, with a projected median age of 49 years. This contrasts with Africa where only 10 per cent of the population is projected to be over 60 in 2050, with a projected median age of 27 years. The 'young-old' balance is moving all over the world and the proportion of children is forecasted to decrease by almost one third by 2050.

The UN (2002) also forecast the working-age people (between fifteen and fifty-nine) would change only little from 60 per cent in 2000 to 58 per cent by the year 2050. By 2045–2050, the UN projected that global life expectancy at birth would be 76 years. There is an expectancy of 82 years in the more developed regions and of 75 years in the less developed regions. They also predict that over the next fifty years, the global life expectancy for people aged 60 is to increase from 18.8 years in 2000–2005 to 22.2 years in 2045–2050. Further, from 15.3 to 18.2 years at age 65 and from 7.2 to 8.8 years at age 80.

According to the UN forecasts, by 2050, the old-age dependency ratio is expected to nearly double in Northern America, Africa, and Oceania. This is set to more than double in Europe and more than triple in Asia, Latin America, and the Caribbean. In addition, they predict the working-age population per older population is projected to decline globally by more than a half by 2050. Presently, there are fewer than five persons in the working ages for every person 65 or older in Europe, but by 2050, they say there will be less than two. Within the countries of the EU-27, there has been almost a continual increase in the number of 65+ year old population since the middle of the 1980's. Figure 5.1 shows the ageing profile of the EU-27 average compared to the Scottish profile. This illustrates that Scotland has a higher

percentage of 65+ within its population, although the gap has slightly reduced in recent years.

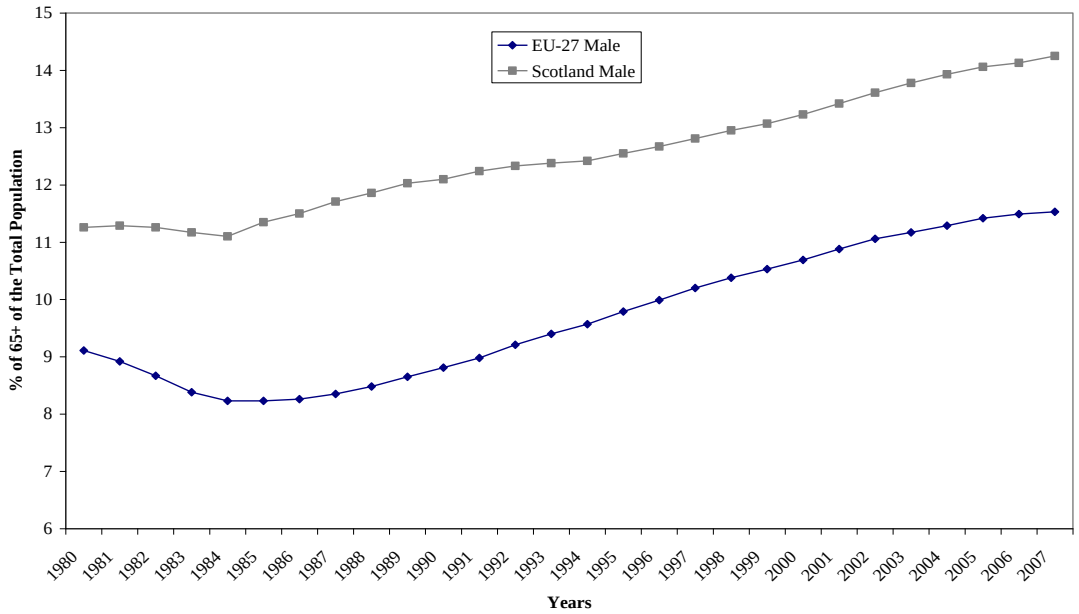
Figure 5.1 65+ Population as a Percentage of Total Population, Scotland and EU-27 Average and, 1980–2007



Source: Scotpho (2011)

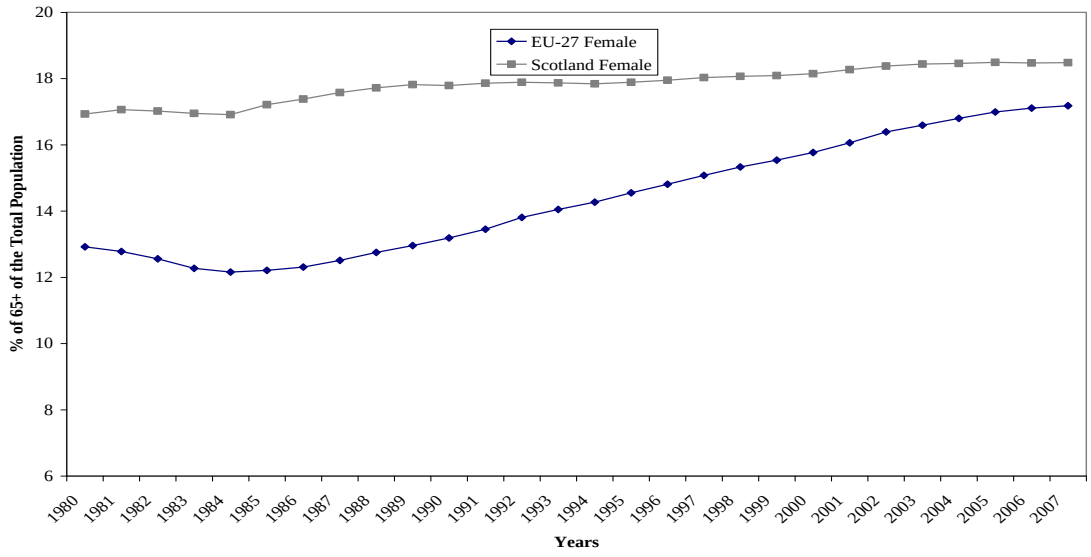
Figures 5.2 and 5.3 show the gap closing in recent years is because of the higher rates of females in the 65+ year old population of the EU-27. Scotland still has the higher rate of female 65+ year old population.

Figure 5.2 65+ Population as a percentage of Total Population, Male, Scotland and EU-27 Average, 1980–2007



Source: Scotpho (2011)

Figure 5.3 65+ Population as a percentage of Total Population, Female, Scotland and EU-27 Average, 1980–2007



Source: Scotpho (2011)

5.2.1 An Ageing UK

The ONS (2009b) states the UK as a whole is ageing, which they suggest is an inevitable consequence of the age structure of the population who are currently

living. The ONS points to the number of individuals born post Second World War, along with the larger number of babies born in the 1960s (known as the 'baby boom') as the main drivers of the UK ageing. The population of the UK has been ageing over a long period. In 1984, the median age of the population was 35 years, this was pushed up to 39 years in 2009 (38 years for men and 40 years for women). Life expectancy has been increasing for both males and females for the 65+ age group. This is projected to continue, as Table 5.1 shows, although there are differences within the countries that make up the UK. Currently, England has the highest life expectancy for both males and females at age 65+ and Scotland has the lowest life expectancy for the 65+ age group for both sexes, compared to the rest of the UK. This is expected to continue over the entire projected period to 2033.

Table 5.1 Life Expectancy at Age 65+, 2008-based, UK, 2008–2033

	2008–2009		***2012–2013***		***2022–2023***		***2032–2033***	
	M	***F***	***M***	***F***	***M***	***F***	***M***	***F***
UK	17.7	20.3	19	21.3	21	23.2	22.1	24.5
Scotland	16.6	19.2	17.7	20.1	19.7	22	20.8	23.3
England	17.9	20.5	19.2	21.4	21.2	23.3	22.3	24.7
Wales	17.4	20	18.8	21	20.8	23	21.9	24.3
N. Ireland	17.3	19.9	18.6	21.1	20.6	23	21.7	24.3

Source: ONS (2009b

Table 5.2 shows there are significant shifts in the economic groups to be expected because of the UK ageing, especially in the pensionable group.

Table 5.2 UK Population by Economic Groups, 2008-based, 2008–2033

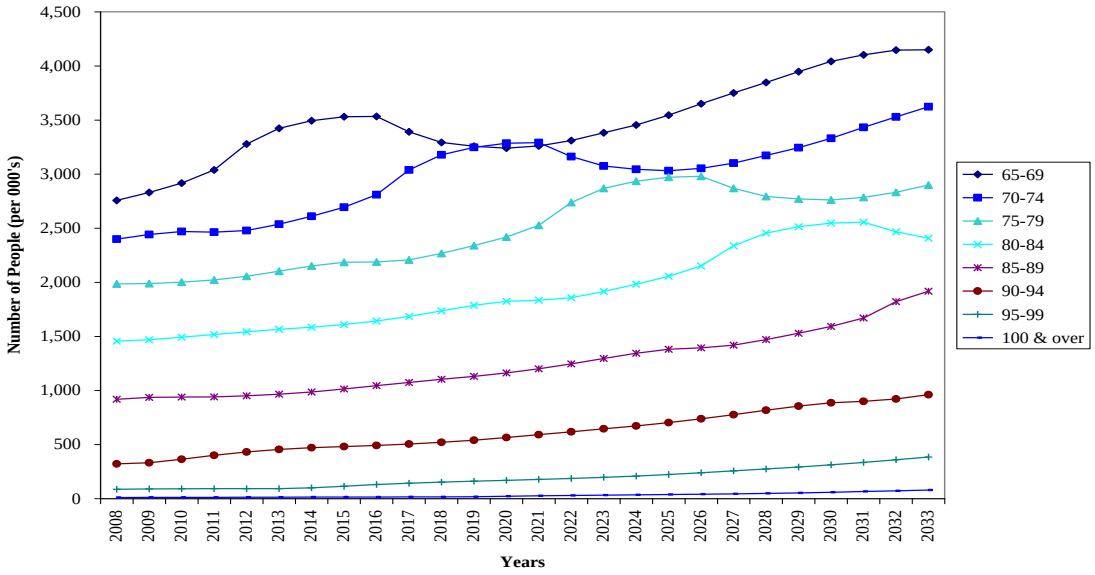
	Scotland		***England***		***Wales***		***N. Ireland***	
	2008	***2033***	***2008***	***2033***	***2008***	***2033***	***2008***	***2033***
Children	19.7	24.1	18.8	18	18.5	17.2	21.5	18.5
Working Age	62.6	59.7	62.1	60.6	60.1	58.2	61.9	60.2
Pensionable	17.7	16.2	19.1	21.4	21.4	24.6	16.7	21.2

Source: ONS (2009b)

According to the ONS' (2009b) national projections, the 65+ population is expected to increase by 65 per cent in the UK between 2008 and 2033 (or in terms of the total population, an increase from 16% in 2008 to 23% by 2033). Within this group, the

fastest increase has been the number of people aged 85+ years, with around 1.4 million of them, which is expected to more than double by 2033, reaching 3.2 million (or 5% of the total UK population). Although there is an increase over all 5-year age groups in the older population, as Figure 5.4 shows, the ONS (2009b) still expects a decrease in the old age support ratios, from the 2008 figure of 3.2 people of working age for every retired person, to an estimated decrease of to 2.8 by 2033.

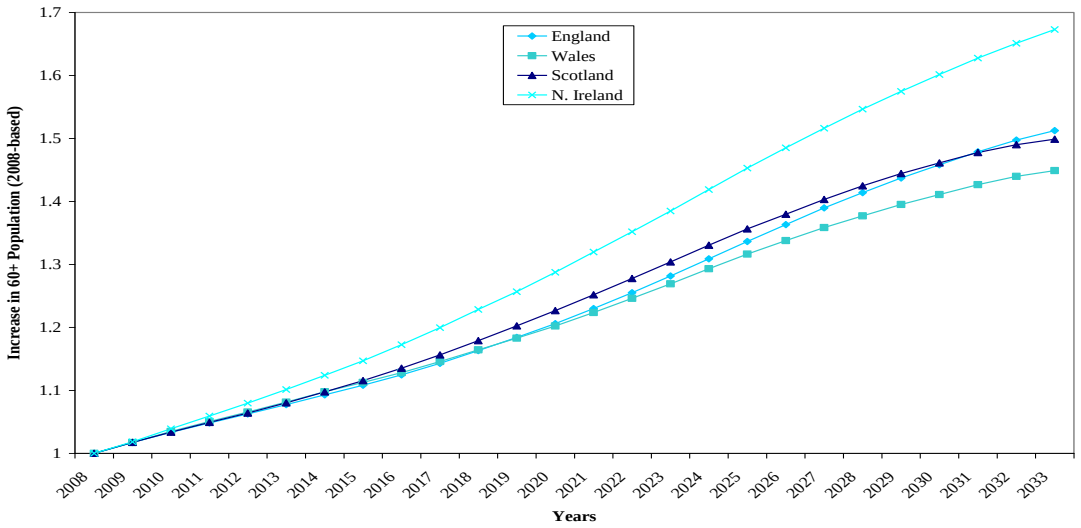
Figure 5.4 Estimated and Projected 65+ Population, UK, 2008-based, 2008–2033



Source: ONS (2009b)

Taking 2008 as a base year, Figure 5.5 shows the projected increase of the 60+ UK population, broken down by country. The results show that until 2030, Northern Ireland is expected to experience the largest increase in the 60+ age group, with Scotland being the second; then, from 2030, England is expected to be the second biggest country to experience the 60+ year olds population increase.

Figure 5.5 Population Projection 60+ (index to 2008=1), England, Wales, Scotland and Northern Ireland, 2008–2033



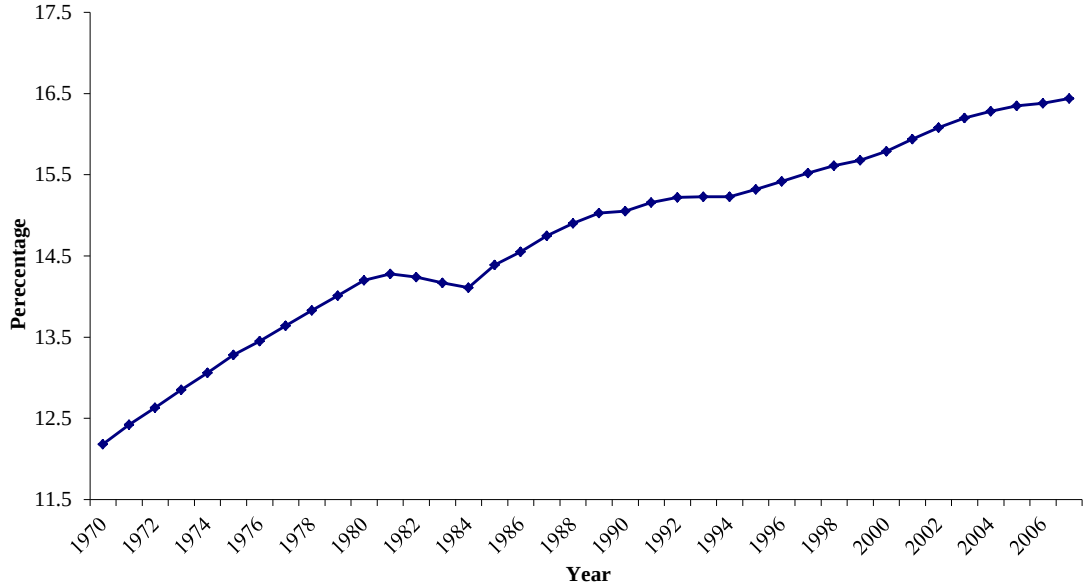
Source: ONS (2009b)

In addition, in the UK, there has been an increase in the number of supercentenarians (people who live to 110 years or more) and although there have been very few men among them, this is expected to change in the next few decades. The ONS (2009b) projects that almost 30 per cent of supercentenarians in 2034 will be male. The total number of supercentenarians was 7 in 2009 and this is expected to increase to a total of 100 by 2034, showing an expediential rise of supercentenarians within the population.

5.2.2 An Ageing Scotland

Figure 5.6 shows in more details the percentage rise of the people aged 65+ years compared to the total Scottish population over the recent past to present. This illustrates the significant increase in the number of 65+ year olds over the last four decades.

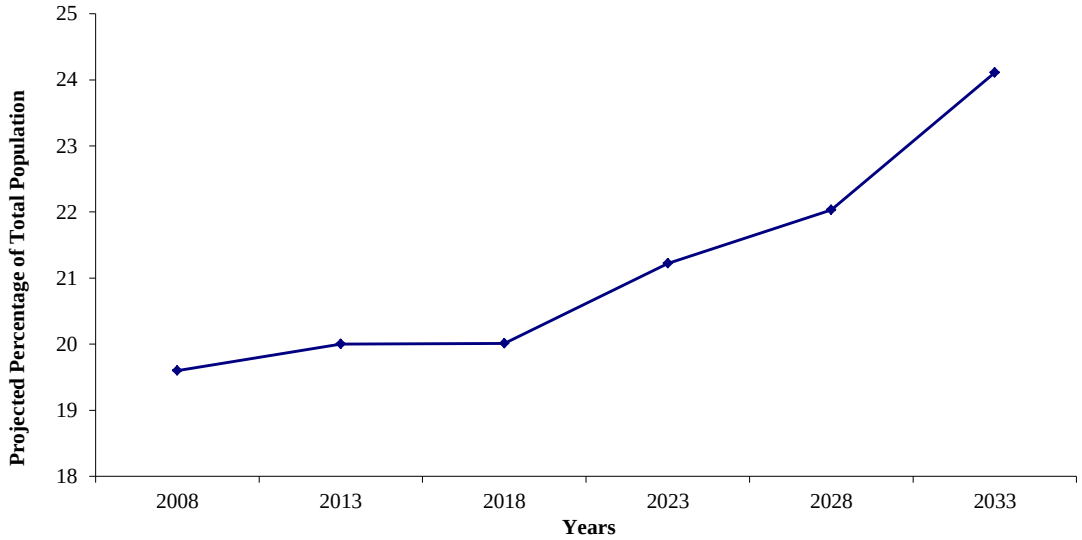
Figure 5.6 65+ Age Group as a Percentage of Total Population, Scotland, 1970–2007



Source: GROS (2009a)

The 65+ year old age group is projected to increase significantly in the future, as Figure 5.7 shows. The pensionable age group (accounting for changes in the retirement age) is expected to increase overall from 19.7 per cent of the total population of Scotland to 24.1 per cent over the period to 2033.

Figure 5.7 65+ Age Group as a Percentage of Total Population, Scotland, 2008–2033



Source: GROS (2009a)

Since the 1950's, the fastest growing age group in the Scottish population has been from the centenarians (GROS 2010b). Table 5.3 shows the number of Scottish people living between the age of 90 and 99 years old as well as 100+ years old. The biggest increase is found in the 100+ age group, which have experienced a rise of 32 per cent from 2002 to 2009. Within this 100+ age group, the males have increased the greatest with 60 per cent change from 2002 to 2009, while the females show a 25 per cent increase.

Table 5.3 Population of Very Old, Scotland, 2002–2009

	All		***Male***		***Female***	
	90–99	***100+***	***90–99***	***100+***	***90–99***	***100+***
2002	29400	570	6550	60	22850	510
2003	29940	580	6810	70	23130	520
2004	30650	580	7040	70	23610	510
2005	31450	600	7420	60	24030	540
2006	31780	630	7570	60	24220	570
2007	31170	640	7550	80	23640	550
2008	30500	700	7460	100	23040	600
2009	30810	750	7810	100	23000	640

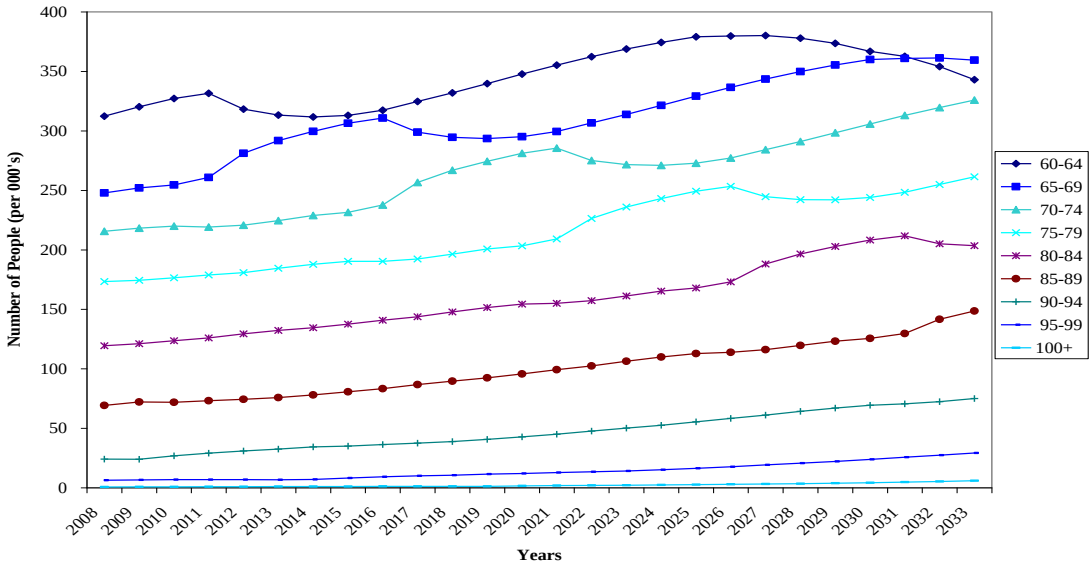
Source: GROS (2010b)

As mentioned earlier, the life expectancy in Scotland is increasing at a steady pace, while the healthy life expectancy is not improving at the same rate. This shows that currently, there is a chance that on average, a Scottish man will live those 7.2 years with a debilitating illness (9.2 years for a Scottish woman), which takes some older people out of the potential supply of volunteer labour pool. It is reasonable to assume the sheer numbers of older people in the future will more than compensate for this loss. Further, the trend in life expectancy and healthy life expectancy is forecasted to continue to improve.

According to the GROS projections (2009a), the number of people aged 60 years or over and living in Scotland is projected to increase from 1,169,000 in 2008 to 1,752,000 in 2033 (a 50% increase over the period). Of this increase, the 60–74 year olds account for 59 per cent and the 75+ year olds account for 41 per cent. The number of people aged 60+ years currently accounts for 23 per cent of the total

Scottish population. This group is projected to account for 32 per cent by 2033. Figure 5.8 shows the projected trend of the 60+ population within 5-year age groups.

Figure 5.8 Estimated and Projected 60+ Population, 2008-based, Scotland, 2008–2033



Source: GROS (2009a)

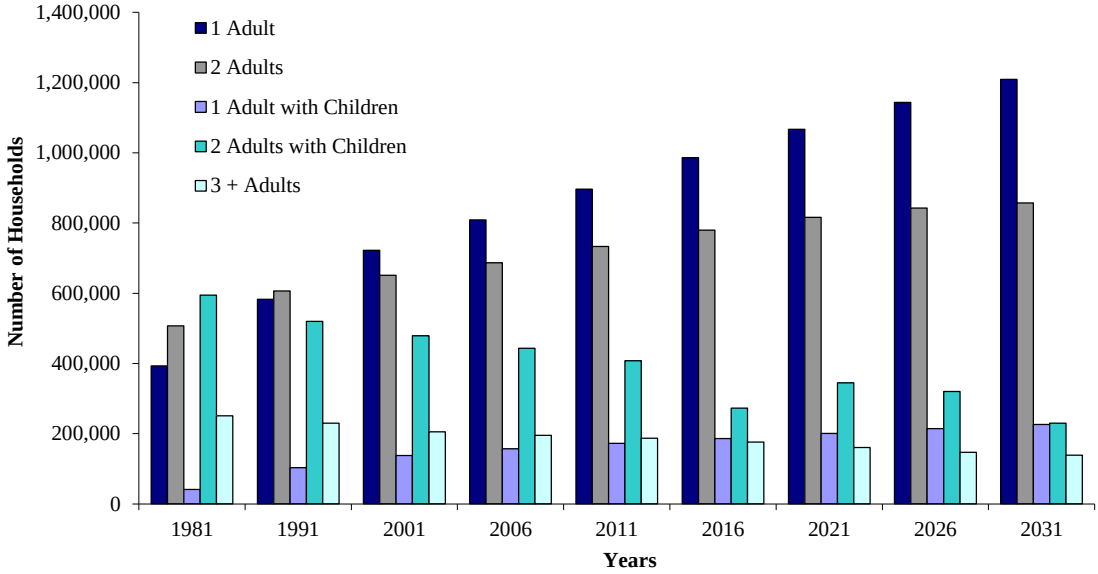
Currently, the average percentage of a Scottish male's life spent in retirement is around 12.6 per cent and around 24.7 per cent for a female. Females far outnumber the men in the older age groups, but this gap is expected to reduce in the future. The implications of the population ageing bring forward the issues of the housing and the health of the growing older population. Health of the ageing population is of importance to the government, as this has a direct effect on the amount of state-supplied health services and provisions that will be required. Primary care and free personal / nursing care are two of the main areas used by older people in Scotland (Jeannet, 2010).

There are also geographical implications to the Scottish ageing. Chapter 2 found the rural areas in Scotland will experience the worst of the ageing population. These rural areas already have a highly dispersed population (18 per cent of the population living on 94 per cent of the land) with little state-provided services. The Scottish Government (2010a, p.29) recognises this future pressure the ageing population brings to Scotland geographically, "...in relation to geographic variation, the greater

proportion of older people in rural areas suggests higher demand for age-related health and social care services". The number of people that are married reduces greatly as people enter old age because of women having an increased life expectancy; indeed, they are more likely to be unmarried than men as they enter the higher older age groups. The increased likelihood of older people living alone places pressure on housing stock with the number of single households increasing.

As stated previously, the GROS (2011a, p.5) found that, as the Scottish population has increased over the last two decades, the number of household has increased markedly more, "Since 1991, Scotland's population has increased by almost 2.7 per cent. The number of households has increased at a far greater rate (by 15.4 per cent) because the average household size is getting smaller, with more people living alone and in smaller households". Figure 5.9 shows there is an expectation that the number of one adult household will increase significantly over the next twenty-five years or so. GROS (2009b, p.1) expects that in 14 of the 32 Local Authority areas, the number of one-adult households will increase by at least 20 per cent driven mostly by older people, "Most of the expected increase is the result of an ageing population, and more people living alone or in smaller households, rather than an increase in the population".

Figure 5.9 Households by Types, Current and Projected, Scotland, 1981–2031

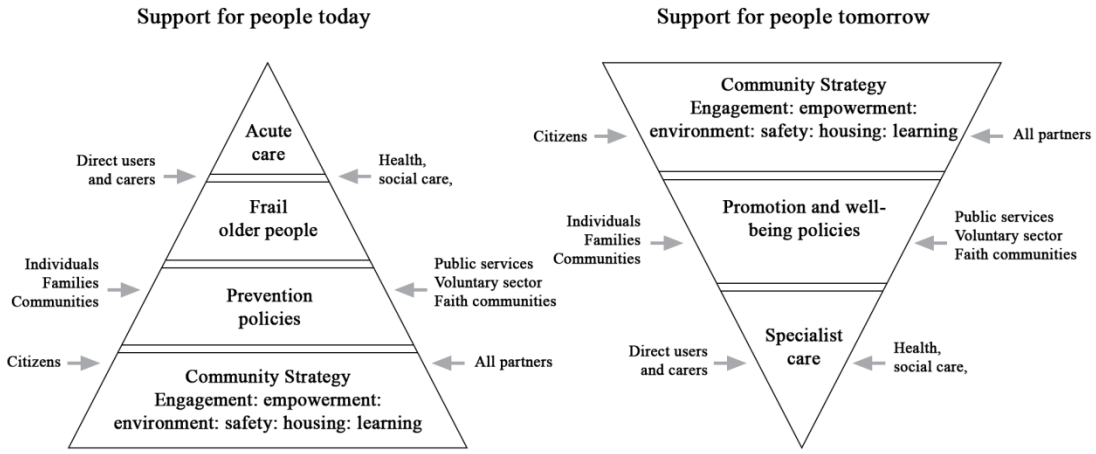


Source: GROS (2009b) and GROS (2009c)

Entering old age alone can have other implications to older people in Scotland. A study by Boyle et al (2009) investigated the effect of widowhood in order to see if this increases the risk of mortality in Scotland, using data from the Scottish Longitudinal Study, which they controlled for a variety of both individual and household level socio-economic characteristics. Their results showed the 'widowhood effect' is significant, especially soon after the death of a spouse (six months). This effect continues to be significant for a ten-year period, particularly for older women. The number of households is expected to increase and so is the number of older people living alone, which raises the issue of isolation and wellbeing. Another pressure on the provision of care for the older population is the growing amount of mobility in society. This has reduced the supply of informal care (Wood and Bain (2001)), as younger generations move further away from elderly relatives. This intensifies the need for the services of the voluntary sector, among others; however, the Scottish Government (2011g) found that 73 per cent of older people are living independent lives at the age of 97 year old, and 35 per cent by 100 year old.

The Joseph Rowntree Foundation (2004a) found that, as society ages, the future supply of services needed by older people will need to be inverted. This is shown in Figure 5.10, where the triangle for support for people today is inverted in the future, becoming the inverted triangle support for people tomorrow. At the top of the support for people tomorrow should be the community strategy. The Joseph Rowntree Foundation (2004a, p.5) found that a 'radical change of perspective' is required if the government are to meet the needs of an ageing society. They also point out that this inverted approach needs not be any more expensive, "...it involves a better use of resources and more effective ways of public services working together in the interests of citizens".

Figure 5.10 Shifting Focus, Inverting the Triangle



Source: Joseph Rowntree Foundation (2004a)

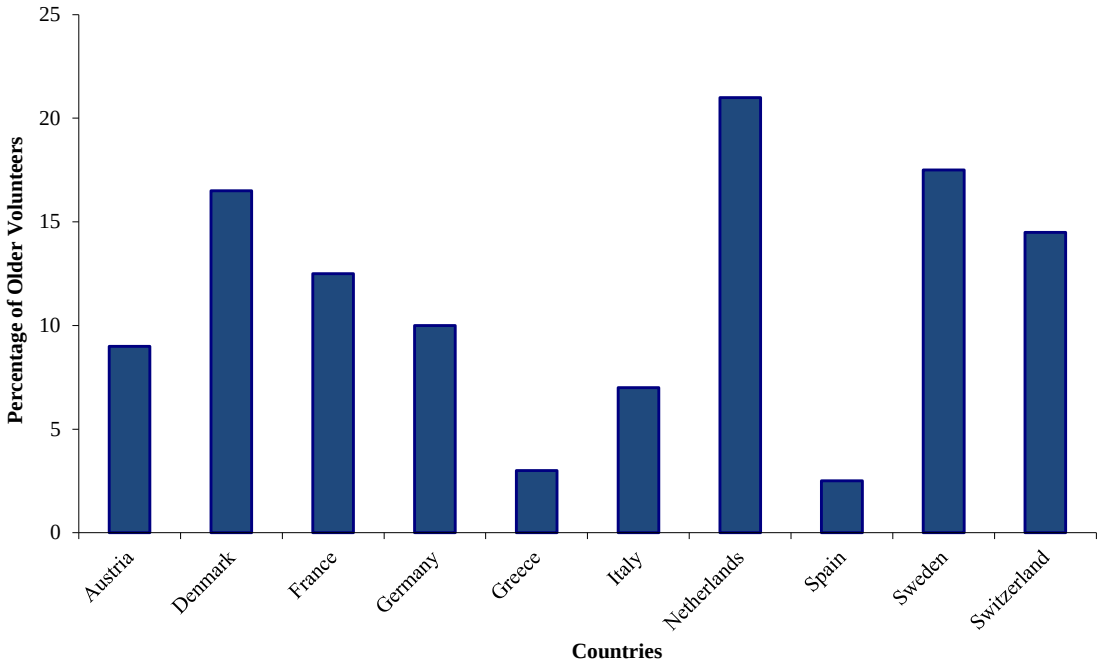
5.3 International Volunteering by Older people

Currently in the world, older people have a lower propensity to participate in the paid labour market than they were in the past, especially men (Wise (1997), UN (2002), Lund & Villadsen (2005), Neuman (2008), Józwiak et al (2008), Ekerdt (2009)). With regards to the labour force, the UN (2002) found the developing countries have the highest participation rates of older workers. They found that, by far, Africa has the highest proportion of economically active 65+ year olds, while Europe has the lowest. They also found that in a number of developed countries, there are less than 1 per cent of people aged 65+years participating in the labour force. If the older people of the developed world are not supplying their time as paid labour, then this gives the voluntary sector a larger pool of potential volunteer labour.

Erlinghagen and Hank (2006) carried out a research on volunteering by older people using data from the 2004 Survey of Health, Ageing and Retirement in Europe (SHARE). In this micro data from around 22,000 people in Europe, it was found that older people living in Mediterranean countries participated less in volunteering than older people living in the Northern Europe countries. This can be seen in Figure 5.11, with the percentage of older volunteers in each selected country. The research concluded that lower rates of volunteering were associated with being over 75 years of age, in poor health and having paid work. They found that higher rates of

volunteering among older adults were associated with high levels of education, among couples, and when already engaging in other social activities. They concluded that there were no indications the differences found in the observed country might be explained by population composition or attitudes.

Figure 5.11 Sample of European Countries, Older Volunteers, Europe, 2004



Source: Erlinghagen and Hank (2006)

Van Dijk and Boin (1993) found that older people in the Netherlands are less likely to volunteer because of health and diminishing altruism. The Harvard School of Public Health (2004) found that in America, a small population of older people are performing the majority of the volunteer work. They suggest that baby boomers will volunteer less as a group than their previous generations, which is not considered a problem given the number of volunteers. They found that an overwhelming majority of 65+ volunteer activities were performed with or through a place of worship, as it can be seen in Table 5.4.

Table 5.4 Distribution of Volunteers Aged 65 and Older by Type of Main Organisation

Type of Main Organisation	*Total Volunteers (7,492)*
Government, political, professional or institutional	7.9%
Education or youth service	6.5%
Environmental or animal care	1%
Hospital or health	10.5%
Public safety	1.2%
Religious	45.2%
Social or Community service	17.6%
Sport, hobby, cultural or arts	4.2%
Other	4%
Not determined	2%

Source: Harvard School of Public Health (2004)

Weemaes and Schokkaert (2009) carried out research using data from SHARE and found the European average of elderly people in their sample was of 14 per cent, as shown in Table 5.5, with most elderly people volunteering almost weekly.

Table 5.5 Volunteering in Europe: Older Volunteers

Country	*Voluntary Work*	*Frequency*		
		Less than weekly	*Almost weekly*	*Almost daily*
Austria	9%	54%	43%	3%
Germany	11%	37%	47%	16%
Sweden	18%	45%	41%	14%
The Netherlands	22%	24%	61%	15%
Italy	7%	37%	45%	18%
France	13%	36%	42%	22%
Denmark	18%	40%	49%	11%
Switzerland	14%	46%	41%	13%
Europe	14%	37%	48%	15%

Source: Weemaes and Schokkaert (2009)

Within the UK, Price (2007, p.4) found that older volunteers are mainly in the field of social care to their own group, "Older volunteers (and volunteering as a whole in the UK) are disproportionally involved in the delivery of social care to older people". Table 5.6 shows the breakdown by age of the different voluntary activities.

Table 5.6 Older Volunteers Involvement by Field of Activity, UK

Field	***Percentage of Volunteers Aged 50 and Over***	***Percentage of Volunteers Aged 65 or Over***	***Percentage of Hours Contributed by Older Volunteers***
Social Service	75%	40%	80%
Health	73%	32%	74%
Environment	71%	42%	69%
Philanthropic Intermediaries and Voluntarism Promotion	44%	4%	43%
Culture and Recreation	43%	14%	48%
All	***65%***	***30%***	***67%***

Source: Price (2007)

Older volunteers from different countries have been shown to have similar social-economic characteristics. In general, older people who are less educated are less likely to volunteer (Vaillancourt, 1994; Freeman, 1997; Pho, 2008 and Schady, 2001) and so are the older people on low income (Vaillancourt, 1994; Freeman, 1997; Pho 2008; Schady, 2001; Woolvin, 2010 and Tang, 2008). The majority of older volunteers belong to religious organisations (Rochester et al, 2002; Fischer and Schaffer, 1993; Social Research, 2008; Scottish Household Survey, 2000–2010; Kouri, 1990 and Onyx and Warburton, 2003) and older people are more likely to volunteer if they come from a higher socio-economic group and are married (Scottish Household Survey, 2000–2010). In addition, older people have a higher propensity to volunteer if they are in reasonable health and have a large social network (Choi, 2003; Onyx and Warburton, 2003 and Morrow-Hill et al, 2003).

5.3.1 Volunteering by Older people in Scotland

Over twenty years ago, Kouri (1990) described the older volunteers as an untapped resource that could meet a variety of society needs. The Select Committee (2003, p.23) found the retired population continues to meet social needs, "It is also clear that many individuals who have left the labour market continue to perform socially and economically valuable roles. They may provide elderly care for family members (thereby enabling others to be economically active) or participate in the voluntary sector". The Scottish Government (2006b) points out that older volunteers provide

important support to voluntary organisations and states that older people are not only the ‘cared for’, they usually are the ‘carers’ themselves, looking after family members. Findlay and Findlay (2005) found there was an increase in the 65+ year olds volunteers in Scotland, which showed no particular drop in the propensity to volunteer as they aged.

Price (2007) found that older volunteers in the UK are mainly in the field of social care and caring for their own group, which is especially true in the remote areas of Scotland. Many organisations in the Highlands are run by older volunteers for older people. In Scotland, volunteers aged 60+ years carry out almost one third of unpaid care (Age Concern Scotland, 2010). The National Forum on Older Volunteering in Scotland (2006, p.6) lists the activities older volunteers in Scotland take part in,

> They dig ditches and plant trees, provide patient transport, assist with wildlife surveys, run lunch clubs, provide IT training, staff telephone befriending services, help with riding for the disabled, knit teddies for traumatised children and layettes for premature babies, maintain accounts for voluntary bodies, support reading and number work in schools, mark and maintain footpaths and rights of way, assist in archaeological research, chair committees and develop business plans, etc.

Table 5.7 shows the number of older volunteers in Scotland over an 11-year period. This illustrates the increase in older volunteers in Scotland, particularly in the 60–74 age group.

Table 5.7 Older Volunteer by Age and Gender, Scotland, 2000–2010

	60–74		*75+*	
	M	***F***	***M***	***F***
2000	22	26	12	13
2001	23	25	13	15
2002	26	27	15	15
2003	23	26	11	14
2004	23	27	13	14
2005	21	24	13	13
2006	24	28	17	14
2007	27	35	17	17
2008	29	32	17	19
2009	28	33	19	18
2010	30	35	20	18

Source: Scottish Household Survey (2001–2011)

5.4 Understanding the Older Volunteers

Older volunteers are not homogeneous. In this research, the use of the term ‘older volunteers’ means the people that have retired from the paid labour force and generally are 60+ years of age. It is important to be clear that this group itself has sub-groups, as it can contain more than one generation with varying mental and physical abilities. There have been a number of studies carried out which attempt to categorise the variety in the older population. Neugarten (1974), who was first to coin the term ‘young-old’ and ‘old-old’, carried out one influential study, where he makes a distinction not on a person’s age, but on a group of social and health characteristics. The young-old (age group 55 to 75) are found to be free from traditional responsibilities of work and family, politically active, increasingly well educated, affluent, and relatively healthy. It was also found in this research the ‘young-old’ will develop a mixture of new needs with respect to meaningful use of time and maximising the opportunities for both self-enhancement and community participation.

With regards to the ‘old-old’ (age group 76+), Neugarten (1974) found that this group may live independent lives, but with the need for supportive social services and special features in the physical environment, in order to allow them to function

to their potential. The ‘old-old’ will need a provision of health services that are aimed at slowing physical and mental deterioration; therefore, she suggests that social services should be designed to prevent unnecessary decline in the individual’s feelings of self-worth and dignity. The Joseph Rowntree Foundation’s (2004b) study concords with the idea of these two groupings. They suggest these two groupings arise as there are two separate generations within retirement, since retirement can happen from fifty years of age to more than seventy.

Adams (1998) uses four different categories to describe the older population in terms of volunteers. The first category is the ‘autonomous rebels’, in which Adams found that around one-quarter of baby boomers in Canada belonged here. He suggests their perspectives of life are based on a strong focus on individual autonomy and personal fulfilment. He finds they usually have a higher level of education and income with most of them being professionals. This type of ‘baby boomers’ will be more suited to well organised voluntary organisations that use their labour supply in a meaningful way.

The second category is the ‘anxious communitarians’, in which he found that around one-fifth belonged here. Adams found that this category contained more women than men, living in small or mid-sized communities with average household incomes. They are motivated by a mixture of anxiety and a duty to others, and are devoted to their communities. Adams suggests that people in this group tend to be more involved in their community, are quite sociable older people, and are more suited to the traditions volunteering roles.

The third category is the ‘connected enthusiasts’, with around one-sixth falling into this group. People in this group are mainly found in larger cities and, as Adams suggests, are the most sociable. He finds they build their lives around other people by doing this for and with other people in their communities and with the rest of the world. The people in this group are said to crave a sense of being plugged-in and try to squeeze everything they can out of life. With these desires, they are said to be the youngest of the older volunteers in terms of their attitude, and will tend to volunteer in areas where there is a new need.

The fourth category is the ‘disengaged darwinists’, which Adams found was the largest with around forty per cent of all the baby boomers. This group contains more men than women, mostly blue-collar workers, and living mainly in large cities. This group feels that no one is looking out for them; therefore, it is up to individual people to look after themselves. Adams finds that this group lacks confidence, does not feel comfortable with change and other complexities of life, and would volunteer mainly in a traditional voluntary setting.

In this research, the young-old contains the age groups from 60 years to 74 years and they are assumed to be in good physical and mental health. The term ‘old-old’ is taken to assume people who are generally 75+ year old, who are usually in a frailer elderly condition, and who pose an array of challenges for the Scottish public age-related provisions. As a result, these two groupings are transposed to become the underlying assumption within the term older volunteers in this dissertation.

5.4.1 Motivation of the Older Volunteer

Greising (1998, p.1) describes the current retiring older population as breathing new life into service organisations. This is said to be so because of the people retiring who now are healthier and more active than previous generations, “By demanding assignments that will challenge them just as their careers did, they are changing the nature of volunteerism”. In assuming that this trend will continue, it is important that we understand what motivates older volunteers. If the motivations of older volunteers are understood, then this allow some insight into the necessary provision that is required to be in place. This also enables the sector to effectively plan and efficiently support the expected growing number of older volunteers.

There have been studies carried out into what motivates an older adult to volunteer. In general, the studies have found that older adults volunteer for similar reasons as other adult volunteers do. There are of course some motivational differences that exist between young adult volunteers and older adults. Fischer and Schaffer (1993) point out the older volunteers, compared to younger volunteers, are less likely to be motivated by material rewards. They also found that older volunteers are less likely to say that status/reward was their motivation and are more likely to say they

volunteer for religious concerns. The IVR (2007a) also found differences among the motivations for the younger and the older volunteers. They found that most of the 18–24 year old age group saw improving their career and learning new skills as their main reasons for volunteering, whereas most of the 65+ age group said that having spare time was their main reasons for volunteering.

In a national survey of volunteering carried out by the IVR (2007a, p.2), it was found there were several factors that motivated the 65+ age group to volunteer in the UK, "…having time to spare was the largest factor. Referring to the benefits the volunteers perceived for themselves, nearly all said they got satisfaction from seeing the results…and really enjoyed it". A further study by IVR (2009) into older volunteers in the UK found that the four most cited reasons for choosing to become a volunteer with a particular organisation were 1) to put skills and experience to good use, 2) because the organisation had a good reputation, 3) because the organisation was known to be short of volunteers, and 4) because someone asked. They also found the top reasons why the older volunteers stayed with an organisation was because 93 per cent thought voluntary work in the organisation was very well or well organised, 90 per cent enjoyed the work and 85 per cent thought it was very worthwhile. An additional 73 per cent were intending to stay as volunteers with the organisation until the time their health or age prevented them.

Rochester et al (2002), listed a number of reasons why older people in the UK volunteered including, to meeting new people, feeling valued, for personal development by learning new skills, dealing with an 'empty nest syndrome' (following children leaving the home), leading independent lives, and to help cope with bereavement of a spouse. Okun and Michel (2006) found there were several reasons that resulted in volunteering by older people. The likelihood of older people volunteering increases as education level, organisational ties, church attendance, and a sense of community, all increased. While researching older volunteers in the UK, Bernard (2000) found that older people are motivated to volunteer for the following reasons: helping others, feel useful and valued, make friends and combat loneliness, give structure and purpose to the day, utilise existing skills, learn and pass on new skills, and enjoy themselves. Kouri (1990) simply suggests the motivation for older

people to carrying out volunteer service was because they felt it was a meaningful activity to do.

A study carried out by Davis Smith and Gay (2005) also found that retired people volunteer for several reasons, including the need to keep active, enjoying the activity itself, helping others, using their own skills or gain new ones, maintaining a role in society, and putting structure on their free time. They suggest there are three characteristics that would appear to play an active part in people's inclination to volunteer. First is religion, which left them with a 'residual ethos' of helping others. Second is family influence, which was a strong characteristic for people's propensity to volunteer, with the passing down of attitudes from parents or other family members to the next generation of helping their neighbour, or joining a voluntary organisation. Thirdly, geographical stability was a characteristic of people volunteering, where the person still lives in the place where he was born, having built up social networks in the area, which has a positive correlation to the tendency to volunteer. Wandersman et al (1987) also found that older people will volunteer if they are rooted to the neighbourhood.

Heartbeat Trends (2001) carried out a research into how volunteering can be used to fulfil the needs of older people in Australia. They found that older people can fall into four different areas regarding their personal fulfilment requirements. The first are nurturers, where the main motivation is emotional connection and self-worth. Nurturers want to both give and receive love that feeds their own self-worth. Second are adventurers, whose key motivation is personal growth such as learning new skills, experiencing new things, and being challenged. The adventurers will take more risk to increase their level of stimulation. Third are the workers, whose motivations are to gain or maintain their self-worth by feeling they are being useful and productive, and to whom the correct volunteer experience could provide a sense of purpose that may have been threatened when they left the workforce. The fourth are the socialisers, whose motivation is to feel a sense of belonging in a group, which can be because of feelings of loneliness.

Okun (1994) found that older people were not likely to be motivated by the need to gain understanding or stop feelings of loneliness. Finding that, older adult volunteers

reported to be more motivated by altruistic and self-esteem motives. For the retired people, leaving the workforce often denies them of the accompanying attributes to being in paid employment. These attributes include a time structure, meeting other people, social standing, using their skills, and being part of a group. Volunteering can give back the missing attributes that paid work gave them. Barlow and Hainsworth (2001) and Hardill and Baines (2009) found that volunteering by older people is motivated by the need to fill the vocational gap left by retirement. This allows them to be able to feel as though they are useful members of society by the means of helping others, and it helps them find a peer group. Barnes and Parry (2004) also found the onset of retirement and retirement itself push older people to make new social connections using the voluntary sector.

The traditional investment motive does not hold when examining older volunteers, as it suggests that volunteering should reduce with age, given the motive is to enhance skills and knowledge among others, in an effort to widen future employment opportunities and future earnings. This is not the observed trend, the 65+ generation have a higher propensity to volunteering than younger adults. Hackl et al (2005) suggest the older volunteers in Europe simply switch their investment motives as they enter retirement. This switch is from an investment in human capital to an investment in their own mental and physical health, or to enjoy themselves as retirement comes into reach.

Research carried out by Volunteer Development Scotland (2004) found that retired volunteers are more likely to volunteer with altruistic motives. Their results showed that 75 per cent of Scottish volunteers did so because they saw a need to help. They further found that altruism is more evident in those volunteers aged 65+ years than in any other age groups. It would appear that in Scotland, in order to increase the public good, older volunteers are not likely to be driven by investment or private benefit motivations and are more likely to be driven by an intrinsic altruistic motivation,.

5.4.2 The Benefits of Participation for Older Volunteers

There is a growing amount of literature on the benefits of volunteering, especially in relation to the older volunteers. Research results suggest these benefits range from

greater life satisfaction to a prolonged lifespan. The Scottish Government (2006a, p.1) suggests that older people who can volunteer "Improve health; improve mental wellbeing; provide a way for people to keep active and contribute to communities; provides opportunities for personal development, and to build and pass on skills and knowledge". With only a few exceptions, all studies have found similar benefits of what older people are assumed to receive from volunteering. The IVR (2007) found three main benefits, which volunteers received. The first was receiving satisfaction from seeing the results, the second was receiving personal achievement, and the third was they got enjoyment out of volunteering. Usually, retired people in Scotland have little social responsibility. As a result, this can make them less active and perhaps make them feel like they are not part of a productive society once they have left paid employment; therefore, it is reasonable to assume volunteering in later life can help increase their physical and mental wellbeing.

A number of studies that investigate the benefits that older people derive from volunteering have been carried out. An overwhelming amount of studies have found that volunteering in older age can reduce mortality rates and improve the quality of life, compared to older people who do not volunteer (Hunter and Linn, 1981; Abraham et al, 1996; Davis et al, 1998; Wilson and Musick, 1999; Wilson, 2000; Van Willigen, 2000; Thoits and Hewitt, 2001; Luoh and Herzog, 2002; Onyx and Warburton, 2003; Ellis, 2003; Morrow-Hill et al, 2003; Meier and Stutzer, 2004; Lum and Lightfoot, 2005; Piliavin and Siegl, 2007 and Casiday et al, 2008). Older volunteers have been found to have higher levels of self-esteem (Okun, 1994; Thoits and Hewitt, 2001 and Ellis, 2003) and have greater confidence (Fischer and Schaffer, 1993 and Bowman, 2004) than older people who do not volunteer. It has also been found that volunteering in older age can prevent feelings of loneliness and isolation (Barlow and Hainsworth, 2001), and help retired people redefine their role in society (Okun, 1994; Abraham et al, 1996; Wilson, 2000; Thoits and Hewitt, 2001 and Greenfield and Marks, 2004). Further, older volunteers are said to be able to cope with bereavement and other emotional losses better than non-volunteers are.

Other benefits include increased life satisfaction. Meier and Stutzer (2004) found that volunteers are more satisfied with their life than people who did not volunteer. In

investigating older adult volunteers, Luoh and Herzog (2002) found that volunteer work, among those adults beyond retirement age, has a beneficial effect on including improvement in cognitive impairment, depression, mortality, and physical activity. Morrow-Hill et al (2003) found the level of older adult volunteers only begins to decline around the age of 75 years. She also found that older volunteers have a higher level of wellbeing and experience less depression (controlling for social integration, race, gender, type of voluntary service, and the number of organisations a volunteer divided their time by) than older non-volunteers.

Greenfield and Marks (2004) found that if older adults do not have role identity, they will experience diminished wellbeing and that for them, volunteering serves as a protective factor against what they call a psychological wellbeing disadvantage (reduced sense of purpose in life that accompanies role-identity absences). Wilson (2000) points to the expectation of greater health benefits for volunteers. This is because of volunteering being an additional social role and as such, there is beneficial health effects produced with greater social ties. Ellis' (2003) research found that older people volunteering brought about enhanced physical and mental wellbeing, and that mental wellbeing gave then a feeling of making a difference and improved their happiness, confidence, and self-esteem. Okun (1994, p.123) also found that older volunteers are motivated by a desire to feel useful, "Older adults who are motivated by a desire to feel useful or productive may use frequent volunteering as a strategy to maintain self esteem".

A table has been devised by Irvine and Hayward (2009) from their research, which lists the feelings that older volunteers and non-volunteers feel at certain ages of their lives, and shows positive reasons to volunteer, referenced here as Table 5.8. The research shows that when older people volunteer, they feel valued and gain satisfaction and fulfilment, as opposed to the non-volunteer who exhibits feelings of being undervalued by society and become stuck in a rut.

Table 5.8 Older Volunteers and Older Non-Volunteers Life Stages

55–59	*60–65*	*65–69*
Non-Volunteers - A few years off retirement - Potential to feel unneeded, skills redundant - Children not so demanding - Some concern as to what life will be like - How to fill their day - "Passed their sell by date" - "Thrown on the scrapheap of life"	**Non-Volunteers** - Have retired - Not what expected - A little unsure of their direction and meaning of their life - Unsettled - Have time on their hands	**Non-Volunteers** - Become settled in a rut / daily structure - Content with their routine - Feel undervalued
Volunteers - Feel fulfilled - Can not wait to retire to do more volunteering in areas of their interest without daily work pressures		**Volunteers** - Well settled in their volunteering routine - Great satisfaction - Sense of self-worth - Contributing to society

Source: Irvine and Hayward (2009)

When examining the differences between older people who volunteer and those who do not, Hunter and Linn (1981, p.205) found volunteers had a greater amount of life satisfaction and a stronger will to live. They found that volunteers had fewer symptoms of depression, anxiety, and somatisation, when controlling for demographic and background variables, "…participation in volunteer work appears to be the salient factor in explaining psychosocial differences between volunteers and non-volunteers"

Van Willigen (2000) investigated the impact of volunteering on the wellbeing of both the young and old volunteers, as well as on their non-volunteers cohorts. While controlling for social roles, socioeconomic status, functional impairment, social integration, social support, mastery, and socio-demographic characteristics, the result showed a significantly positive relationship between older volunteers and wellbeing. Older volunteers reported higher levels of wellbeing (better health and life satisfaction) than the non-volunteering cohorts did. Van Willigen (2000, p.317) also

found that older volunteers experience more psychological benefits for every hour they give to volunteering than younger volunteers do "Volunteering in old age may be a welcome alternative to hours spent at home, whereas volunteering in middle age often happens as an off-shot of other roles and therefore, may be perceived as yet another obligatory task to fulfil"

The validity of the link between volunteering in older life and the perceived benefits it brings has been open to question. A better, healthy life, where the older volunteers are more satisfied than older people that do not volunteer, can be difficult to prove conclusively. The benefits in some instances are not direct and the evidence is inconclusive. Even when controlling for demographic and background variables. It could simply be that a healthier person will choose to volunteer and that people who are generally satisfied with life may be more inclined to volunteer. A study carried out by Kornblum (1981) found no relationship between volunteering and health or satisfaction with life. Further, it found the volunteers were originally healthier than the non-volunteers were to begin with. Lee and Markides (1990) found in their research that there was no support for the idea that an active life within the older population will increase their lifespan.

In general, volunteering in older age brings a wealth of life satisfaction with a feeling of fulfilment and wellbeing benefits. Most people agree that productivity through volunteering allows the older person to retain their self-esteem and feelings of being useful, and that it serves a personal need to return something to society. The potential benefits from actively volunteering bring opportunities for productive and meaningful activities to be performed. This, perhaps, is especially significant for older people as they adapt to the changes in their physical, mental, and social conditions, after retirement (Fischer and Schaffer, 1993).

The benefits are not only felt by the older volunteers but also by the recipient of that activity. As Casiday et al (2008, p.3) found, "There was also evidence that volunteers can make a difference to the health and wellbeing of service users, including increased self esteem, disease management and acceptance, parenting skills, mental health, survival time and healthy behaviours". It has been stated previously that older people who are less educated or are on low income are less likely to volunteer.

Ironically, Morrow-Howell et al (2009) found that it was actually older people with less income and lower education levels that benefited more from participation in volunteering.

5.4.3 When to Recruit?

There has been some debate as to when would be the best time to approach older people in order to initiate participation in the voluntary sector. It has been suggested the best times to approach older people to volunteer is at the exact time of retirement, while others suggest just before retirement comes; finally, some suggest waiting until some time has elapsed between retirement and the on slot of boredom arrives. A number of studies have found a positive relationship between volunteering as a young adult and volunteering as an older adult, and suggest that getting people involved in volunteering before retirement is the key to ensuring they will continue after retirement.

Perry and Imperial (2001, p.476) found this positive relationship between people volunteering when they are younger adults and volunteering as older adults, "…service and volunteering during one's youth positively influence giving and volunteering later in life. The correlation between volunteering and later giving, and volunteering over time, is consistently positive". Fischer and Schaffer (1993, p.12) also found this positive relationship, "People who volunteer in old age tend to be those who have volunteered when they were younger…if we want to encourage older persons in the future to volunteer, then we need to find ways to recruit them (socialise them into volunteering) when they are younger". Hill (2006, p.3) also suggests, "…those who do volunteer during their early retirement years tend to do so more often than during their working years". Cohen-Mansfield (1989) also found that older people who volunteered previously during their lives were more likely to volunteer in old age.

There are many who believe that older adults should be approached at the point of retirement as volunteering in retirement can be felt as a natural step after paid employment ends. The European Network of Older Volunteer Organisation (2005, p.5) found that volunteer organisations should approach potential older volunteers

just at retirement, “Catch people immediately on retirement before they go elsewhere!”. Davis Smith and Gay (2005, p.1) found this to be a natural streaming from paid to voluntary work, “Volunteering gives retired people the opportunity to make a valuable contribution to society and for many it seems like a natural progression from paid work”. Hill (2006) found that if you can introduce volunteering just before or just after people retire, there is a greater chance they will volunteer. Lie and Baines (2007) found evidence of a high participation level of people volunteering just after retirement. Kouri’s (1990) research found there were two ‘transition points’ in older adulthood where older people are open to the idea of volunteering and using their time in a structured and meaningful way. She suggests they happen at the point of retirement and when an older person reaches seventy-five, and that they are best times to recruit older adults into volunteering.

Volunteering after retirement is of course not a natural step for everyone. Some older adults need time to adjust themselves into retirement in order to catch up on outstanding personal projects. Once they have caught up with what was needed, it could be a good time in their lives to think about committing to a voluntary organisation. Davis Smith and Gay (2005) also found in their research that the pre-retirement courses that encourage older adults to volunteer once they actually retire were not very fruitful. In addition, they found that it would be more useful to have a course to encourage older people to volunteer six months after they retire, to give them a chance to experience the freedom and then perhaps boredom if it is presenting itself.

The time of when to encourage older people into participating in volunteering work takes many factors into account. The main factor is past history with the voluntary sector, as volunteering can greatly depend on their previous association with the sector over their life course. Davis Smith and Gay (2005) found that different experiences in older people volunteering history influenced the way they moved into volunteering in retirement. They found three different groups. The largest group was the ‘lifelong volunteers’ where volunteering is a continuation through their lives and through to their retirement years. The second group, referred to as ‘serial volunteers’, where people volunteered throughout their lives in an intermittent way and have

came back to volunteering in their retirement years. The third group was the 'trigger volunteers', where they were mainly first time volunteers and most of them volunteered as a response to filling free time, or following a major event such as the death of a spouse.

In Scotland, a voluntary organisation, The Scottish Pre-Retirement Council (SPRC), helps older people make the transition from paid employment to retirement, especially facilitating a move into volunteering. This council is similar to other established networks, for example 'The Transition Network' (TTN) (2011), which runs in the USA and allows the workforce of 50+ years of woman to find connections with civic activities over the country after they have left the labour market. The SPRC is part self-funded and part funded by a grant (£15,000 per year from the Scottish Further Education Department). The organisation provides courses in workplaces, covering areas including state pension, opportunities in adult education, legal matters, savings and investment, and volunteering. The workplace can be an effective medium for which to highlight the opportunities of volunteering to people who are near retirement age. This could increase the likelihood of volunteering, once they have been informed about the opportunities. In an interview with Angela Fowlis (Director of The Scottish Pre-Retirement Council)[8], she said "The Scottish Pre-Retirement Council has helped thousands of people in Scotland through their change from working life to retirement...Volunteering has been a big part of the transition".

5.4.4 Recruiting Older Volunteers

Once the decision on when to approach older people has been decided, the next stage to be addressed is, how this should be done? Recruitment has become an issue of concern for the Scottish voluntary sector. The environment in which the voluntary sector needs to recruit older volunteers is very competitive. The ScER (2005, p.3) found evidence of significant recruitment difficulties in the Scottish voluntary sector,

[8] Interview with Angela Fowlis, Director of The Scottish Pre Retirement Council, Glasgow, 21st January 2010.

"...nearly 50 per cent of organisations in the voluntary sector have recruitment difficulties and the vacancy rate is higher than in the public and private sectors". They also found in their study that more than 75 per cent of voluntary organisation managers in Scotland had problems with recruitment for roles such as care workers. The ScER (2005, p.4) listed the reasons for this as being competition from other voluntary organisations, other sectors and Local Authorities, and a tight labour market. In addition, they found that expectations of what the job involves, unattractive working patterns, uncompetitive pay, lack of qualified applicants, and new legislation requirements, were adding to the recruitment problems for the sector.

Around 73 per cent of older people say they want to volunteer when they retire (Age, 2009), but only 40 per cent actually go on to volunteer. This could mean the recruitment process is not working properly, among other things, e.g., the fact they may have changed their minds or encountered health issues. Many more may find the voluntary sector does not advertise the roles properly and as a result, does not convey to the potential older volunteer a role that could realise their motives for wanting to volunteer. There just may not be the proper advertising of the roles or proper descriptions of the role. Riley and Riley (1989) noted there is a 'structural lag' existing in society between the capabilities of older volunteers and the voluntary structures that are accessible.

There is a potential danger that Scotland may find itself in a situation where volunteer organisations cannot increase their volunteer base because of lack of resources to attract them. An appropriate recruitment strategy aiming to encourage both long-term and short-term volunteers is required, even though short-term volunteers have a significantly higher cost for the voluntary organisations. Without a growing and strong volunteering force, Scotland would need an even bigger public sector than it currently has; otherwise areas where older volunteers are found, e.g., social care, arts, educational, and cultural, would lose out in this rich resource, which all makes recruitment of future older volunteers important.

Recruitment of older volunteers can be carried out in many successful ways. In a national survey of volunteering carried out by the Institute for Voluntary Research (2007), it was found the most successful (and frequent) way of recruiting volunteers

in the UK was word of mouth, followed by having previously used the services of the organisation and then, the use of leaflets or posters. The least effective way of recruiting was by a visit to a Volunteer Centre. Others have also reported word of mouth as being the most effective way in attracting older people to participate in volunteering (Shaffer, 1993; Fischer and Freeman, 1997 and Davis Smith and Gay, 2005). This is said to be effective as people are interested in what activities relatives and friends perform and, if asked personally, people do not usually like to say no.

Angela Fowlis, from the SPRC, also cited word of mouth as the top vehicle for recruitment, "Although we signpost our organisation in different places, word of mouth has been the main driver in our success in helping people". In a meeting of the National Forum on Older Volunteers (2009)[9], it was also confirmed that word of mouth is the most used method of recruiting older volunteers and that existing volunteers would be willing to do more if they were asked. As a result, being asked to volunteer should not be underestimated as a method of recruitment for the voluntary sector. Although, this form of recruitment can have an adverse effect on the organisation's growth and the variety of skills needed to run the programs. As people often ask friends and relatives who are similar to themselves and who share the same values and ideas, this can cause the organisation to grow in only one direction. Another method often used by the voluntary sector is to advertise in local newspapers the opportunities available in local areas.

Other media vehicles can be successful, some studies found the internet empowers voluntary organisations to attract volunteers and communicate effectively with existing and potential volunteers. According to Volunteer Match (2007, p.12), "The Internet is already successfully connecting older adults with satisfying volunteer experiences, 82 per cent of users 55+ who had recently volunteered were satisfied with the quality of their volunteer experience found through the internet". The use of the internet has increased in recent times because of its ability to find an efficient

[9] Meeting of the National Forum on Older Volunteers, Chaired by Bird Cullen (head of RSVP Scotland), 10th December 2009, Glasgow City Chambers.

match between the organisation and the volunteer. Volunteer Match (2007) goes on to state the internet makes it easier for people of all age groups to find voluntary organisations that need help, which 66 per cent of users agreed. A further 61 per cent reported the internet makes it easier to find interesting opportunities. The voluntary organisations found the internet empowers strengths and allows expansion of their volunteer initiatives, with 84 per cent of voluntary organisations stating the internet has helped them reach out and recruit more volunteers. Further, 82 per cent considered the internet as making it easier to find the right volunteers.

According to the Scottish Household Survey reports (2006–2010), there has been an increase in internet usage over all age groups in Scotland. This is especially true in the older age groups, with the larger increase within the 75+ age group. They report that older people in the rural areas are using the internet the most, compared to large urban areas. In Scotland, the 65+ age group are less likely to use the internet than their cohorts, in England and Wales, are (Age UK, 2011). Further, internet usage by the older population is positively correlated with income (Age Concern Scotland, 2010), which can prevent less well off older people accessing the voluntary sector. The voluntary organisations in Scotland also set up volunteer recruitment days, in areas where they wish to target the local older people. The potential older volunteer can go along with active older volunteers and spend the day with them watching and experiencing what it feels like to volunteer and what it entails. This ensures that both the organisation and the potential volunteer's expectation are met; therefore, there is little resources being used by both. This method has been used by the network of Volunteer Centres throughout Scotland.

Okun and Michel (2006) suggest the likelihood of volunteering increases with education, organisational ties, church attendance, and generative concern; therefore, efforts to recruit and retain older volunteers should highlight the organisation's activities. This would show the organisation's humanitarian values, its concern for the community, and how it benefits community members. In addition, Omoto and Snyder (2002) found that greater emphasis should be placed on community, "Volunteers, volunteer efforts, and many volunteer organizations are embedded in a

community context. This community context both influences the volunteer process and can be the target of volunteer efforts" p863.

Volunteer Canada (2001) also found that it is important in the recruitment of the older volunteers to emphasise the meaningful contribution the volunteers will be making. This can be performed using role specifications. In order to attract the older volunteer, the roles specifications should reflect what they value and what the role can provide for them. Onyx and Warburton (2003) found that volunteering works best for older people when it provides several key ingredients. Their list includes strong personal emotional support, the ability of maintaining physical and cognitive activity, the opportunity to contribute to the wellbeing of others, encouragement to maintain or improve good health practices, and strong links into supportive community networks.

Rochester et al (2002) found that older people from different environments could be encouraged to volunteer if there was more effort made to recruit them, and that older volunteers could participate in a greater variety of activities than is typically expected of them; therefore, it is important to separate the older people because they are a heterogeneous group. One leading theory by Wymer (2003) suggests differentiating sub groups of potential volunteers as a method for managers to identify them and communicate with them. This segmentation method is useful in identifying different groups with the older age groups. Wymer (2003) suggests the correct method for recruiting and motivating volunteers, is to handle the volunteers as a distinct market segment. This is done by differentiating volunteers serving in divergent types of voluntary organisations. By introducing a number of variables, the market can be segmented in a number of ways to see which ones reveal the most in the way of market opportunities. Wymer (2003, p.269) also points out the segmentation variables may be used in a combination or on their own in order to give an insight into the particular market structure. In doing so, he states that it will improve the understanding of volunteers, "Improved understanding of volunteers provides managers with better information to improve decision making related to recruiting and managing volunteers…By understanding an organisation's current volunteers, a manager can gain insights into targeting and recruiting new volunteers".

Wymer's (2003, p.282) variables for his study were demographic, social and lifestyle, personality, and personal. He then used the Rokeach Value Survey (devised by Milton Rokeach in 1973) for his variables, which is an instrument designed to 'operationalise' the value concept. The findings show that you can distinguish between volunteers in different voluntary organisations and find the performance level given by that distinct volunteer. By doing so, it can aid in the recruitment process of volunteers "A better understanding of an organisation's volunteers helps managers develop recruitment appeals that reflect their understanding of why people volunteer for a particular organisation".

The proper matching of volunteers with the volunteering activity is important when attracting older volunteers and in order to reduce future turnover costs. Volunteer Match (2007, p.28) found that, "Volunteers 55+ are more than twice as likely compared to those under 55, to pass on an opportunity they didn't find interesting and challenging". Tschirhart et al (2001) found the overall match of goal importance to goal achievement was significant in predicting volunteer satisfaction and that person's likelihood of volunteering in the future. Hoffman (2008) found that older volunteers want to use their professional skills they have built up over their working lives in order to help others. Although, Hoffman points out that in many cases, volunteering is more likely to involve roles with lower skill and responsibility levels. The proper role matching appears to be essential in order to recruit the older volunteers.

Each of the Scottish voluntary organisations could use this method of market segmentation, in order to help them understand their unique volunteering pool, using variables including demographic, social and lifestyle, personality, and personal variables. By doing so, it is reasonable to assume that it would allow them to better differentiate their volunteers from others in the sector, helping them to attract the right volunteers for their own particular organisation (efficiently allocating sector resources).. In addition, it would allow them to measure and then distinguish between the individual performances of their existing volunteers into high and low performers. Areas that need to be addressed in order to have a successful recruitment process are a proper role specification, proper advertising targeting older volunteers,

and then to share best practices in the recruitment process allowing the scaling up and rolling out of successful recruitment program to the sector. A centralised database could be set up at a government level on behalf of the Scottish voluntary sector for further gains in efficiency. The Scottish Government could realise the 'returns of scale' by matching country-wide voluntary opportunities with country-wide volunteers, tracking the volunteer's availably, location of required voluntary job, current abilities, training received, etc.

According to the SCVO (2010c, p.1), there is an issue with the voluntary organisations themselves in dealing with their resources, "The fascinating thing is there's never been a greater willingness of people to give their time. It's basically the demand-side, i.e., organisations with volunteering opportunities, that needs to change and be far more responsive to our diverse population". It is important the Scottish voluntary organisations target the older people as a heterogeneous group rather than just a one-size fits all recruitment campaign.

In marketing the volunteer role to the older person, it is important to stress the personal benefits of volunteering so they understand the positive health benefits other volunteers have reported, the gaining of new knowledge, and having a structure to their day. It is also important to stress the benefits they will create to the community by helping someone in need. The role should be able to adapt to the older person's lifestyle and be as flexible as possible, but above all, the volunteer role must match the volunteer and the organisation. Older people in Scotland have a vast amount of skills and knowledge they have built up over a lifetime of learning and experiencing. These qualities must be recognised when it comes to recruiting.

5.4.5 Retaining Older Volunteers

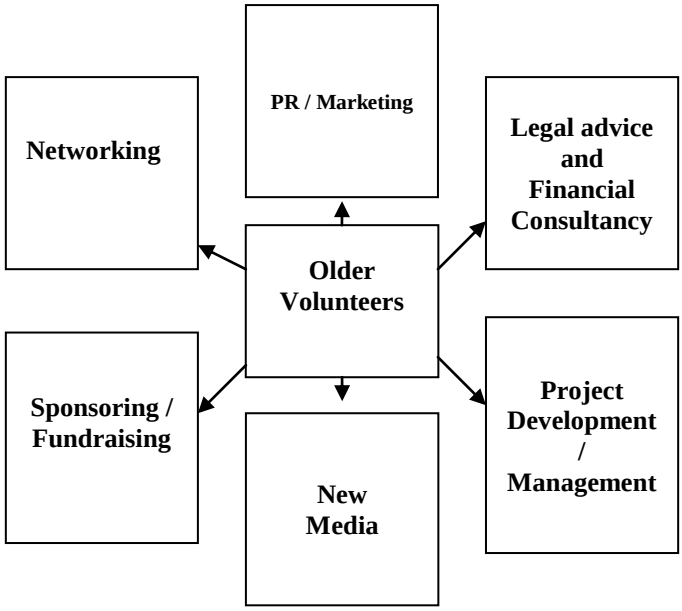
Once older volunteers have been recruited, retaining them then becomes a concern. It has been suggested that retention is even more important than recruitment in the survival of the organisation (Fischer and Schaffer, 1993). One of the main reasons why retaining the older volunteers is desirable is because of the cost incurred by the voluntary organisation in the hiring process (recruitment, training, office area and facilities, etc.). The cost to the organisation can be quite significant and can

determine the number of volunteer labour that is taken on. As illustrated in Chapter 4, assuming that volunteers have no costs because they do not receive a direct wage is not a realistic assumption.

Barlow and Hainsworth (2001) also found that one of the greatest costs to the voluntary organisation is in the retaining of its volunteers. For voluntary organisations, there is a financial and emotional cost involved in losing volunteers, which are the wasted resources spent on recruiting, training, and the loss of the relationships the volunteer has built up with both the organisation and the beneficiaries. The impact of these costs means the voluntary organisation may not be able to use all the available voluntary labour supply at their disposal and as a result, will demand less labour, even though they do not directly pay for it. It is reasonable that voluntary organisations will not accept everyone who wishes to volunteer at their organisation, as they cannot utilise all available voluntary labour. From a financial aspect, retention of the older volunteers is a top priority.

The benefits of retaining older volunteers within the organisation are not just financial, older volunteers bring a unique mixture of qualities to the voluntary sector. Older volunteers are found to be more loyal to the voluntary organisation than younger volunteers are. This can perhaps be because of older people viewing volunteering as more important in their lives than younger volunteers do. Volunteer Match (2007) found that volunteering increases with age and that, as a result of their study, 65 per cent of volunteers under thirty said that volunteering was a highly important part of their lives, while 75 per cent of fifty-five plus said that volunteering is one of the most or a very important part of their lives. Miller et al (1990) found that age is inversely related to volunteer turnover, older volunteers being less likely to leave than younger volunteers are. They also found that, the more convenient the schedule, the more the volunteer will stay with the organisation. Davis Smith and Gay (2005) also found older people bring with them a strong commitment to the organisation, time, and loyalty, and they have a good retention. Brauers (2005) also highlights some of the positive attributes older volunteers can share in an organisation, as shown in Figure 5.12.

Figure 5.12 Older Volunteer, Organisational Benefits



Source: Brauers (2005)

By investigating ways to retain older volunteers successfully, Kouri (1990) identified four areas that, if designed properly from the outset, would help keep older volunteers within the organisation. These areas were to match volunteers and the jobs properly together, to develop useful job descriptions, to design effective training programmes, and to provide a meaningful volunteer recognition programme within the organisation. For the volunteer's part, Kouri (1990) suggests they should initially list all the areas of interest and then narrow the field to their top three choices. The volunteers should identify the skill preference for the chosen task and work out their desired rewards for volunteering.

Fischer and Schaffer (1993, p.209) propose two principles, apparently contradictory, that volunteer organisations should stick to when working with older volunteers. First, that it should be managed as a serious business and have transparent expectations of the volunteers. They should make appropriate investment in providing training and supervision and have proper accounting of the costs of the programs. Second, the program should be managed as though it was a 'gentle' society where volunteers are seen as people as opposed to workers. There should be room for people to express their own creativity and be flexible, in order for the program to follow the highest ethical standards. Fischer and Schaffer go on to point

out that it is possible to have a balance of the two "it is possible to be 'business-like' but not be 'like a business'". By finding the right balance, the older volunteers will remain in the organisation for longer.

To help keep the older volunteer within the organisation, Hendricks and Cutler (2004) found that retention is significantly linked to their view of their role, if the role is meaningful, they will tend to stay within the organisation. Deci and Ryan (1985, p.234) concluded that to retain people in the voluntary sector, organisations should be, "Providing choice…and acknowledging people's inner experience…prompted more of an enhanced intrinsic motivation, and augmented people's confidence in their performance". Clary and Orenstein (1991) found the idea of a match between volunteers to specific situations is significant in maintaining the volunteers. They suggest the effective performance of the given task is more likely to be dependent on the integrity of the fit between the person's skills, their capability, and the actual requirements of the specific voluntary activity.

To help retain older volunteers, opportunities should allow them to carry on with the job they were doing in their careers if this was what they enjoyed doing. It should also allow for a variety of different opportunities, if the person wishes to do something completely different from what they did in their careers. In addition, the more difficult the volunteer task is, the more likely the volunteer will have satisfaction in the organisation and remain. A harder task produced better performance from the volunteer rather than an easy task (Arella, 1984). It is assumed that responsibility, recognition, promotion, and positive relationships with feedback and monitoring can make an important contribution to a long and high-productivity outcome (Burke and Lindsay, 1985). Brodie et al (2009, p.32) found that, "Continuation appears likely if participants 'are managed in an explicit, developmental, supportive and appreciative way". By contrast, they found that if is the organisation exhibits poor management or supervision, lack of training, undervalues and overburdens volunteers, this will cause disillusionment with the organisation's work and make the older volunteers leave.

With the voluntary sector having a high turnover of volunteers, this could make the voluntary organisation apprehensive in giving training to their new volunteers in

some cases. On the other hand, if the new volunteer has no training, they may be performing an inadequate service for the voluntary organisation. Further, if the volunteer does not feel proficient in their role because they are ill-equipped, they may leave because of frustration with the organisation. Therefore, the unwanted circle goes on. Hoffman (2008) found that older adults in volunteer jobs frequently report there was a lack of capacity and training opportunities in order for them to use their skills fully. This provides a potential reason to leave the organisation.

In contrast, volunteer organisations that do provide inductions and formal training have a lower turnover of volunteers. Barlow and Hainsworth (2001) found that volunteer organisations that have formal training and orientation programs for the new volunteers will experience fewer turnovers among the new volunteers than those without these programmes. Warburton and Cordingley (2004, p.72) pointed out that voluntary organisations have an obligation to the older volunteers, "Organisations have a responsibility to behave ethically, and to ensure that opportunities are available for older people. It is worth investing time and resources into training and supporting older people, because they generally give more time and remain with organisations longer".

Other ways to help retain older volunteers within the organisation is to make them feel they are made to be part of the organisation. This can include keeping them informed of any relevant news regarding the organisation. This can be done through newsletters, regular meetings, through internet or an intranet, etc. If the older volunteers feel part of the organisation, the probability of stimulating and retaining the volunteers can be relatively high. Forster (1997) found the best way to keep older volunteers engaged is to make sure they are kept informed of any developments in the organisation, allowing some degree of involvement in the managing of the organisation, actively listening to the older people's points and suggestions, and allowing them freedom in running some of their projects where possible. There needs to be a balance of flexibility, while at the same time maintaining the necessary rules to run the voluntary organisations, if the older volunteers are to remain.

Wilson and Pimm (1996) found there is a greater urgency in training the managers on how to manage older volunteers. Further, Hobson et al (1996, p.1) suggest that

retention of volunteers will greatly improve by implementing a volunteer-friendliness model, "By developing and implementing volunteer-friendly policies and programs, agencies would directly benefit in a number of important ways, including expanded availability of volunteer hours, improved volunteer commitment and productivity, enhanced agency functioning". The model is built around four areas (or processes): volunteer attraction and recruitment; initial interaction with agency staff; volunteer utilisation and assignment; and post-volunteering follow-up.

The voluntary sector in Scotland sees the turnover of older volunteers as being mainly down to people who join in short bursts; also, because people who come to the organisation have unrealistic expectations of what voluntary organisation is about, rendering them unable to cope with the demands of the role (ScER, 2005). Further, that many of the volunteers who join are not flexible enough, causing a great strain on the sector. It would appear that to maintain retention in the voluntary organisations, they should ensure that older volunteers have been given roles matching their capability, proper training should be given, evaluations performed and appreciation and recognition structures be in place within the organisation. The scheduling should also be as flexible as possible to facilitate older volunteers.

5.4.6 Labour Sector Preferences of Older Volunteers

Older people, who currently participate in volunteering, have different characteristics from previous generations of older volunteers and demand different things. Esmond (2001, p.37) suggests the current older people are no less giving of their time than previous generations in volunteering and their intention to volunteer in the future, but highlights some difference, "...Baby Boomers are more assertive, better educated and more demanding than any generation before them". In addition, Graham (2003) found the older volunteers now view their own time as enormously important to them and for that reason, they require well-organised and quality volunteer opportunities and have no time for low quality or disorganised voluntary organisations.

Hoffman (2008, p.2) suggests that areas of interest to the older volunteers are where they can use their professional skills they have built up over their working lives, but points out that more often older volunteers are found in "...roles with lower skill and

responsibility levels". Price (2007) found that older volunteers are mostly in areas involving helping other older people. Tang (2008) found that older people are more likely to volunteer in religious, educational, political, senior citizen organisations and that education impacts on the volunteer's choice of organisations. Rochester et al (2002) found that older volunteers' area of interest will have a religious connection. They found that older people are more likely to say they volunteer because of their religious concerns, and that they tend to be more active in their religious venues; therefore they are more likely to volunteer for churches and other religious organisations. Kouri (1990) and Onyx and Warburton (2003) found the majority of older volunteers belonged to religious organisations.

The Scottish Household Survey (2010) also shows the highest area where both male and female older adults performed voluntary activity was in religion. For older female volunteers, the second area was found in the area concerning the elderly followed closely by the area of health, disability, and social welfare. For Scottish older male volunteers, the second highest area of volunteering was found in the health, disability and social welfare area followed closely again by the area concerning the elderly, as it can be seen in Table 5.9. This trend is evident in over the past decade in Scotland, according to data published by the annual Scottish Household Survey reports.

Table 5.9 Areas of Volunteering, Older Volunteers, Scotland

Adults who did voluntary work in the last 12 Months	***60–74***	***75+***
Children's activities associated with schools	10	4
Youth/children	11	2
Health, disability and social welfare	19	19
Religion	26	44
Local community or neighbourhood groups	15	13
Sport/exercise (coaching or organising)	10	6
Hobbies/recreation/arts/social clubs	17	10
The elderly	18	20
The environment, animals	5	0
Education for adults	4	2
Citizens groups	6	7
Safety, first aid	1	3
Justice and human rights	3	-
Politics	2	2
Trade union activities	1	-
None of these	4	8
Base	***478***	***165***

Source: Scottish Household Survey (2010)

A number of organisations in Scotland have a high proportion, if not all, of older volunteers. Two examples of this are the Retired and Senior Volunteers Programme (RSVP) and the Woman's Royal Voluntary Service (WRVS). The Scottish Government (2006a) states that it encourages and develops the 50+age group to volunteer and provide funds to the Community Service Volunteers for their Retired and Senior Volunteers Programme (RSVP). The RSVP found that this funding has facilitated the sharp increase in the number of volunteers since 2001, "We recruit from the fastest-growing section of the population - the over fifties" RSVP (2005, p.1). The main areas in the RSVP is involved are health and social care, schools, crafts, heritage and environment.

The RSVP has a National Forum on Older Volunteers that allows organisations utilising the older volunteers, to share their experiences of what works well, and for outside organisations to attend and inform the committee of any opportunities for

older people. In one such meeting[10], a presentation was given by Sport and Culture Scotland on how older volunteers can be involved in the 2014 Commonwealth Games held in Glasgow. The RSVP also has Development Officers around Scotland whose job is to find older people who have been overlooked by society, even though they have skills and experience to offer the voluntary service. The RSVP currently has over 1,500 volunteers.

The Woman's Royal Voluntary Service (WRVS) is a voluntary organisation that provides services for the UK as a whole. According to the WRVS (2007), in Scotland, the WRVS's aim is to assist people in maintaining their 'independence and dignity in their homes and communities', especially as they age. The WRVS wants to provide the practical support with their volunteering activities to ensure the older person's life is made better and is more fulfilled. The organisation has over 12,000 local volunteers in Scotland (11,000 are aged 50+) and run more than 250 community-based projects for housebound and older people. They have an excess of 60 hospital services for patients, visitors, and staff, and have 230 emergency service teams to help communities stricken by disasters.

The WRVS's (2008, p.2) social impact report was produced, examining the impact the organisation is having on its beneficiaries and volunteers. The report found the WRVS is achieving its goal, which is to, "...help older people get more out of life by providing practical support through the power of volunteering". The report found the WRVS has made life a lot better for 70 per cent of the people interviewed (520) who had received their service. The report points out this figure increases to 90 per cent when including people who say their life is slightly better by using the WRVS service. The report also found the WRVS has influenced people's lives through emotional and wellbeing benefits in the form of increased confidence, feeling healthier, reduced isolation, and greater independence.

[10] Meeting of the National Forum on Older Volunteers, Chaired by Bird Cullen (head of RSVP Scotland), 10th December 2009, Glasgow City Chambers.

The WRVS (2008, p.3) report further states that the emotional benefits are actually tangible and practical, such as 86 per cent of their beneficiaries said they received a practical benefit from them, 71 per cent said the WRVS' volunteers treated them with great dignity and respect, 73 per cent said they felt less isolated as a result of the WRVS's work, 63 per cent said they had improved confidence thanks to its service, 57 per cent felt they were more independent, and 46 per cent felt healthier because of the service they received. The report also found the older volunteers themselves received some benefits as a result of volunteering with the WRVS, with 40 per cent saying their life is a lot better and 75 per cent saying their life is a lot or slightly better.

Overall, older people tend to volunteer with religious organisation and associations, which advances the wellbeing of older people. Davis Smith and Gay (2005) found that older volunteers have a good understanding of older people issues and develop a good relationship with people of their own age group. Correspondingly, Rochester et al (2002, p.44) found that volunteer organisations with a 'mission or purpose' to advance the wellbeing of older people have a significant advantage in involving older people as volunteers, "Their understanding of the needs and aspirations of older people and their access to existing networks mean they can engage with older people, develop effective methods of recruitment and deploy older volunteers in appropriate roles speedily and effectively".

5.5 Small Sample of Older Volunteers in Scotland

In order to examine the recruitment, motivation, and conditions of work (among other areas) for the older Scottish volunteer, a small survey was created (shown in Appendix B). The sample size was 110 because of both time and financial constraints; therefore, its purpose was only to give a snapshot of volunteering in Scotland. The sample was made up of different organisations for a variety of reasons. Queens Cross Housing Association was chosen as older people are often part of housing committees. The befriending scheme in East Renfrewshire was chosen because of its location as older people have the second highest propensity to volunteer in that area (30.3 per cent). The NHS in Scotland is one of the biggest service users of older volunteers in Scotland and as such, it was important to include

these volunteers. The Ruchill Parish Church was chosen as older volunteers tend to volunteer for religious organisations. The SPRC and the RSVP were chosen as both organisations provide older people with advice and services. In addition, the administration and the management of both organisations are heavily dependent on older volunteers.

The volunteers were located in and around the city of Glasgow, having a multifaceted distribution of deprivation and affluent areas. The volunteers were a mixture of people from very affluent areas, e.g., Bearsden, Newton Mearns, and Giffnock, and from some of the 15 per cent most deprived areas in Scotland, e.g., Pollokshaws, Maryhill and Springburn. The results of this small sample showed the volunteers' age ranged between 54 years of age to 82 years of age, with the average age of the older volunteers being 69 years old. The number of hours volunteered per week ranged from 2 hours to 20.5 hours, with the average volunteer time being around 5 hours per week and the average length of volunteer service was 6 years. There were also a number of reasons given as to why the older volunteers began to volunteer. The main reason was they were asked by a friend (44%), followed by the volunteer themselves scoping out volunteer opportunities (12.1%) and then being asked by the organisations staff (10.2%). One of the most interesting reasons was being told by their doctor they should volunteer.

A choice of three reasons that ranked top was asked to be selected from a list of theory-driven-motivation choices (14 choices and 1 open answer). The main first motivations to volunteer was to help others (51%), the main second reasons was to make them feel useful and productive, and the main third motivation was to keep fit and healthy. The level of deprivation did not appear to affect the decision to volunteer in this sample. There was 39.3 per cent who felt their organisation was of a formal structure while a greater number of volunteers felt their volunteer structure was informal (60.7 per cent); nevertheless, all volunteers were happy with the structure model of their organisation, be it formal or informal, and all felt they received the proper training to perform the volunteer activity. In the sample, 98.2 per cent felt there was a proper match between the voluntary task they do and the voluntary task they wanted to do. Most of the volunteers did not have a higher level

of qualifications. 10.9 per cent considered themselves to have a disability and 13.7 per cent considered their health being not good. The average weekly income of the volunteers was £138 and 93.6 per cent felt that volunteering should not be financially rewarded.

The findings from this small survey are generally aligned with what has been found within the literature discussed, with the exception of the volunteer's education level. This may be because of the sample size not been wide enough to capture the positive association between the education level and the propensity to volunteer. The study findings are drawn from a small sample and it is not possible to know just how much this would reflect the motivation and experiences of older people in Scottish society. If the survey was to be expanded, the inclusion of several more groups such as a larger representation of religious organisations, as well as a wider geographical area covered. From this survey, it would appear that older volunteers in Scotland are neither likely to be driven by private benefit motivation nor by an investment motive. It is more likely that the older volunteers in Scotland are driven by the intrinsic motivation to increase the public good or the relational motivation.

5.6 Barriers to Older People Volunteering

There are a number of barriers to older people volunteering. Increasing the retirement age has implications for older people's propensity to volunteer. This can have both positive and negative outcomes. A decade ago, the UN (2001, p.1) cautioned, that restructuring society to make it more generationally equal should be an objective for all countries. That, from this point onward, policies for older persons, younger persons, and those in between, must be designed with an ageing society in mind, a society where soon, every third individual will be over the age of 60. International, national, and local communities must begin now to adjust and design their infrastructures, policies, plans, and resources.

The redesigning of the public provisions for retirement is in order to produce greater incentives for people to continue to work into old age. It has been suggested that this could bring about intergenerational conflict. There has historically been a notion that governments should enable older workers to retire, thus freeing up places in the labour market (assuming the young and old are substitutes and there is a fixed number of jobs (or lump of labour) within the labour market). Following this line of thought, if younger and older workers are substitutes, then increasing older workers will reduce the number of younger workers, given a fixed lump of labour. There has been inconsistency in research findings concerning younger and older workers being substitutes for each other. Fitzenberger & Kohn (2006) found that by taking account of age, time and cohort effects, employees of different age are found to be imperfect substitutes.

Kalwij et al (2009, p.345) also found no evidence that young and old workers are substitutes for each other and concluded, "Policy changes aimed at increasing employment of older people, for instance discouraging early retirement, will have no adverse effects on youth employment" and further found evidence of the younger and older workers being complements. Hebbink (1993) also found evidence that younger and older workers are complementarily factors of production, meaning that an increase in older workers could create an increase in younger workers. Baker et al (2010) found evidence of younger and older workers being both substitutes and complement. Banks et al (2008) found no evidence of crowding out of younger workers from the labour market by older workers. Overall, there has been not much support for older and younger workers being substitutes for each other. When examining the assumption that there is a fixed number of jobs within an economy, there is again not much support for this theory (Krugman, 2003; Gruber and Wise, 2010). As a result, it would appear that raising the retirement age should not create intergenerational conflict between the younger and older workers. In addition, the idea that younger employment can only come at the expense of the older employment does not hold.

There is an issue in Scotland and in the UK as a whole, surrounding the affordability of the increasing demands for pensions as the country ages. Lord Sutherland (2007)

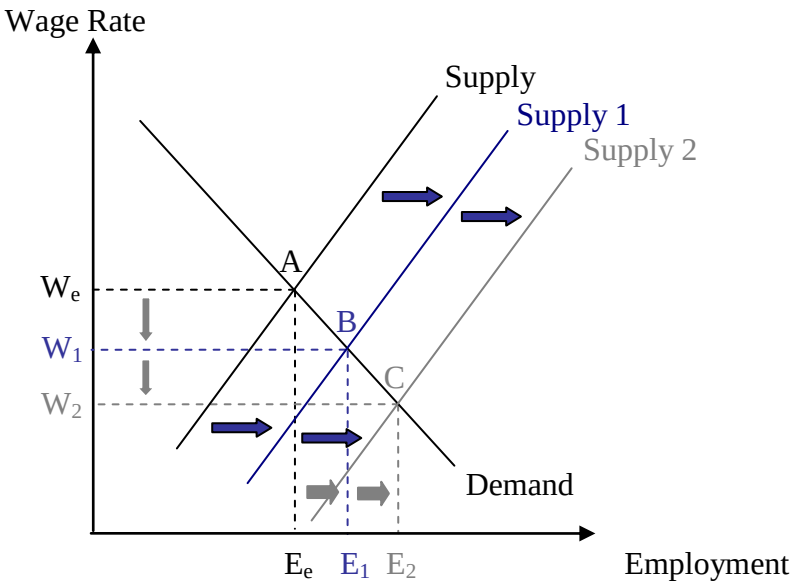
stated older people currently are the most influential customers in the country and the labour market of the future must draw labour from this section of the population if it is to grow. The pension age is currently increasing as it has already been detailed in this chapter. A survey carried out by the Department of Work and Pensions (Scottish Parliament, 2007) showed that a extremely high number of people over sixty years of age (90%) are content to keep providing their supply of labour even as they reached seventy years old. The Centre for Research into the Older Workforce (CROW) (2005, p.6) also found that older people would like to stay in the labour market for longer, "...over half of all workers between 50 and 69 said they would like to continue in work after they formally retire".

In Scotland, 7.7 per cent of people of state pension age are still currently working (Age Concern Scotland, 2010). Further, Scotland's Future Form (2007, p.12) found that leaving employment can generate negative behaviours such as lack of confidence and self-esteem. They also found older people chose to remain "...in employment because, it has provided a key focal point to their lives, helped to build their self esteem, provided a social element and importantly their financial independence". Retaining older workers in the labour market for longer, by increasing the retirement age, could have benefits; indeed, the amount of money that would need to be saved by pensioners now would be reduced, as the retirement time would be shortened. This increase in the amount of disposable income could benefit the economy. There would also be a lowering of the old-age dependency ratio. Although it has been suggested that this lowering of the dependency ratio, as a result of increases in the retirement age, would still not be sufficient to compensate the economy in the future (ONS, 2010b).

By increasing the retirement age, the Scottish Government would be in a position to cut spending because of the reduction of pension provisions. At the same time, the government will have more income tax receipts, as there would be more people working for longer. The negative side to increasing the age eligibility for the state pension is there could be greater downward pressure on the Scottish labour market wage rate, as shown in Figure 5.13. The effect of the ageing population in general, before increasing the retirement age, will be a movement from point A to B, resulting

as a result of the ageing population pushing wages down from W_e to W_1. When the retirement age rises, there is an even greater downward pressure on the wage rate because of further rises in the labour market from the older population, the new equilibrium is found, at wage rate W_2 and employment E_2 (point C).

Figure 5.13 Increasing the State Pension Age (With an Ageing Population)



This only serves to exasperate future labour market conditions in this example. Further, the Scottish Government (2010a) reported that, currently, 47 per cent of children aged 0 to 3 years are being cared for by older relatives. They suggest that any reduction in this resource through increases in the retirement age could have an impact on labour market participation of younger women with children and / or on fertility among younger women, with the reduced availability of informal childcare. In the UK, parents save £50bn per year on childcare, as a result of older relatives supplying unpaid childcare (Scottish government, 2011g). Overall, the increasing of the retirement age can help in some aspects but can hinder others. Further, Loretto and White (2006, p.341) noted "...such strategies are far from straightforward, and may ignore the economic and structural realities of the social and economic geography of Scotland".

In a recent study by Age (2009), it was found that with respect to volunteering, 73 per cent of workers who are about to retire want to take part in voluntary activities

once they have left the paid workforce. In the future, if people are working longer than the current retirement age, this could create a barrier to older people volunteering causing a reduction in voluntary activity. This will leave the Scottish community and public service without the labour supply needed to provide all the service required by a declining and ageing society.

According to the World Volunteer Web (2006, p.1), the biggest group to be affected by the proposed retirement changes is the population of between thirty and fifty years of age. They found in a survey of working people in England, that 70 per cent believed that because their retirement age may be delayed, they will be less inclined to volunteer after they retire "...because they may need to work longer before retirement they will be less likely to volunteer once in retirement...Delaying the retirement age will prevent people from volunteering in later life, potentially robbing the voluntary movement of a huge army of retired volunteers and leaving many public and community services unstaffed".

The Scottish Government (2010a, p.31) also found there could be a negative impact on volunteering by older people with the increase of the retirement age. They point out the older retired people currently are important providers of unpaid care. An implication of raising the retirement age is the lack of availability of such a resource to perform these caring activities. Further, they found that this will affect the voluntary sector, "...retired older people provide a rich source of volunteers across a range of sectors, with this potential pool of volunteers increasing as the numbers in these age groups increase in coming years, although, again, the raising of the pension age may impact on this available pool".

Another barrier to older people volunteering is ageism. Ageism, with its stereotype of older people, can cause older people to lose out in benefits and opportunities in society, simply because of their age. The Scottish Government (2006b, p.28) found that "...too often older people are denied the opportunity to contribute to or participate in society – ageist attitudes and policies, a society which writes them off". Age Concern Scotland's (2010) research found around 29 per cent of older adults reported they experience age discrimination, which is a higher percentage of any other form of discrimination. In Scotland 'The Employment Equality (Age)

Regulations 2006' protects people being discriminated on the grounds of their age, although the provision of service and goods are not included under this protection. The charity Third Age Employment Network (2006) states the cost to the UK per year of age discrimination is £5.5bn in lost government tax and paid unemployment benefits with an additional £30bn in lost productivity.

Further, older people are being excluded from parts of society because of their age. This includes leisure activities, community life, many services, mainstream culture, public places, public debate, employment, and media (Allen, 2008). People in general, in the UK, have indicated they feel age discrimination is common at 51 per cent, more than the EU average at 46 per cent (Allen, 2008). According to the Scottish Government (2011g), people are still being wrongly judged based on their age, not experience, abilities, or personality. In addition, 19 per cent of people felt they had been treated differently because of their age, while 23 per cent felt they had treated someone differently because of their age.

In the voluntary sector, occupational health and safety, risk management, and insurances are influencing the managing of older volunteers. Insurance companies are also influencing the decision to take older volunteers because of financial conditions of the insurance policies. Hatton-Yeo (2006, p.4) found, "There has been significant debate that insurance companies have been imposing age restrictions that have lead to organisations having to retire volunteers typically at age 70 or 75. This has been accompanied by a sharp increase in insurance premiums for Voluntary and Community Sector organisations in the last five years".

The insurance covers, used by voluntary organisations, are liability insurances (employer's and public). This insures against liability relating to negligence or breach of the duty of care, and has no age restrictions. Employer's liability covers accidents, injuries, etc., to an employee because of the organisation's neglect or breach of health and safety law. Public liability protects against third parties including beneficiaries and the general public. Personal accident insurance is a form of employer's liability insurance but where there is no blame, it has an age limit of 16–75 years. Travel insurance and motor insurance also has an age limit. The voluntary organisations can extend their cover for the volunteers over 75 year olds, at

a cost to the organisation. Unell (2006) found there has been a sharp increase in insurance premiums, some by as much as 700 per cent. She noted there were a number of volunteers and trustees concerned with potentially being sued, especially among volunteers aged 45+.

Sinclair (2006) suggests there is not enough being done to address the indirect age discrimination within the voluntary sector. The study found the number of voluntary sector organisations who have explicit upper-age has reduced. The study found not enough is being done to eradicate indirect discrimination. It was found the lack of including the volunteers in the scope of the age discrimination law has prevented the social inclusion of older people in volunteering. The study concluded that age discrimination in volunteering can only impede any volunteering strategies.

Low income can also be a barrier to older people volunteering. According to the Scottish government (2010b), 16 per cent (150,000) of all pensioners in Scotland are living in relative poverty (before housing costs), with 9 per cent of all pensioners living in absolute poverty (before housing costs). Age Concern Scotland (2010) found that in Scotland, 85 per cent of single pensioners live on an annual income of £15,000 or under, 54 per cent of single pensioners live on an income of £10,000 or under, and 50 per cent of pensioner couples live on an annual income of £15,000 or under. Poverty can be a significant barrier to older people volunteering. Woolvin (2010) found that in Scotland, people living in deprived communities are in almost all cases found to have lower levels of formal participation in volunteering than people living in more affluent areas, with older people on low income experiencing poorer health with limited social networks and having a greater chance in being socially isolated.

Social inclusion is an important aspect of older people being able to volunteer. Craig's (2004, p.112) research found that a substantial number of older people do not enjoy the security of an adequate income, which prevents them from experiencing some of the basic rights of being citizens, being part of society, and engaging in activities including volunteering, "In failing to receive that income, older people are denied some of the fundamentals of citizenship important to their inclusion in society: independence and mobility, preservation of their own identity and dignity,

choice and control, and the ability to participate as fully as possible in society on terms of their choosing".

The Scottish Household Survey's (2007, p.130) report shows that people who have a low household income are less likely to volunteer than those who have higher household income. It also shows that, as older people have a greater probability of having a low income if they are on a minimum state pension, then this is likely to affect their propensity to volunteer "…older people are more likely to have lower household incomes therefore…will in part reflect the fact that people aged 75 and over are also the least likely to provide unpaid help". This shows that even though older people aged 75+ have still several years of good to fairly good healthy years ahead of them, their financial situation may prevent them from volunteering.

Arella (1984) found that in dealing with financial barriers in the form of unpaid expenses, this can have a negative impact on the ability of older people on low incomes to volunteers. If the voluntary organisations do not reimburse the volunteer for their expenses, it will prove to be a barrier for older people. Income and volunteering appear to be negatively correlated, which may account for the general findings that people who volunteer react negatively to financial incentives (Schaffer, 1993; Eisenberger and Cameron, 1996; Frey and Götte, 1999; Deci and Ryan, 2000; Carpenter and Knowles Myers, 2008), which could be partly due to volunteers already being in receipt of a high level of income.

Health can be a barrier to older volunteers. Through time, they will have less energy than younger people have, become frail, and experience more health problems than younger volunteers will. It is not only an issue with their health; indeed, there are a significant number of older adults looking after spouses with limitations on their daily life, which can be a barrier to older people volunteering. Volunteering Canada (2001) warns that voluntary organisations in health related volunteering, for example, could see a shortage of volunteers because of older people having to look after ageing family members particularly in a time when the health care system is not providing a full range of services. Choi et al (2007, p.118) found that currently, in spite of this, many older adults in this position still participated in volunteering: "A significant proportion of spousal caregivers, despite their commitments to spouses

with ADL (impairments to activities of daily living) and IADL (instrumental ADL) limitations, engaged in volunteering for formal organisations and /or informal volunteering, providing help to persons in their social networks".

Lack of Information can also prevent older people from volunteering. Often, older people lack information on voluntary places or are unable to get access to the information. Older people have reported there is a lack of information available to them regarding volunteering positions. Wilson (2000) points out the older people have a lower social network available to them once they retire and that this can be a barrier to gaining the proper information about where and when volunteering places are being sought, concluding that a withdrawal from the labour market weakens social integration. In a focus group meeting (2011)[11], one of the main findings from the discussions was the lack of information on volunteer activities. With the general trend being, the older volunteers present had 'stumbled' into their current post and that, on numerous previous occasions they had been asking around their areas for volunteering positions without any being available. This delayed them from volunteering for some time, with one participant delayed for nearly 1 year because he could not find any information on volunteering in his community.

Household dynamics can be barriers to volunteering. Kulik (2002) found that volunteer work, like paid employment, affects marital dynamics in older people. The research found that, if one partner volunteers but the other does not, this could bring tension and jealousy into the relationship, particularly so, given that social contacts tend to decrease after retirement. Kulik suggests the best outcome would be if both volunteered. This was found to 'enrich' the relationship. Older volunteers can lack self-esteem and self-confidence in their own abilities and skills, feeling they have nothing to offer to the voluntary organisations. This lack of confidence is building up their own barriers preventing them from volunteering (Scottish Government, 2006b). Transportation can also be a potential barrier to older people wishing to volunteer.

[11] Focus group session with older volunteers from Queens Cross Housing Association, held at Windsor Community Hall, Glasgow on 18th July 2011

Lack of transportation is more likely to be given as a reason for older people not volunteering than any other age group (Fischer and Shaffer, 1993). This is especially the case in the rural areas of Scotland. In addition, older volunteers are unwilling or unable to volunteer when it is dark because of travelling issues (Fischer and Schaffer, 1993).

Lack of choice in the volunteer role can be a barrier, as older people are often being offered low-level volunteer activities, as noted previously. It can be difficult for older people to find the right opportunity that fits their skills and experience. Volunteer Match (2007, p.26) found that volunteer's age is negatively correlated with an interesting volunteering opportunity, "65+ are three times less likely to find an opportunity that interests them than those 40 and under". Older people can also find it difficult to volunteer because of lack of choice in the volunteer organisational structures offered. There may only be opportunities in formalised structures, which do not usually attract older volunteers, as they are managed like a for-profit organisation (Davis Smith and Gay, 2005). In the small survey conducted for this research, it was found that the structure model of the organisation did not seem to matter to the older volunteers.

Inter-changeability can bring with it issues of conflict between the paid and voluntary workers, resulting in older volunteers being reluctant to volunteer. In their study, Handy et al (2008) found that some volunteer organisations were replacing paid staff with volunteer staff, some were replacing volunteers with paid staff and some were doing both. They also found that, even when there were 'distinct domains' for paid staff and for volunteers, there were some tasks they describe as interchangeable and that this inter-changeability occurred within 66 per cent of the voluntary organisations they examined. There can be problems if volunteer roles are replaced by paid employees and vice versa, as this can cause tensions, especially if they are doing the same job side by side. Ellis (2008, p.1) pointed out that as the change in either direction is being carried out, problems begin to build up slowly but will eventually come to a head, "Suddenly the situation evolves in which employees and volunteers are doing the same work at different times, and sometimes side-by-side. That's when the real trouble begins". Pearce (1993) concluded that when

employees and volunteers are doing comparable jobs, this will eventually undermine the legitimacy of both inherently.

Intergenerational conflicts can also be a potential barrier to older people volunteering if the volunteer setting is not designed to facilitate mutual respect. Volunteering between generations can bring undesirable effects as each generation struggle to understand the other. It has been suggested that this is because of the lack of intergenerational volunteering opportunities (Volunteer development Scotland, 1996 and Scottish Government, 2007a). In addressing the issue of lack of intergenerational contact, the Scottish Government (2007a, p.17) has created and funded the Scottish Centre for Intergenerational Practice (SCOTCIP), which is managed jointly by the University of Strathclyde and the Community Service Volunteers organisation (CVS). Their aim is to "Encourage involvement to benefit all of Scotland's generations, by working, learning, volunteering and living together". They do this by offering support to individuals, organisations and businesses wishing to get involved in intergenerational work. One of the main areas for intergenerational activity is to help voluntary organisations to facilitate younger and older volunteers to work together and allow them to share their experiences (SCIP 2007).

5.7 Conclusion

In this chapter, the strategic objective was to build up an understanding of the older person as an individual and in terms of being a volunteer, and to gain an insight into the environment surrounding this older population. Scotland in ageing but this is not in isolation, the world as a whole is ageing. The examination of the older population in Scotland has shown that it would be incorrect to assume this group are simply troublesome for society. The older population have numerous positive attributes to offer. In the role of volunteering, the older population has been shown to be dynamic, highly active, and adding real value to society. It has been found that volunteering begins to decline by the mid-70's and that older volunteers tend to be highly educated and skilled, have a high level of income, and are more likely to be volunteers in retirement if they have a history of volunteering. Further, older volunteers will donate more hours to the voluntary activity than younger volunteers will, and are assumed to be more committed and loyal to the organisation.

There are numerous motivational factors affecting the older person's decision to volunteer. The motivations for older volunteers are found to be similar to other adult volunteers; however, they are less materialistic (less interested in the investment motive). The older volunteers are more likely to volunteer in order to put some structure on their free time and for altruistic reasons, e.g., when they see a need to help in the community. In addition, by volunteering, it allows them to use and share their skills and knowledge they have built up over their lifetime. Meeting friends was also one of the main motivations to volunteer. Numerous studies have found a link between volunteering and improved wellbeing for the older volunteer. It has also been found that older volunteers are more likely to be satisfied with life, have more confidence, and are more likely to feel their life has a purpose and direction than non-older volunteers. Further, that volunteering allows older people to retain their self-esteem and serves a personal need for them to return something to society.

An important element in increasing the older volunteer labour supply appears to be preparation. Older people need to be aware of the opportunity to volunteer in retirement during their working life; therefore, volunteering can be viewed as the next natural step after paid work ends. It has been found that, one of the best times to approach the older person is just before or at retirement, if they have no history of volunteering. It has been highlighted that it is not only the older population that needs to be prepared for the future demands, but that voluntary sector needs to be prepared also.

A sufficient variety of roles for the growing older volunteers is required because of the increasingly demanding nature of the older population. These roles should allow the older volunteer's motivations to be realised, as one large barrier to older people volunteering is the difficulty in finding the right opportunity that fits their skills and experience. The voluntary environment needs to be more age-friendly and use management style that suits this audience, which is organised but not formalised, in order to attract and retain older volunteers. This is a difficult balance because of some voluntary organisations having to be managed more like a for-profit organisation to secure funding and tenders.

Recruitment was found to be one of the main priorities for the voluntary sector. The most important point in recruitment is to realise the older population is not a homogenous group and that it is far more efficient to target different groups within the older population. The most effective tool in the recruitment of older volunteers is word of mouth, although this can result in a homogenous group within an organisation as people tend to associate with other people who are similar to themselves; therefore, the variety is not as it potentially could be within the organisation, causing it to grow in one direction.

There are many barriers to older people volunteering including ageism within society and government policies such as extending the retirement age. With older people who are on a low fixed income, volunteering can be an unrealistic option. In addition, the older person's health can cause a barrier to volunteering and can make travelling a barrier. Conflicts can arise between generations in volunteering, also between paid staff and volunteers. Another barrier preventing older people from volunteering is a deficiency in the available information and indeed choice regarding the activities available. Older volunteers have also been found to lack confidence in their own ability, erecting their own barriers. Removing these barriers can help ensure the current trend of the increasing numbers of older volunteers will continue.

Chapter 6 Scotland's Voluntary Sector

6.1 Introduction

The focus of this chapter is to gain an understanding of the environment of the Scottish voluntary sector and the volunteers that participate within the sector. Statistics on volunteering in selected countries will be examined in order to provide contrast for the Scottish voluntary sector. Then, the Scottish voluntary sector will be investigated, in terms of both financial and human resources, as well as the sector's infrastructure. Finally, models measuring the value added by the voluntary sector will be discussed.

The voluntary sector and the volunteer labour is an important and valuable resource in the Scottish economy. This resource provides economic value by delivering services at less than market prices, as well as a double utility, as both the volunteers and the beneficiaries gain utility from its activities. Volunteers can be looked upon as people who are maximising utility by allocating their time in a voluntary way. This is carried out in the areas of education, health care, advice, and social care, and provides to the most in need and vulnerable people in society. In doing so, it is a productive resource in the Scottish labour market, with the power to change the economic environment in Scotland.

There are many questions being asked about the Scottish Government's ability to provide all the future public provisions that will be required, given the future demographic issues of an ageing and eventually declining population. Along with this, there is also an increasing lack of confidence in the private market's ability to provide care and social services in Scotland. For these reasons, the voluntary sector needs to be examined to ascertain its ability to bring social-economic benefits to society, given the Scottish current and future demography.

The Scottish Government recognises the voluntary sector plays a compensatory role in society. It states that it cannot meet all the challenges that the country faces in the early 21st Century by itself and highlights the need to create new partnerships with the voluntary sector (Scottish Government, 2005b). The voluntary sector has

established itself as an important option, as opposed to the public and private sectors, in delivering public services to the growing older population, for example, and it can help reduce the government's public welfare spending bill. Roy and Ziemek (2001) found the voluntary sector has increased in importance because of changing demographic trend such as the ageing population. They found that policy makers are turning to the voluntary sector more often as a possible solution.

6.2 Voluntary Sector in Other Countries

When examining the number of volunteers over the world, Salamon et al (2011a, pp.219–239) found that,

> Nearly 1 billion people throughout the world volunteer their time through public, nonprofit, or for-profit organizations, or directly for friends or neighbours, in a typical year, making 'Volunteerland,' if it were a country, the second most populous country in the world, behind only China...The 'Volunteerland' economy would be the seventh largest in the world, behind the US, Japan, Germany, China, the UK, and France

Examining the voluntary sectors in some countries can be difficult, as data collection can often be scarce, out of date, or even non-existent. This makes cross-national comparisons between the voluntary sectors in other countries especially difficult. In addition, there is not a standardised methodology in place each country has accepted to evaluate their voluntary sector. As Salamon et al (2008) found, the few countries that do produce volunteering data use significantly different methodologies, which, in turn, makes comparison difficult or impossible.

Further, the dimensions that are said to be associated with the development of the voluntary sector (path dependency) include the level of economic development, the extent of government spending, the countries religious traditions, the legal framework associated with voluntary organisations, the level of social-cultural diversity and cultural, and countries historical patterns of development (Salamon et al, 2004). As these dimensions are all different, the voluntary sector in each country has grown at different rates. Research carried out by Salamon (2010, p.1) found there has been a worldwide upsurge of voluntary activity in recent decades:

> ...significant popular demands for greater opportunity, dissatisfaction with the operations of both the market and the state in coping with the inter-related social and economic challenges of our day…has focused new attention, and new energy, on the broad range of social institutions that occupy the social space between the market and the state.

Salamon (2010) researched the volunteer workforce (paid and volunteers) as a percentage of the economically active population in forty-two countries. The report investigated a selection of countries they class as developing, developed, and in transition[12]. Overall, 53.5 million people were found to be involved in the voluntary sector workforce, including 59 per cent of paid employees and 41 per cent of volunteers, and, on average, the volunteer workforce accounts for 5.6 per cent of the economically active population.

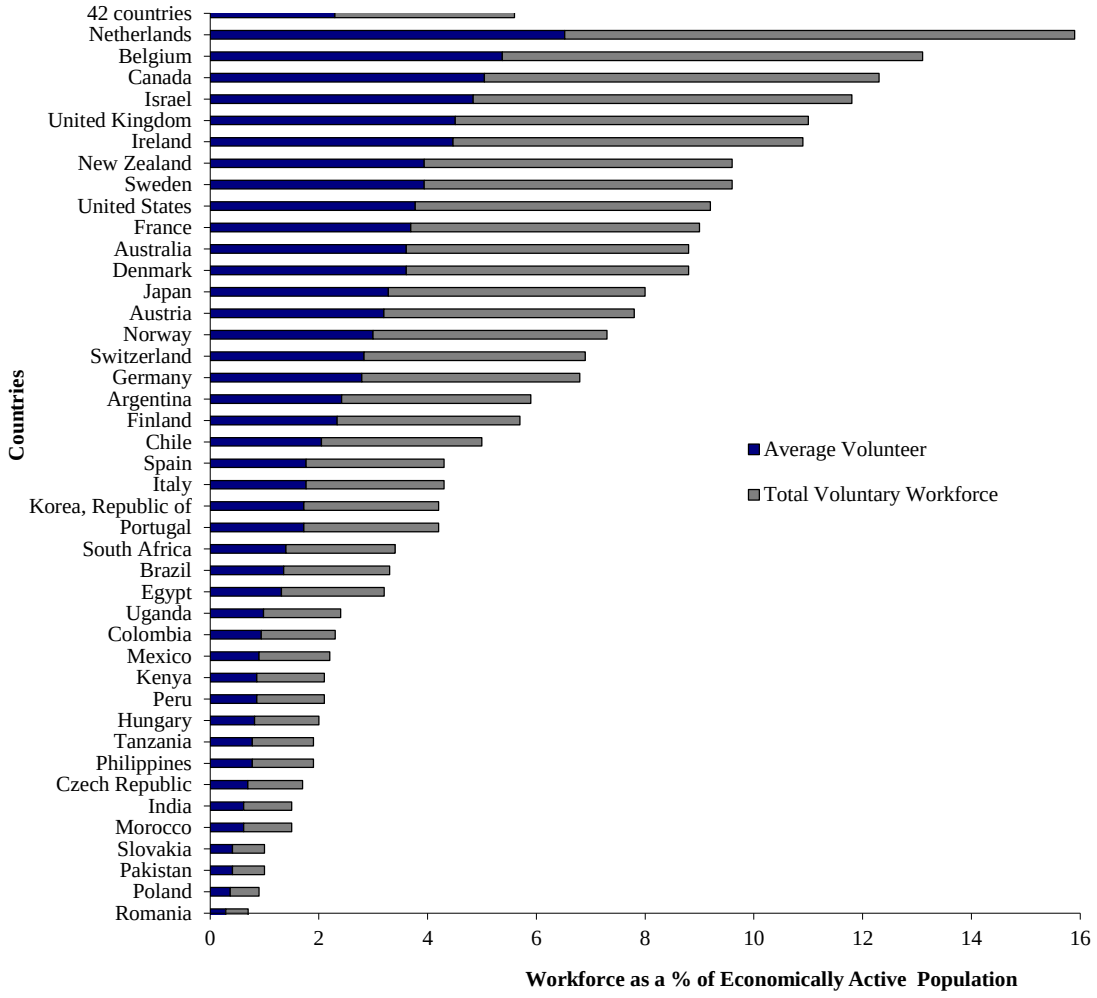
The results in Figure 6.1 show that, overall, the developed countries have a higher rate of volunteer participation, compared to the economically active population (8.2%) or to the developing and transitional countries put together (2.3%), with the highest proportion found in the Netherlands (15.9%) and the lowest proportion found in Romania (0.7%). The volunteer participation rates, compared to the economically active populations for both the developed and developing / transitional countries, have increased since the original study by Salamon et al, (2004). In 2004, the rate of volunteer participation in developed countries was 7.4 per cent, compared to 1.9 per cent in the developing/transitional countries.

By examining the difference between the two periods (2004 and 2010), Salamon (2010) found that Romania, Tanzania, Peru, and United States have exhibited only a small percentage point drop in the volunteering sector workforce, while Pakistan, Spain, South Africa, Kenya, Philippines, and Morocco exhibit no change in their

[12] Developing countries: Argentina, Brazil, Columbia, Egypt, India, Kenya, Mexico, Morocco, Pakistan, Peru, Philippines, South Africa, Republic of Korea, Tanzania, Uganda, and Chile. Transitional countries: Czech Republic, Hungary, Poland, Romania, and Slovakia. Developed countries: Australia, Austria, Belgium, Finland, France, Germany, Ireland, Israel, Italy, Japan, Netherlands, Norway, Spain, Sweden, UK, USA, Portugal, Denmark, Switzerland, Canada, and New Zealand

volunteer sector workforce, compared to the economically active population. All other countries show an increase in percentage points for their volunteering sector workforce. The biggest increases have been Israel and Japan with both having a 3.8 percentage point change, followed by the UK, Sweden and Australia, with a 2.5 percentage point change.

Figure 6.1 Voluntary Sector Workforce as a Percentage of the Economically Active Population (EAP), 42 Selected Countries



Source: Salamon (2010)

In an attempt to encourage volunteer participation, 2011 has been made the 'European Year of Volunteering' by the EU Cultural Ministers in Brussels. The theory behind this was to increase public, business, and governments' awareness of volunteers in Europe and the impact they have. It was designed to highlight good practices, legal frameworks, and the need for a voluntary infrastructure at all levels

within the sector. The aim was also to help break down some barriers to volunteering in Europe, and motivate people to join the volunteer network.

A number of individual countries will be examined briefly, taken from a selection of international and European countries. The countries selected include the United States of America and Australia for an international perspective, then, for a European perspective, Italy, Spain, Slovakia (as a post-soviet country), and England (for a perspective of what is happening in different countries within the UK).

In the USA, a study carried out by the United States Department of Labour (2009) found around 61.8 million people volunteered (or 26.4 per cent of the American population). Men volunteered at a rate of 23.2 per cent and women volunteered at a rate of 29.4 per cent, these results have been similar in recent years. They found that, across the age groups, women were consistently volunteering at a higher rate. The age group that volunteered most was 35–44 years, at a rate of 31.3 per cent. The age group that was the least likely to volunteer was the people in their early twenties, at a rate of 18.6 per cent. The percentage of white volunteers was 27.9 per cent, blacks 19.1 per cent, and Asians 18.7 per cent. In addition, the American volunteer is more likely to be married.

The United States Department of Labour's (2009, p.4) report also found a positive correlation between education and volunteer participation, with 42.2 per cent of people aged 25+ years who were college graduates, 18.1 per cent who were high school graduates, and 9.4 per cent of the volunteers who had less than a high school diploma. The report found that educational attainment also influenced the types of activities the volunteers performed, "College graduates were more likely than those with less education to provide professional or management assistance or to tutor or teach. They were least likely to collect, prepare, distribute, or serve food; engage in general labour; or be an usher, greeter, or minister". In investigating American volunteers who volunteer abroad, McBride and Lough (2008) found the profile tended to be white, highly educated, and not in full-time employment. Most of them were young and did not have any children.

In Australia, the Australian Bureau of Statistics (2008) found that 3.1million Australians (or 21 per cent of the population) volunteered regularly, giving 646 million hours. Men volunteered at a rate of 19 per cent and women volunteered at a rate of 22 per cent. The females most likely to volunteer were aged 35–44 years, accounting for 32 per cent, followed by the 45–54 years age group, accounting for 24 per cent. The female volunteers supplied their labour roughly by equal amounts between sporting organisations, education and training organisations, religious organisations, and community or welfare organisations, while more than half the men volunteered within the area of sport and physical recreation. Volunteers tended to be employed and highly educated.

In Italy, according to the European Centre for Volunteering (2006), the geographic volunteer participation rate showed that 60 per cent of volunteers were from the North (with 31 per cent from the North-East and 29 per cent from the North-West), 19.3 per cent in the Centre of Italy, 20.7 per cent in the South. Health care and social assistance are the areas with the highest numbers of volunteers. The voluntary organisations had 12,000 employees and 826,000 volunteers. The percentage of male volunteers was 54.4 per cent and women volunteered at 45.6 per cent. Most were from the age group 30–54 years, accounting for 41.1 per cent. The highest increase in numbers in recent years has been from the older volunteers, accounting for 36.8 per cent. The social economic statuses of the Italian volunteers show that 52.2 per cent are employees, 29.5 per cent are retired, and the remaining 18.3 per cent encompass students, housewives, unemployed people, and others. Only 12.8 per cent of Italian volunteers had degrees, 44.4 per cent had upper school degrees and 42.8 per cent had a lower school degree. Overall, women volunteers were more educated than men volunteers were.

A report from the European Centre for Volunteering (2005) on Spain shows the voluntary work carried out 253,599 full-time equivalent jobs. The report also shows that females represent 57 per cent of volunteers and males represent 43 per cent. The average age of a Spanish volunteer is 25 years old. The highest age group to volunteer is the 18–29 year olds, accounting for 57 per cent, followed by the 30–45 year age group with 16 per cent, and the 60+ volunteer with 6 per cent, where the

least amount was carried out. The social economic statuses of the Spanish volunteers show that 34 per cent are students, 31 per cent are employees, 12 per cent are retired, and 9 per cent are either unemployed or housewives. In addition, 76 per cent of volunteers have educational qualifications, which is unsurprising given that the majority of volunteers are students. The medium and high social classes favour volunteering in cultural, sports, and leisure organisations, while the medium-low and lower classes favour volunteering in social, civic, and religious associations. The report suggests the Spanish volunteer is motivated mostly by personal satisfaction (38.5%), then by moral obligation (33%); finally, by getting experience, training, and acquiring skills (28.5%).

Before investigating the voluntary sector in Slovakia, it is important to understand the background of post-soviet countries. By investigating volunteering behaviour in post-soviet countries in Europe, e.g., Poland, Czech Republic, Slovakia, and Hungary, it has been suggested by Williamson (2006, p.153) that the idea of volunteering is not in the forefront of many people's daily lives, "...volunteering still has very bad connotations…for it recalls the communist ideology where each citizen should be involved in community improvement and should do something beneficial to society". Czerwinska (2008, p.1) concurs with this, "In South-Eastern, Central and Eastern Europe, there are still many negative connotations and misconceptions about volunteering because of past communist obligatory 'community work' or 'voluntary' war soldiers. Many people believe volunteering to be 'working for no money', therefore working for nothing". In spite of that, a growing number of younger people take part in volunteering in a number of the post-soviet countries such as Poland and Croatia (Czerwinska, 2008).

The European Volunteer Centre (2009) found that, in Slovakia, around 25,133 people volunteered annually, giving a total of 2,115,572 hours. There are around 143 voluntary organisations registered at the Virtual Volunteer Centre in Slovakia. The European Volunteer Centre (2009, p.17) report shows that, in Slovakia, females represent 52 per cent and males 41 per cent of volunteers (7 per cent did not specify gender). Young Slovakians under thirty years old represent 70 per cent of all volunteers, meaning 30 per cent is represented by all other ages. The people of

Slovakia favour financial contributions as opposed to being directly involved with a volunteering task, 10 per cent would volunteer and 90 per cent would give money, "The involvement of the Slovakian people in volunteering remains low and volunteering has to struggle with low prestige and a lack of attention". According to this report, the development of the Slovakian Volunteering has been slow because of the law, which does not define volunteering clearly, creating legal gaps in the status of volunteers. There is limited finance available for the voluntary sector. The sector is usually financed through a small number of government grants or by donations, both being highly competitive.

In England, Clark et al (2010) reported there were around 171,074 voluntary organisations with an income of around £35.5bn and an expenditure of £32.8bn per year. The voluntary sector employs 668,000 people, of that 63 per cent are females and 37 per cent males. According to Drever (2010), 42 per cent of females and 39 per cent of males volunteered. Volunteering by age groups showed that 24 per cent of the 16–25 year olds volunteered, 21 per cent of the 26–34 year olds, 28 per cent of the 35–64 year olds, 30 per cent of the 65–74 year olds, and 20 per cent of the 75+ year olds. Education levels are high amongst the volunteer workforce with 38 per cent possessing a degree or equivalent (contrasting with 37% in the public sector and 19% in the private sector) and 34 per cent had a college level or equivalent qualification. Volunteers tend to be from higher levels of social-economic groups. The average hours volunteered was 12.6 hours per four weeks.

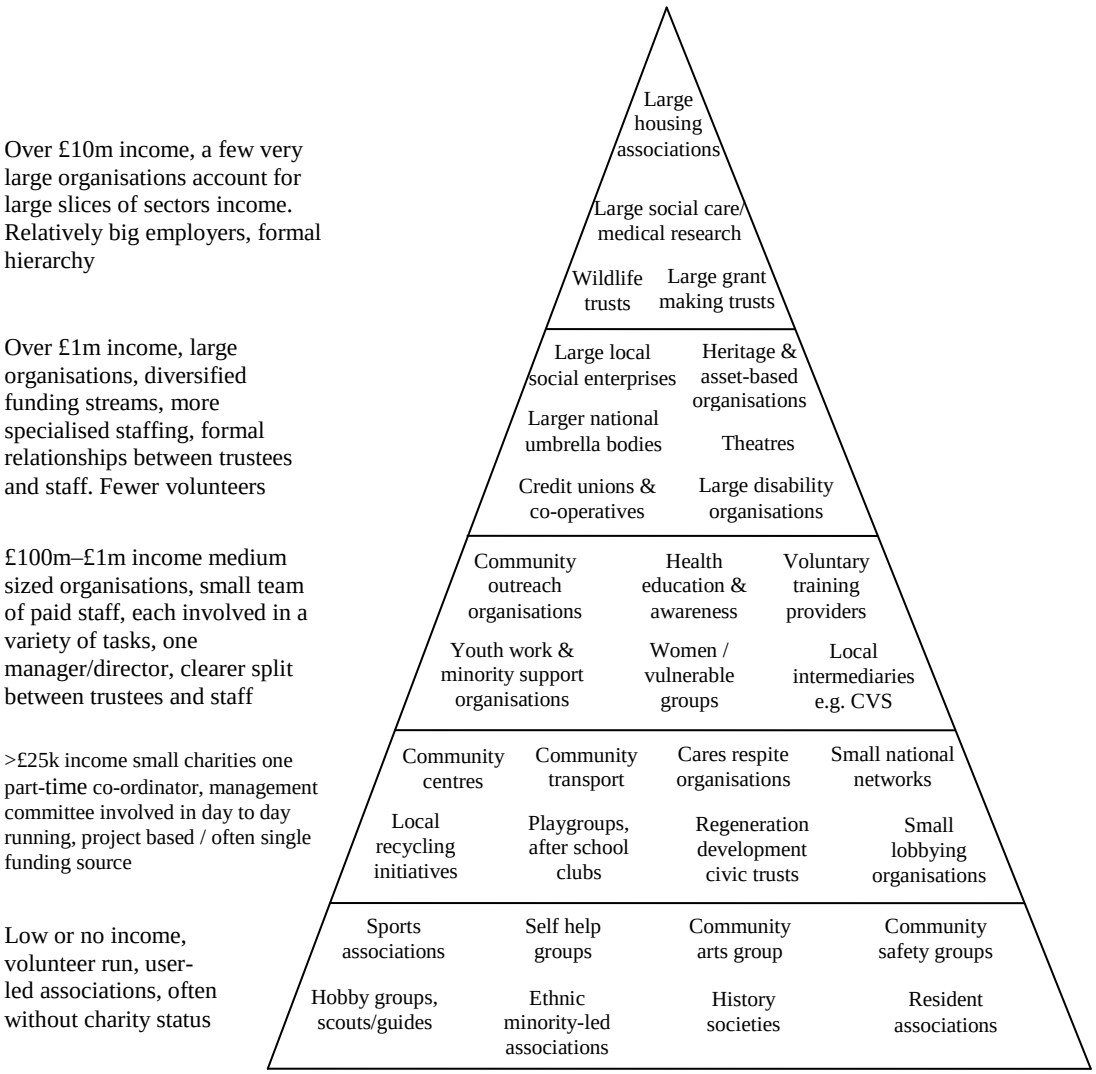
Although only a small sample of countries have been highlighted, some patterns can be found, with all countries except Italy found women volunteered more than men (Wandersman et al, 1987; Vaillancourt, 1994; Freeman, 1997; Vaillancourt, 1994; Powell and Bratovic, 2007; and Pho, 2008), although a small number of studies have found that men volunteer more than women (Van Dijk and Boin, 1993; Schady, 2001; and Hackl et al, 2005). Powell and Bratovic (2007) also found that most female performed service tasks and men were more prominent in the non-service activities. All countries except Italy have a positive correlation between education and volunteering (Vaillancourt, 1994; Freeman, 1997; Schady, 2001; Findlay and Findlay, 2005; Czerwinska, 2008; Pho, 2008; and Tang, 2008). The USA and

Australia have the higher rate of volunteers came from the 34–45 age groups, while two countries, Slovakia and Spain have a higher rate of volunteers from the younger population and Italy and England have a higher rate of older volunteers.

6.3 The Size and Scope of the Scottish Voluntary Sector

The Scottish voluntary sector is made up of organisations that vary in size and structures; they differ in what service they provide and in their methods of delivery. An overview of the size and diversity of the Scottish Voluntary Sector can be seen in Figure 6.2. The triangle shows the voluntary sector in Scotland is extremely varied with the larger voluntary organisations being few in numbers, taking up most of the resources and funding (62 per cent of resources go to the top 5 per cent organisations of the sector). The large organisations employ the largest number of employees, contrasting with the high number of small voluntary organisations, who receive little or no income and usually have a very small number, if any, paid staff. According to the SCVO (2010d), there are 45,000 voluntary organisations in Scotland, of which 20,000 are regulated. Within this group, it is more likely to be charities, housing associations, and organisations that are involved in social care and welfare. The voluntary organisations in Scotland make different impacts on the community through campaigning, delivering public services, charitable trusts that provide funding to other organisations, social enterprises that have more for profit structures to create a positive impact on the community, etc. It is important the Scottish voluntary sector and the organisations within it are sustainable and have the ability to achieve the ‘triple’ bottom line. This triple bottom line involves being economical with its resources, maintain its social obligations and ensure its activities have a positive environmental impact.

Figure 6.2 Overview of the Size and Diversity of the Scottish Voluntary Sector

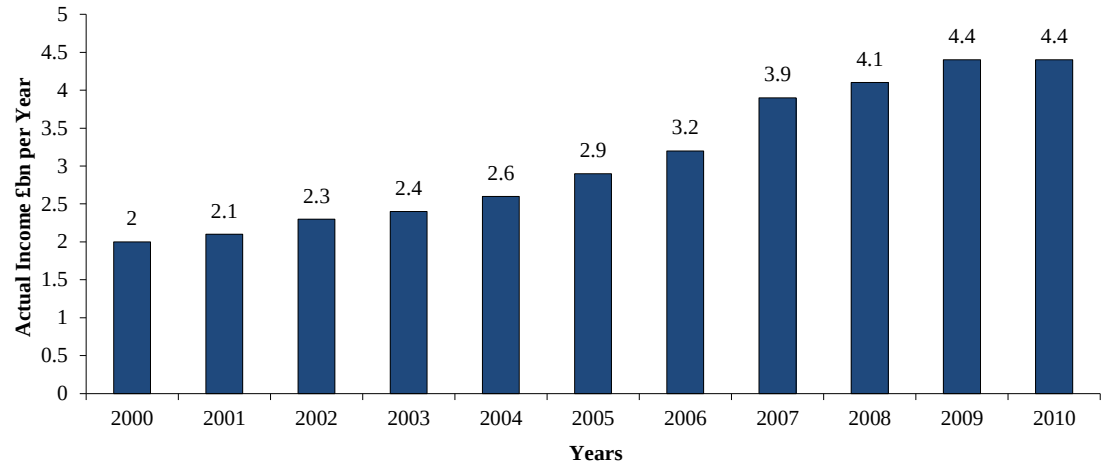


Source: SCVO (2009)

Examining the income and expenditure of the Scottish voluntary sector, shown in Figure 6.3, highlights the positive income growth trend during the period from 2000 to 2010. According to the SCVO (2010e), the Scottish voluntary sector manages assets of over £8.6bn between its 45,000 organisations. The income for 2010 was £4.36bn and expenditure was £4.24bn, giving a positive residual of £123m. The sector spends 51 per cent of the total expenditure on staffing costs. Not controlling for multiple year funding awards, the SCVO (2010d) also reports the income-to-expenditure ratio within the groups shows the larger organisations (incomes of greater than £100,000 per year) had income-to-expenditure surpluses, with medium

and smaller organisations (incomes of lower than £100,000 per year) aggregated show an income-to-expenditure ratio deficit.

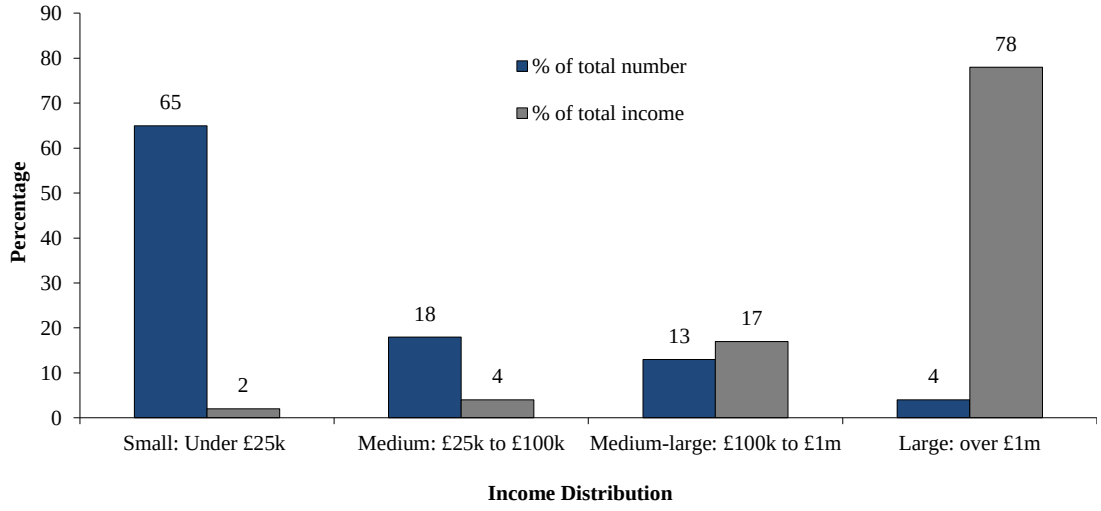
Figure 6.3 Income Growth, Scottish Voluntary Sector, 2000–2010



Source: SCVO (2011)

Examining further the income distribution of the voluntary sector in Scotland, shown in Figure 6.4, there appears to be two extremes, depending on the size of the organisation. The first one is that 65 per cent of the organisations have an income of less than £25,000, accounting for only 2 per cent of the total income. The other extreme is that 4 per cent of organisations have an income of more than £1m, accounting for 78 per cent of the total income.

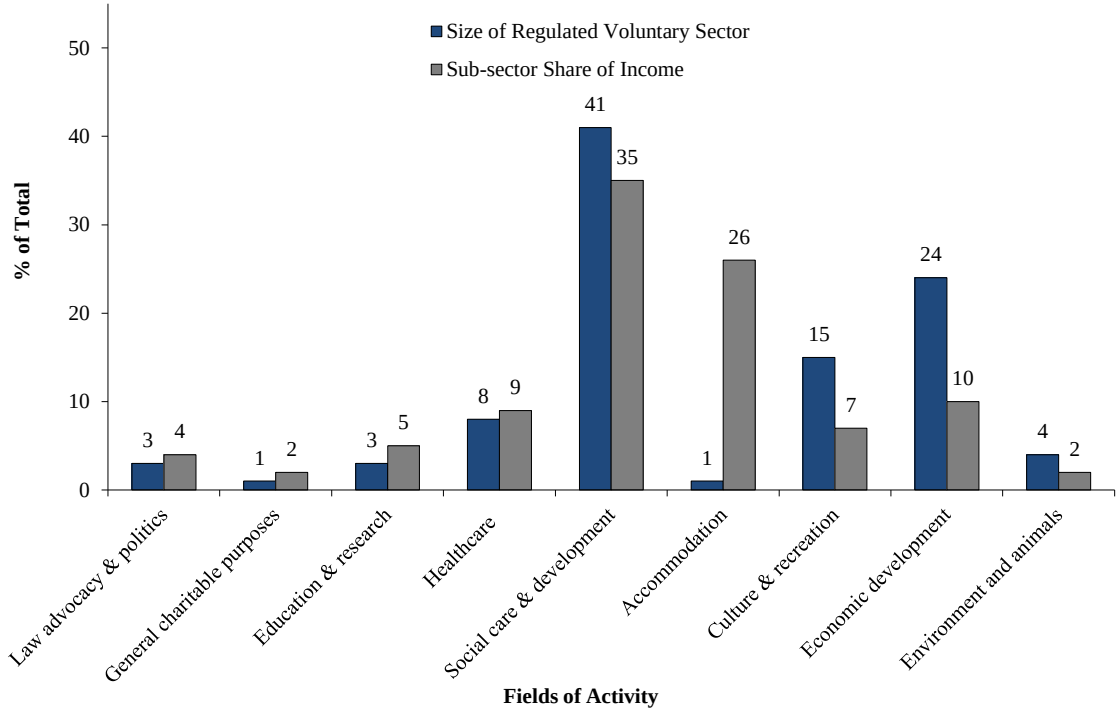
Figure 6.4 Income Distribution of the Regulated Voluntary Sector, Scotland, 2009



Source: SCVO (2010e)

Figure 6.5 shows the breakdown of the sector by share of the field of activity and income generated by each of the fields of activities. The Scottish voluntary sector is split up into nine different headings, as shown in Figure 6.5. The largest field of activity is by far Social care and development, accounting for 41 per cent of all fields and generating 35 per cent of the voluntary sector's income. The highest concentration is found in accommodation (housing associations), accounting for only 1 per cent (or 167 organisations) of all fields of activity and generating the second highest income with 26 per cent of the total.

Figure 6.5 The Regulated Scottish Voluntary Sector, 2009



Source: SCVO (2010e)

The Scottish voluntary sector's income in 2009 reported by the SCVO (2010e) came from many different sources and types of income. The largest share comes from self-generated income of 45 per cent (41 per cent from sales and rent, and 4 per cent from investment). This was followed by public sector income broken down equally to 21 per cent from their Local Authority and 21 per cent from non-Local Authority (all funding in Scotland must fit into the government's economic strategies in order to qualify). Voluntary income accounts for 11 per cent and the lottery makes up the remaining 2 per cent of the income source. The type of income mainly comes from

trading, rents, and investment (45%), then from grants (26%), contracts and service agreements (23%), and donations (made up from gift aid, payroll giving, mail fundraising, organised raffles, collections in the high streets, lottery, appeals, telephone canvassing, and general fundraising events) representing 6%).

The source of income trend has been a move away from grant dependency to a greater reliance on public sector funding (SCVO, 2010e). Table 6.1 shows the share of public sector funding (from councils, NHS bodies, and the Scottish Government) broken down by field of activity. The latest block funding from the Scottish Government, made available for the voluntary sector, was £93 million for the period 2008 to 2011. The funding is distributed through the Scottish Investment Fund, Third Sector Enterprise Fund, and Social Entrepreneurial Fund.

Table 6.1 Scottish Voluntary Sector, Share of Public Funding, 2009

Voluntary Sector Categories	***Share of Public Sector Funding £1.8bn in %***
Law advocacy & politics	8%
General charitable purposes	0%
Education & research	2%
Healthcare	11%
Social care & development	53%
Accommodation	8%
Culture & recreation	5%
Economic development	12%
Environment and animals	1%

Source: SCVO (2010e) and Audit Scotland (2010)

6.4 The Scottish Voluntary Sector Infrastructure

Chinnock and Salamon (2002) state the roles in the voluntary sector are fivefold. The first role of the sector is to be a service provider of a public and collective character, featuring higher quality, greater equity, lower cost/efficiency, and specialisation. They hypothesised this role would be carried out better by the voluntary sector than the government or for-profit organisation. The second role is an innovative role including evolutionary innovation, expansionary innovation and total innovation. As the voluntary sector is not concerned with the profits, this makes them potentially

more flexible. In addition, the voluntary sector is more able to adapt than other types of sectors and have the ability to take more risks. The third role is an advocacy role, where they are in the position to operate as a link between the public and the general political process, and to move for change in government policy and social conditions. The fourth role is an expression and leadership development role, which gives the voluntary sector the ability to express the view of individuals and groups that promote the importance of pluralism, diversity, and fulfilment; moreover, because of this ability to provide the individuals' expression, they encourage leadership development. The last role is a community-building role, where the voluntary sector encourages social interaction. In this role, they help to create behaviour of trust and reciprocity, which adds to a feeling of community. Edinburgh Volunteer Centre (2007) pointed out that building trust was one of the major roles of a volunteer in order to help build a trusting society.

The sector has to be structured properly in order to provide all these roles effectively. It is affected by the legal environment it operates in, and, to improve and update the legislation relating to the voluntary sector, the Scottish Government, introduced the Charity and Trustee Investment (Scotland) Act 2005, leading to the creation of the Office of the Scottish Charity Regulator (OSCR). The purpose of this Act is to provide charities and voluntary organisations 'limited liability', without all the administration duties of being a 'company limited by guarantee'. The Act laid down the way in which voluntary organisations are to be administrated and monitored; therefore, making the sector more transparent, which is assumed to inspire public confidence in the sector. The act introduced a list of what the roles were to be "…to act in the interests of the charity, ensure it does what it was set up to do, act with care and diligence, avoid conflicts of interest and ensure they and their charity comply with the Act" Scottish Government (2007b, p2.2). The Act also highlighted the fact the voluntary organisations bring benefits to the public.

There are three tiers to the Scottish Voluntary sector, tier one is the frontline organisations operating throughout Scotland who are then supported by tier two, which is the intermediary organisations. Overseeing all of the voluntary sector's organisations is the intermediaries' role coming under the third tier organisations,

which are national bodies including SCVO and Volunteer Development Scotland (VDS).

6.4.1 Infrastructure at a National Level

Operating in tier three (operating at a national level) is the SCVO. The SCVO is an independent national body that represents the voluntary sector in Scotland. It provides training, publishes research papers, organises events, advises, and provides a helpline. The SCVO produces a weekly newsletter, for its members of approximately 1300 organisations, called the 'Third Force News', in an attempt to keep information flowing. The SCVO is a registered charity and receives government funding. The SCVO (2010f) lists its strategic objectives as to promote civic action and engagement, build up the sectors effectiveness, capacity, governance, and strength. It also lists improvements in the infrastructure and the promotion of civil society interaction locally, nationally, and globally as their strategic objectives. It operates under three themes, which are to promote equality, to be aware of the distinctive needs of rural communities, and to take a sustainable development approach in their activities. Nine areas of activity were identified in the SCVO's (2010g) current strategic plan, as shown in Table 6.2.

Table 6.2 SCVO, Nine Areas of Activity

1) Develop knowledge about the voluntary sector
2) Strengthen the voice of voluntary organisations and support them to campaign and advocate on behalf of the communities they serve
3) Communicate with, about and on behalf of the voluntary sector
4) Develop the voluntary sector's workforce
5) Develop resources for the voluntary sector
6) Develop voluntary sector networking and collaboration
7) Provide organisational development support for the voluntary sector
8) Develop SCVO's own effectiveness
9) Design and deliver services tailored to the needs of the voluntary sector

Source: SCVO (2010g)

As the SCVO operates at a national level, it plays an important role in facilitating the communication between volunteer groups, intermediaries, and other organisations in Scotland. The SCVO helps intermediaries to network together. Another main body

operating at a national level is VDS, which represents the volunteering arm of the SCVO and it is also government funded. Its aim is to create a strong positive image of volunteering in Scotland. The VDS strategic priorities are listed in Table 6.3

Table 6.3 VDS Strategic Objectives

1) To maintain and develop the VDS as a recognised Centre for Excellence in volunteering
2) To investigate, interpret and disseminate intelligence about the volunteering landscape
3) To contribute to the four strands of the Scottish Governments volunteering strategy
4) Through innovation, best practice, legislative, regulatory and other services
5) To develop and build strategic relationships with stakeholders and organisations
6) To continuously develop and consistently implement excellent ways of working

Source: VDS (2009)

The VDS also has a facility that allows people to go online to find volunteer opportunities and make connections. They provide many different training courses aimed at all stakeholders, e.g., volunteers, the people that manage volunteers, and trustees.

6.4.2 Infrastructure at a Local Level

The second tier of the infrastructure are the numerous intermediaries who help serve the 'frontline' organisations with advice, guidance, training, and other general support, depending on the environment they operate in and the coverage of the organisation. One main organisation is the Council for Voluntary Service (CVS), which is a network that has an association with SCVO. The CVS is specialised in helping local councils and volunteer groups in Scotland with local training, information, and advice. The CVS was funded by the Scottish Government and the local councils, and it generates its own income. The CVS has fifty-six independent organisations over Scotland.

Another main intermediary in Scotland is the Volunteer Centre Network (VCN) and has an association with the VDS. They have a network of thirty-two Local Volunteer Centres (LVC) throughout the country, working from sixty offices. Each LVC is run independently and is responsible for organising and supporting volunteering in their local area. The Scottish Government provides funds for the volunteer centres. They also receive funds from other areas, e.g., the European Union, the public, their local

health trusts, local businesses, local councils, and other grant making sources. The Scottish Government (2002) referred to the LVC as a "…one-stop shops where people interested in volunteering and community action can go to find out more about what they can do" and suggested the objective of the LVC, which is to involve more people more effectively in volunteering locally, helps make Scotland a better place to live. A list of the other main intermediaries in Scotland that help support the front line organisations and individuals can be found in Appendix C.

6.4.3 Other organisations Involved in the Scottish Voluntary Sector

The Scottish Compact is part of a UK wide compact formed in 1998. The Scottish Compact was endorsed by the Scottish parliament in 1999. It sets out guidelines to make sure there is a 'good relationship', i.e., to allow the two-way flow of information between the voluntary sector and the Scottish government, with formal commitments made by both sides. There are two levels of Compact, national and local. The national Compact is represented by national volunteer groups and national public bodies, while the local Compact has representatives from the local volunteer groups and local public bodies. The Scottish Government (2005b) points out that the Compact is an important forum because of the voluntary sector's independence. The Compact allows the sector to have input in debates affecting people in Scotland, and to advise the government on policy development (Scottish Government, 2003b).

In examining the impact of the Scottish Compact, Fyfe et al (2006, p.633) found there is a "lack of action plan and type of high level political commitment…65 per cent of voluntary sector respondents reported no change in working relations with the Scottish executive and other public bodies since its introduction". They also found a lack of awareness of the Compact at both the regional and local level of voluntary organisations, with over half of the organisations being unaware of its existence. Henderson (2006, p.6) found the Compact highlighted tensions between the voluntary sector and the government, "The main issue for the voluntary sector appeared to relate to funding practice, communication, and tension in individual policy areas. Public bodies also identified concerns with, for example, identifying and securing responses from voluntary organisations generally or specifically".

The report concluded that from a national level, there were two key lessons to be considered. These were that an agreement cannot bring about change on its own, and that a more detailed implementation plan backed by all stakeholders is needed. According to Henderson (2006), the setting up and development of the Compacts are taking longer in Scotland than in other areas of the UK. He suggests that some particular help should be given to support the process of the development of Local Compacts. Further, Grotz (2008, p.7) found that the Compact's authority was insufficiently held to be properly efficient for its purpose, even though it has been endorsed by government, "The way the Compact currently derives its authority means that nobody has a meaningful moral or legal right or ability to control its implementation". The view held by many, working in the voluntary sector, is that it is a good idea in principle, but lacks teeth to do an efficient job.

Active Communities Unit (ACU), which is part of VDS, was created as a result of the 2002 government cross-cutting review in public services. The unit supports voluntary, private, and public organisations. The purpose of this unit is to persuade people to volunteer and be active in their community (Payne and Berry, 2003). The Active Communities Initiative (ACI), introduced by the Scottish Government in 2005, is a 5–10 year strategy. Its objective is to break down the barriers that prevent people from volunteering (Scottish Government, 2005c). This initiative provides advice and good practice guides for people who are volunteering in the public sector. Another organisation involved in the Scottish voluntary sector is Office of the Third Sector (OTS), created in 2006 by the UK Government. Its aim is to enhance the role of the voluntary sector, given its growing importance in the economy and society as a whole. The OTS facilitates the government in providing support to the voluntary sector. This support includes providing the sector with the ability to campaign for change successfully, to deliver public services, to promote social enterprise, and to strengthen communities (BSI, 2009).

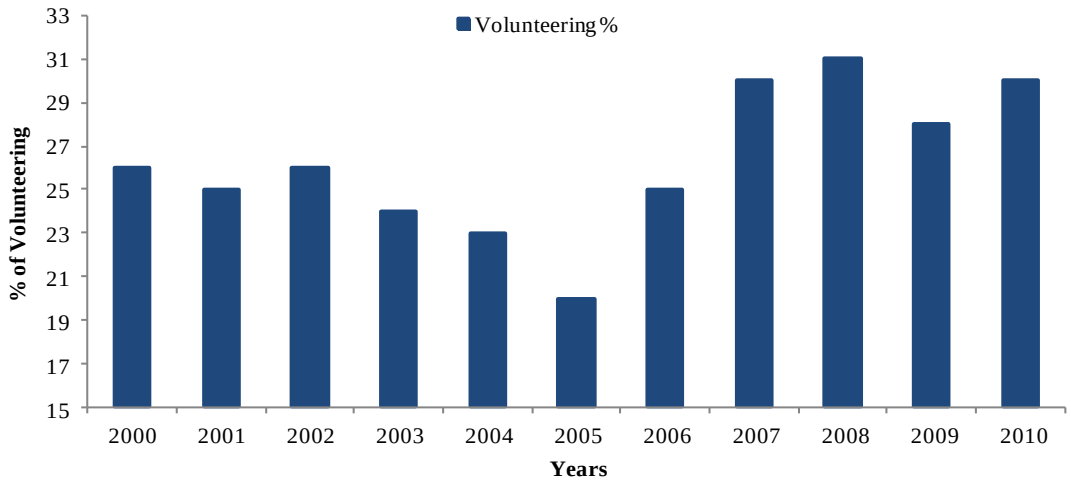
6.5 The Demographics of the Scottish Voluntary Sector

The voluntary sector provides its services through a large number of employees and volunteers. According to the SCVO (2011), in 2010, the sector employed 137,000 staff (around 93,000 full-time and 44,000 part-time), of which 75 per cent were

female. The number of employees has been increasing on average by 4,000 people every year since 1996 (SCVO, 2010e). The education level of the paid voluntary staff is relatively high, with 28 per cent having degrees (ScER, 2005). In order to ascertain the demographics of the Scottish voluntary sector, a national survey has been used, the Scottish Household Survey (SHS).

The SHS is a continuous cross-sectional survey published annually by the Scottish Government with a one-year lag since 1999. It is a sample of the general population of Scotland living in private residences, providing details of the socio-economic characteristics and behaviour of these households at a national and sub-national level. Within the survey, there are several questions on volunteering. This allows a profile of the volunteers to be built over time; therefore, the data from 2000 to 2010 will be examined. Figure 6.6 shows an overall decrease in volunteers from 2000 to 2005, followed by a sharp increase until 2007, where again there is a decrease in the percentage of adults volunteering in 2009. This was then followed by an increase in 2010, where 30 per cent of the Scottish population volunteered in the SHS Sample.

Figure 6.6 Volunteering, Scotland, 2000–2010



Source: Scottish Household Survey 2001–2011

Although there has been fluctuation in the number of Scottish adults that have volunteered over the past ten years, Table 6.4 shows that the pattern in the number of hours that volunteers give per week has not changed significantly over that time, with the exception of year 2005. In 2005, there were more adults (21%) participating

in less than 1 hour of volunteering and a reduction in the 1 to 5 hours percentage (25%), moving away from the general trend.

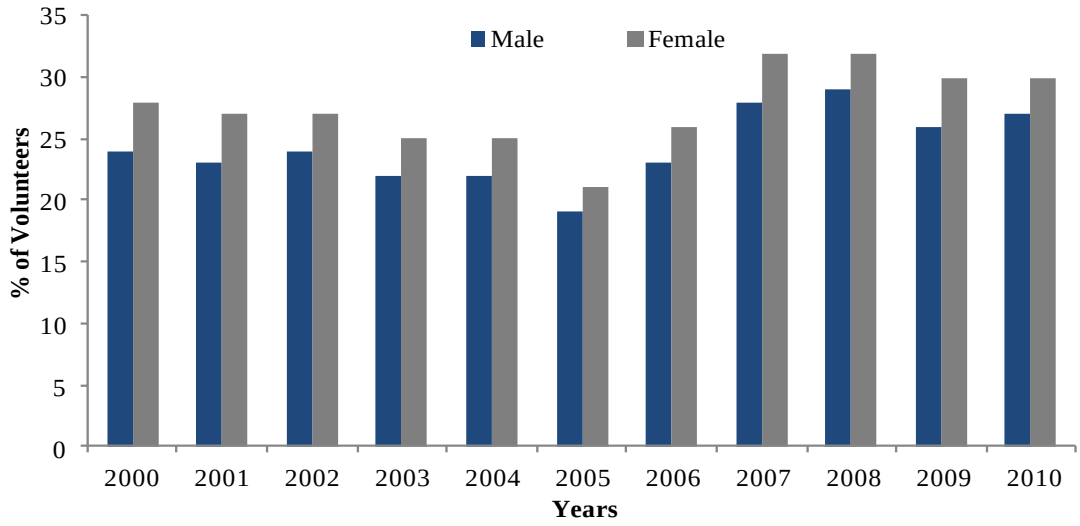
Table 6.4 Percentage of Intensity of Adults Volunteer Participation, Scotland, 2000–2010

Hours	***2000***	***2001***	***2002***	***2003***	***2004***	***2005***	***2006***	***2007***	***2008***	***2009***	***2010***
< 1	-	-	-	-	-	21	2	13	2	4	4
1 to 5	62	63	62	55	56	25	48	43	53	51	52
6 to 10	18	16	16	17	18	18	18	16	16	18	17
11 to 15	5	6	6	7	7	8	8	7	6	8	8
16 to 20	6	6	7	9	8	8	7	7	7	7	7
21 to 35	4	4	4	6	7	6	6	6	6	4	5
36 +	5	4	5	6	6	8	7	6	6	7	7
Don't Know	-	-	-	-	-	1	4	3	3	1	1
One-off activity	-	-	-	-	-	4	-	-	-	-	-
Base	***3806***	***3624***	***7375***	***3280***	***6614***	***2000***	***1658***	***1727***	***3422***	***1863***	***3486***

Source: Scottish Household Survey 2001–2011

Figure 6.7 shows that females have consistently participated more in volunteering than males have over the last ten years in Scotland. This is in line with other researches (Wandersman et al, 1987; Vaillancourt, 1994; Freeman, 1997; Powell and Bratovic, 2007; Pho, 2008; and VDS, 2008).

Figure 6.7 Volunteering by Gender, Scotland, 2000–2010



Source: Scottish Household Survey 2001–2011

Table 6.5 shows how the breakdown of the genders by different age groups, from 2000 to 2010. Overall, the participation rate has not changed significantly in the 25 to 59 age groups. The males from the 16–24 age group have increased their volunteer participation over the period (from 25% to 30%) and volunteered more than their females cohorts did in recent years. The largest percentage increase has been from the older population of 60+ years, as was found by Findlay and Findlay (2005). The 60–74 age group has been changing the most over the period from 22 per cent to 30 per cent for males over the period, and from 26 per cent to 35 per cent for females. The 75+ age group shows an increase with 12 per cent in 2000 up to 20 per cent in 2010 for males and from 13 per cent to 18 per cent for females. In addition, in the recent years, the males of the 75+ age group have been more active than their females cohorts have. On average, over the eleven-year period, the largest gender difference is found in the 25–34 age group, where the females are significantly more likely to volunteer than the males. The least average gender difference is found in the 16–24 year olds (0.2%) and the 75+ year olds (0.2%).

Table 6.5 Percentage of Adult Volunteers by Age and Gender, Scotland, 2000–2010

	16–24		***25–34***		***35–44***		***45–59***		***60–74***		***75+***	
	M	***F***	***M***	***F***	***M***	***F***	***M***	***F***	***M***	***F***	***M***	***F***
2000 (base 14,554)	25	24	22	26	30	35	26	31	22	26	12	13
2001 (base 14,635)	17	22	19	25	25	31	25	29	23	25	13	15
2002 (base 28,667)	20	23	20	27	27	32	30	32	26	27	15	15
2003 (base 13,925)	16	19	17	24	25	31	26	27	23	26	11	14
2004 (base 28,671)	17	21	18	22	26	30	24	27	23	27	13	14
2005 (base 10,156)	15	18	13	18	22	26	20	20	21	24	13	13
2006 (base 7,079)	21	23	16	25	26	30	27	29	24	28	17	14
2007 (base 6,333)	30	27	26	33	31	38	33	34	27	35	17	17
2008 (base 12,538)	32	30	25	29	32	38	32	36	29	32	17	19
2009 (base 6,784)	29	21	21	27	29	34	27	33	28	33	19	18
2010 (base 12,420)	30	27	22	29	29	38	29	35	30	35	20	18

Source: Scottish Household Survey 2001–2011

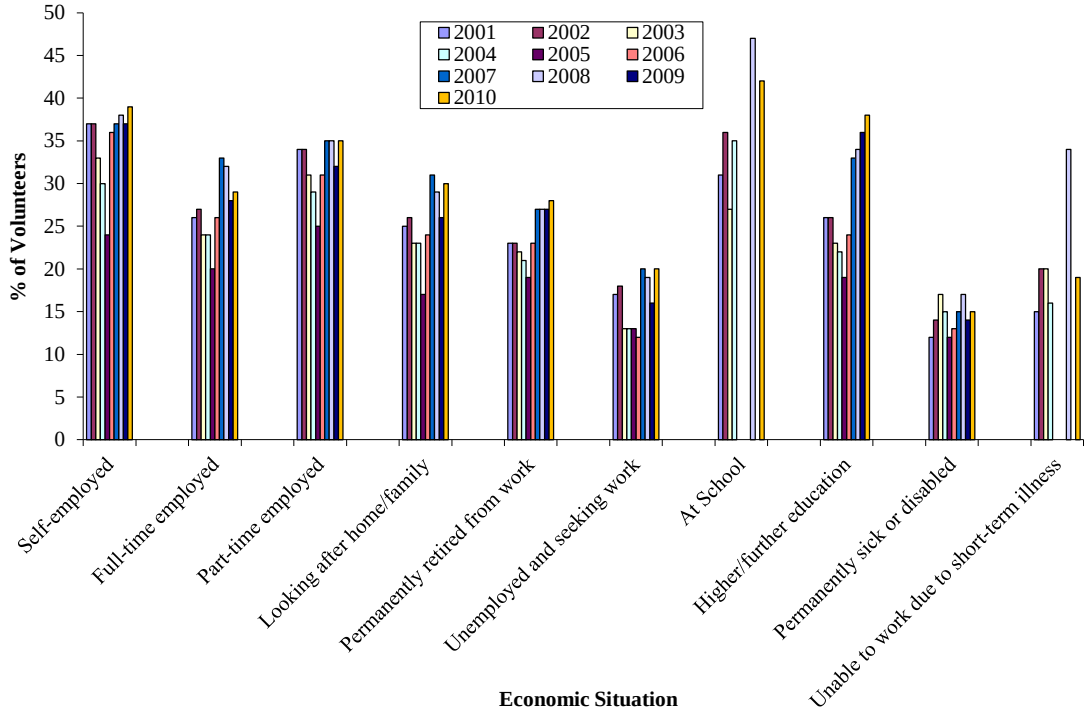
There is a significantly positive correlation between income level, occupational level, and education level, with the propensity to volunteer. A typical volunteer has a high level of education, high socio-economic status, and financially well off. Attwood et

al (2003) found the people who had the highest household income were in employment, had the highest levels of education, were from the highest socio-economic group, and were more likely to be involved in all types of voluntary and community activities than others were. Vaillancourt (1994) found that education is positively correlated with participation in volunteering; moreover, Riecken et al (1994) found that volunteers were more likely to be higher educated and to receive higher incomes.

Freeman (1997) suggests that generally, volunteers are highly educated, hold senior positions in their jobs, and have more demands on their time, implying there is a high opportunity cost of volunteer time. Findlay and Findlay (2005) found that in Scotland, people who have no qualifications are less likely to volunteer, as opposed to people with graduate qualifications, who are the most likely volunteer. They also found that people with a high social-economic status and a high-income level are more likely to volunteer. Vaillancourt (1994), Freeman (1997), Schady (2001), and Pho (2008) also found a positive correlation between the level of income and participation in volunteering. These patterns also are evident in the SHS 2009 data, where the highest participation rate was found in the group who had the highest level of education (degree, professional qualification, or equivalent) by a large margin. In recent years, the participation rate among people having a high education level was of 42.2 per cent in 2008, 40.7 per cent in 2009, and 42 per cent in 2010.

Figure 6.8 shows the current economic situation of the volunteers from the SHS reports of 2000 to 2010. The highest volunteer participants are consistently found to be self-employed, followed by part-time employed. The least likely to volunteer are the people who are unemployed and seeking work, as well as the permanently sick or disabled group. Although, according to Clark et al (2010), the UK voluntary sector employs the largest number of disabled people, with 19 per cent of the total workforce having a disability, in contrast with 14 per cent in the public sector and 12 per cent in the private sector.

Figure 6.8 Current Economic Situation of Volunteers, Scotland, 2001–2010



Source: Scottish Household Survey 2002–2011

The 2010 SHS survey has a base size of 12,420 individuals, of which 5,355 (43.1%) were male and 7,065 (56.9%) were female. This report shows that in 2010, the higher the income a person receives, the greater the participation in volunteering. The number of volunteers earning up to £15,000 are almost half as likely to volunteer as those earning over £40,001, as shown in Table 6.6. This trend has been apparent in the Scottish Household Survey reports for over the past decade.

Table 6.6 Percentage of Volunteering by Income, Scotland, 2010

	0 – 6,000	***6,001– 10,000***	***10,001– 15,000***	***15,001– 20,000***	***20,001– 25,000***	***25,001– 30,000***	***30,001– 40,000***	***40,001+***	***All***
Yes	22	21	22	27	28	34	35	41	30
No	78	79	78	73	72	66	65	59	70
Total	100	100	100	100	100	100	100	100	100
Base	***597***	***1,697***	***2,379***	***1,804***	***1,351***	***1,079***	***1,549***	***1,520***	***11,976***

Source: Scottish Household Survey (2011)

Powell and Bratovic (2007) suggest that social-economic backgrounds play a large role in the ability to volunteer, and that a person with a lower social-economic background causes a large barrier to volunteering. In spite of this, they found that

everyone benefits from voluntary service equally. A small number of studies, for instance Unger (1991), found the leisure time a person has and their social and economic status has little to do with the decision to volunteer. The overwhelming majority of studies show that many different socio-demographic characteristics determine whether a person will volunteer, even the type of organisation and the quality of work the volunteer will provide. Kendall (2003) found that people from higher social-economic groups may participate more in volunteering than other groups for a number of reasons. People in higher social-economic groups are more likely to have more time, a greater access to financial and social resources required to create an organisation in the first instance, possess a greater willingness to volunteer because they would have a higher awareness of the potential benefits, are rooted in the social networks that are closely related with formal volunteering, and possess a cultural preference for formal volunteering as opposed to informal networks.

VDS publishes a digest of statistics on volunteering in Scotland annually. It uses the social groups (A, B, C1, C2, D, E, F) developed by the National Readership Survey (NRS), which are a system of demographic classification. These figures are shown in Table 6.7, illustrating a positive correlation between social-economic status and the propensity to volunteer. Volunteering levels are on average the highest for people in social-economic groups AB (professionals, senior management, lawyers, doctors, teachers) with 52 per cent, compared to 43 per cent for people in C1 (administrative, junior management, supervisors), 33 per cent in C2 (skilled occupations, e.g., plumbers), and only 27 per cent in class DE (partly skilled/unskilled occupations).

Table 6.7 Percentage of Volunteering by Social-Economic Group, Scotland, 2003–2006

Social-Economic Group	***% Volunteering by Social-Economic Group***				
	2003	***2004***	***2005***	***2006***	***Average***
AB	53	60	56	38	52
C1	42	52	42	36	43
C2	39	31	31	31	33
DE	26	32	26	25	27

Source: VDS (2006) and VDS (2007b)

In its surveys, the SHS uses broad SOC codes, which are 1) managers and senior officials 2) professional occupations, 3) associate professional and technical occupations, 4) administrative and secretarial occupations, 5) skilled trades' occupation, 6) personal service occupations, 7) sales and customer service occupations, 8) process, plant and machine operatives and 9) elementary occupations. When considering the broad SOC codes in the SHS (2009), the least likely to volunteer are people from process, plant and machine operatives (4.6%) and the people more likely to volunteer are from the professional occupations (16.7%). In the SHS (2010), the least likely to volunteer are people from process, plant and machine operatives occupations (2.6%) and people who are likely to volunteer substantially more are from the managers and senior officials occupations (40.1%).

Table 6.8 shows that, in recent years, people living in Scotland's 15 per cent most deprived areas are almost half as likely to volunteer compared to people living outside these areas, implying that disadvantaged groups are not equally represented within the Scottish volunteers. Woolvin (2010, p.1) found that people in Scotland living in less affluent areas were less likely to contribute their time to formal volunteering, "Those in deprived communities are almost universally found to have lower levels of formal participation than those in wealthier areas". The Social Research (2008) also found that people in less well-off areas are less likely to volunteer. Findlay and Findlay (2005) found that people who are disadvantaged will volunteer less. Further, the Scottish Household Survey reports for 2007–2010 found the number of hours volunteered by people living in the most deprived areas in Scotland, compared to the rest of the country, did not differ significantly.

Table 6.8 Percentage of Adults Volunteering by Scottish Index of Multiple Deprivation, 2007–2010

	In 15% SIMD				***Not in 15% SIMD***				***Scotland***			
	2007	***2008***	***2009***	***2010***	***2007***	***2008***	***2009***	***2010***	***2007***	***2008***	***2009***	***2010***
Yes	15	18	15	15	33	33	31	32	30	31	28	30
No	85	82	85	85	67	67	69	68	70	69	72	70
Total	100	100	100	100	100	100	100	100	100	100	100	100
Base	***887***	***1,769***	***1,783***	***1,783***	***5,449***	***10,764***	***10,631***	***10,631***	***6,336***	***12,533***	***6,780***	***12,414***

Source: Scottish Household Survey Reports (2008–2011)

The types of voluntary organisations or groups in which adults volunteered can be seen broken down by age groups in Table 6.9. Generally, by investigating the SHS, the age of the volunteer can be grouped by the type of voluntary activity. The 16–34 year olds usually help in voluntary activities involving children, young people, and sports and physical recreation. The 35–44 year olds usually help in voluntary activities involving children and young people. The 45–59 year olds usually help in voluntary activities involving young people, children, sports and physical recreation, and religious / faith issues. The volunteers aged 60+ usually help in voluntary activities involving religious / faith issues, health and welfare and elderly people. These trends are typical of previous years' surveys.

Table 6.9 Types of Organisations or Groups in which Adults Volunteered, %, Scotland, 2010

Adults who did voluntary work in the last 12 Months	***16–24***	***25–34***	***35–44***	***45–59***	***60–74***	***75+***	***All***
Children's activities associated with schools	22	30	39	21	9	3	23
Youth/children	33	24	30	20	10	4	21
Health, disability and social welfare	15	16	14	19	20	19	17
Religion	8	11	9	15	26	44	16
Local community or neighbourhood groups	11	12	15	20	17	13	16
Sport/exercise (coaching or organising)	26	15	16	14	9	6	15
Hobbies/recreation/arts/social clubs	16	12	11	15	18	11	14
The elderly	11	8	6	16	20	20	13
The environment, animals	5	5	7	10	6	2	7
Education for adults	4	4	4	5	4	3	4
Citizens groups	2	2	2	3	6	5	3
Safety, first aid	7	5	4	4	1	2	4
Justice and human rights	3	4	2	4	3	1	3
Politics	4	1	1	3	2	2	2
Trade union activities	1	1	1	2	1	-	1
None of these	5	6	3	5	5	10	5
Base	***288***	***458***	***716***	***951***	***939***	***312***	***3,664***

N.B. Columns do not add up due to the allowance of multiple responses

Source: Scottish Household Survey (2011)

According to the Volunteer Centre (2009, p.1), the roles offered by voluntary organisations, e.g., the Volunteer Centres throughout Scotland are,

> Working with elderly people, supporting people with physical or learning disabilities, information and advice work, driving, charity shops, community cafes, children and young people, supporting victims of crime, befriending, health projects, community education and tutoring, work with the criminal justice system, helping people with sensory impairments or mental health problems, work with animals, work with homeless people, administration, fundraising, conservation work, sports, arts and heritage

The SHS (2010), broken down by percentage of volunteers and type of activity, can be seen in Table 6.10. The largest percentage of volunteers is found to be generally in helping out and raising money. The activity where the smallest number of volunteers participated in was advocacy.

Table 6.10 Types of Activities for that Adults Volunteers Participated, %, Scotland, 2010

Activity	***%***
Generally helping out	41
Raising money	34
Helping to organise or run events or activities	29
Doing whatever is required	26
Committee work	20
Providing advice or assistance to others	16
Education or training or coaching	16
Office work or administration	12
Visiting, buddying or befriending people	8
Providing transport or driving	7
Managing, organising or co-ordinating other unpaid helpers	7
Providing direct services (e.g., meals on wheels, doing odd jobs)	6
Campaigning	6
Counselling	4
Representing others	4
IT Support	3
Advocacy	2
Base	***3486***

N.B. Columns do not add up due to the allowance of multiple responses

Source: Scottish Household Survey (2011)

Table 6.11 shows the amount of time spent in each activity. The most time intensive activity is the managing, organising or co-ordinating of other unpaid helpers.

Table 6.11 Types of Activities for that Adults Volunteers Participated by Intensity, %, Scotland, 2010

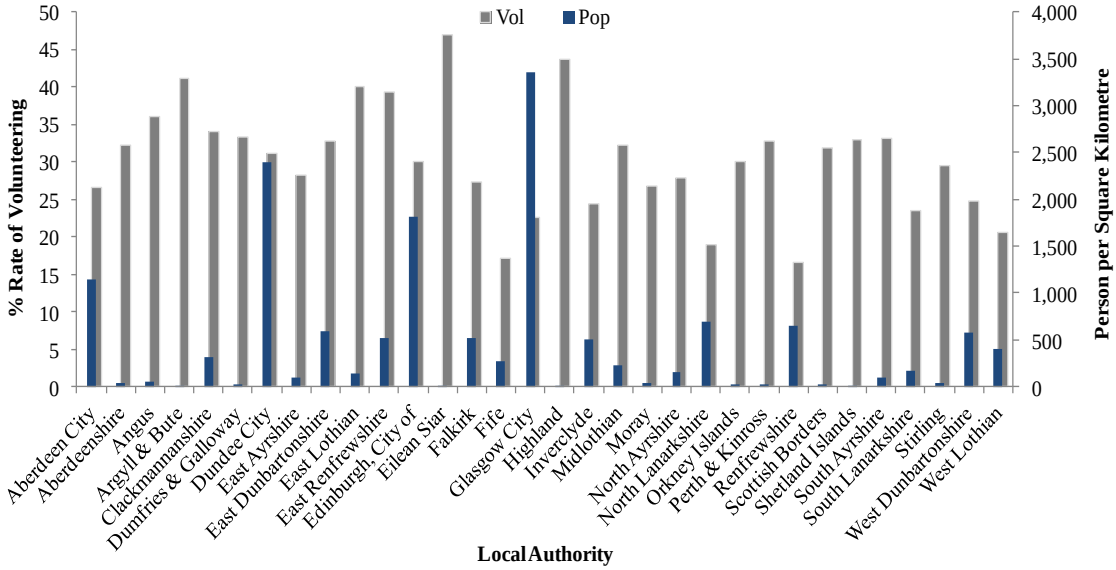
Adults who did voluntary work in the last 12 months	***=< 5 hours***	***6–10 hours***	***11–15 hours***	***16–20 hours***	***21–35 hours***	***36+ hours***	***Total***	***Base***
Generally helping out	48	16	9	7	6	9	100	*1,443*
Raising money	53	16	6	6	5	8	100	*1,210*
Helping to organize or run events or activities	41	20	11	9	7	8	100	*977*
Doing whatever is required	41	16	11	9	8	11	100	*936*
Committee work	37	20	11	10	6	12	100	*764*
Providing advice or assistance to others	38	15	10	10	10	13	100	*541*
Education or training or coaching	35	22	10	9	9	12	100	*484*
Office work or administration	30	19	11	12	8	15	100	*433*
Visiting, buddying or befriending people	33	22	11	8	5	15	100	*285*
Providing transport or driving	35	17	13	7	10	14	100	*247*
Managing, organising or co-ordinating other unpaid helpers	23	15	10	13	10	24	100	*231*
Providing direct services (e.g., meals on wheels, doing odd jobs)	40	16	11	9	6	15	100	*239*
Campaigning	36	18	8	13	5	18	100	*185*
Counselling	28	22	13	11	7	11	100	*138*
Representing others	37	16	11	13	7	14	100	*142*
All	***52***	***17***	***8***	***7***	***5***	***7***	***100***	***3,488***

Source: Scottish Household Survey (2011)

A number of studies examined population density and the propensity to volunteering. Putnam (2000) suggests that areas where there is low-density living will have a reduction in the 'social capital' and 'social interaction'. Whereas Vaillancourt (1994, p.817) found that volunteering was negatively related to the size of a city, "One expects the participation in volunteer work to increase as city size decreases, since both the amount and the variety of privately and publicly provided services decrease

as city size decreases, thus increasing the benefits of volunteer work". Brueckner and Largey (2006, p.17) also found that, in highly populated areas, there is a reduction in friendship-oriented social interaction and group involvement "…empirical results show a negative, rather than positive, effect of density on interaction". Figure 6.9 illustrates that, in Scotland, generally, the lower the population density, the higher the propensity to volunteer (with the exception of Dundee and Edinburgh, where there is both high population density and high volunteer participation rates).

Figure 6.9 Population Density of Scotland, Person per Square Kilometre, and Volunteer percentage Rate, by Local Authority, 2009



Source: GROS (2009b) and Scottish Household Survey (2010)

The rural areas (remote rural and accessible rural) of Scotland account for 94 per cent of the land and contain 18 per cent of the population. These areas have higher ageing and population decline than the rest of Scotland. In addition, these areas experience little social-economic opportunities, housing is spread out over the rural landscape, and transport systems often have extremely low coverage (Scottish Government 2011f). The voluntary sector is very important in delivering public social-economic services to these areas, where there is a gap because of public and private sectors not providing certain services for a number of reasons. This could explain why Scotland has a higher proportion of volunteer organisations that provide a service to rural Scotland than non-rural areas, "The high concentration of rural voluntary organisations may be a function of distance, where more organisations are

needed for a fewer number of people in order to provide adequate access" SCVO (2003, p.8). Lima (2009) examined population density and volunteering, along with the factors that make up the difference between rural areas and urban areas in Scotland. Lima found that, in rural areas, the nature and character of the voluntary sector is that its communities are of a small size and dispersed, with accessibility issues, a lack of economies of scale, and high costs of delivery of services, leading to a greater numbers of voluntary organisations.

In the rural areas of Scotland, the voluntary sector has a large number of small organisations, with more voluntary organisations per head than the rest of Scotland (SCVO, 2010h) and a reliance on a small pool of volunteers (although a larger proportion of people volunteer in the rural areas than elsewhere in Scotland). The volunteers have an important role in service delivery, with a high cost of responding to the needs of small numbers of individuals, geographically dispersed. The Scottish Government provides financial help to build and facilitate the rural areas' voluntary sector. This has facilitated the creation of the Village Halls website, the Highlands & Islands Equality Forum, the Scottish Rural Equality Network (SREN), and the Rural Policy team. Lima (2009) highlights there is restricted access to funding resources that may be more available to urban charities, and there are limited training opportunities for rural volunteers. This was also noted by SCVO (2003, p.8) "…despite a stronger concentration of voluntary organisations in rural areas (they) enjoy less financial support than non-rural areas".

Table 6.12 shows that, in Scotland, people living in remote rural (average of 37.6%) and accessible rural areas (average 30.7%) have a higher propensity to volunteer, with people living in large urban group being the least likely to volunteer (average 22.1%), which is in line with the findings of most reports on population density and volunteering.

Table 6.12 Volunteering Percentages, Urban / Rural Classification, Scotland, 2000–2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Large Urban Areas	22	21	23	23	21	17	22	23	22	24	26	22.1
Other Urban Areas	24	24	24	20	21	18	22	27	22	26	26	23
Accessible Small Towns	29	31	30	25	24	22	24	26	24	26	26	26
Remote Small Towns	28	29	30	24	26	24	30	32	30	28	25	27.8
Accessible Rural	34	32	32	30	30	24	28	31	29	35	33	30.7
Remote Rural	41	36	37	37	35	32	41	37	41	42	35	37.6

Source: Scottish Household Survey Reports (2001–2011)

In Scotland, the population density would appear to have an effect on the propensity to volunteer, with the remote rural having the higher propensity to volunteer and the large urban areas having the least propensity to volunteer. This significant difference is not evident when examining the intensity of volunteering between the area classifications (The Social Research, 2008). Table 6.13 shows only an average of 1.7 hours per month difference between the large urban areas and the remote rural areas, with the large urban areas volunteering slightly more hours than the remote rural.

Table 6.13 Volunteering by Urban / Rural Classification, Scotland, 2008

Urban / Rural Classification	Number of Average Hours Volunteered Per Month
Large Urban Areas	12.9
Other Urban Areas	13.8
Small Accessible Towns	12.1
Small Remote Towns	12.4
Accessible Rural Areas	13.2
Remote Rural Areas	11.2

Source: Social Research (2008)

People who volunteer formally have a higher propensity to volunteer informally and donate money. In a national survey carried out by IVR (2007, p.7), it was found that more than half of the volunteers gave both time and money, "Participation in one activity is positively correlated with the other, with active volunteers giving more money than non-volunteers…reflects the wide variety of individual motivations behind someone's engagement with good causes". According to the VDS (2009), ninety per cent of people that volunteer formally also volunteer informally.

It is also important to investigate non-volunteers in order to understand why people do not volunteer. From the 2010 SHS survey, 29 per cent of people said they did not volunteer in the last 12 months, but had previously volunteered. They were asked their reasons for stopping volunteer activity and the results have been compiled in Table 6.14. The majority of people said they stopped volunteering because of changes in their personal circumstances, e.g., no longer having the available time to spend on the activity, moving house, and having an illness.

Table 6.14 Reason for Stopping Volunteering, %, Scotland, 2010

Reasons for Stopping Volunteering	***%***
I didn't have the time any longer	23
I moved house	12
Through illness	10
Changed job/started work/job got busier	9
I had children	5
I got bored or lost interest	4
I had achieved what I wanted to achieve	4
I wanted a change	3
I had new caring responsibilities	3
Things could have been better organised	2
I didn't feel appreciated	1
My circumstances changed	1
It was costing me money	0
Other reasons	3
Unknown	20
Base	***1,954***

Source: Scottish Household Survey (2011)

The survey also asked people who had not volunteered in the last 12 months what would make them consider taking up volunteering in the future. Most people suggested that, if the voluntary activity fitted in with their other commitments, or if it fitted in with their interests and skills, they would consider volunteering again, as shown in Table 6.15. The results show that voluntary organisations will be required to be more flexible in their delivery of activities and will need to have a varied selection of activities that people could choose to take up, if they are to encourage people to volunteer in the future.

Table 6.15 Reason for Taking up volunteering in the Future, %, Scotland, 2010

Reasons for Taking up Volunteering in the Future	***%***
If it fitted in with my other commitments	12
If it fitted in with my interests and skills	7
If I thought I could help others	4
If someone asked me to do something	4
If I could volunteer when I felt like it	4
If I knew more about the opportunities available	3
If it would improve my career/job prospects	3
If it was good fun	3
If someone I knew volunteered with me	2
If it helped me gain qualifications	2
If I was certain that it wouldn't affect my benefits	1
If I was sure I wouldn't be out of pocket	1
If there were more people like me volunteering	1
If I had more confidence	1
If it would improve my skills	1
Others	0
No others	36
Don’t know	23
Base	***6,746***

Source: Scottish Household Survey (2011)

6.6 Voluntary Sector Partnerships with the Government

Mathiason (2005, p.1) stated that, “The UK is on the cusp of a revolution every bit as far reaching as the privatisation of nationalised industries under Margaret Thatcher. Who provides public services and how the public consumes them is to fundamentally

change". The importance of the voluntary sector in delivering public service provisions has been growing exponentially in recent years. With this said, as Gazley and Brudney (2007, p.411) point out, not all voluntary organisations are suitable or indeed, would be interested in partnerships with the Scottish Government, "We would interpret the general role of the non-profit sector incorrectly if we assume that all non-profit organisations desire a partnership with government". They go on to state the reasons why as being, "Many organisations will find their missions incompatible with government activities; some organisations, in fact are created in opposition to government policy". The voluntary organisations that are suitable and have an interest in a partnership with the government in order to provide collective good will be considered in the following discussion.

The voluntary sector, delivering public services on behalf of or alongside government, has been in the forefront of the coalition government policies at Westminster under the 'Big Society' initiative. The Government at Westminster has introduced a policy to deal with what they see as bloated public sector, which has been too interfering in areas of people's lives in the UK. This, they suggest, has resulted in a crowding out of people's ability to do things alternatively as individuals or as a group, ultimately creating a society where people now look for 'top-down' solutions. The Westminster Government is changing this by introducing the Big Society policy, which involves 1) giving communities more powers, 2) encouraging people to take an active role in their communities, 3) transferring power from central to local government, 4) supporting co-ops, mutual organisations, charities, and social enterprises, and 5) ensuring that government data on communities is published.

The supporting of co-ops, mutual organisations, charities, and social enterprises is intending to strengthen the voluntary sector in order to support public service. The UK Government plan to do this by accessing funds from unused bank accounts, "We will use funds from dormant bank accounts to establish a Big Society Bank, that will provide new finance for neighbourhood groups, charities, social enterprises and other nongovernmental bodies" Cabinet Office (2010. pp2–3).

The Prime Minister David Cameron (2010, p.1) explained the Big Society changes come under three headings, which are social action, public service reform, and community empowerment, stating:

> The success of the Big Society will depend on the daily decisions of millions of people – on them giving their time, effort, even money, to causes around them. So government cannot remain neutral on that – it must foster and support a new culture of volunteerism, philanthropy, social action...We've got to get rid of the centralised bureaucracy that wastes money and undermines morale. And in its place we've got to give professionals much more freedom, and open up public services to new providers like charities, social enterprises and private companies so we get more innovation, diversity and responsiveness to public need.

In discussing the voluntary sector's role in providing public services, the Sectary of State for Scotland, Michael Moore (2010), said that Scotland is committed to building an inclusive Big Society that is willing to confront challenges from social, political, and economic areas. Further, he states the voluntary sector should have a much greater involvement in the running of public services, as their activities have a large positive impact on Scottish society. The Big Society policy has been criticised for going back too far to basics where, in a sense, they are applying old 20th century solutions for the current 21st century.

The Scottish Government (2005) already recognises the contributions the voluntary sector makes in Scotland in building strong, cohesive, and empowered communities. It lists the positive attributes in this area as the strength the sector has in the community and its unique ability to develop social networks between individuals and organisations. The Deputy Chief Executive for SCVO, Lucy McTernan (2010, p.1), suggests that it is up to the Scottish voluntary sector to define the Big Society as they see it. She suggests that "What the big society should really be about is communities and organisations being supported and nurtured to follow their own path in a sustainable way". She goes on to state that "…Everyone's looking for a way to do things differently and the third sector has an excellent track record of delivering alternative community based public services. Now is the time for our sector to step up and show Government how, with our help, they can deliver a sustainable Scotland".

In the current economic climate, where Scotland and the UK as a whole are experiencing policies that are austerity in nature, the need for value for money in providing public services is paramount. The ONS (2010b) suggests that, this drive for value for money in government provisions and services, has created an opening of the public service market to competition from the voluntary sector in recent decades. In Scotland, there currently is around £8bn public service market for the voluntary sector to tap into (Public Social Partnership, 2010). The voluntary sector in Scotland has shown that it is more than capable in providing public services and that it is already a key player in the delivery of public services. The Scottish Government (2005b, p.1) pointed out that, "The sector attains this level of importance, not simply because it is the voluntary sector, and not because it is an alternative to the private and public sectors. It is valued precisely because in each case, it justifies its role, by being the most effective option".

As volunteers are uniquely placed in the community, they can build up trust quickly and effectively. The beneficiaries know the volunteers are helping them because they want to, it is their choice, and not because the government are paying them to 'care', for example. The Scottish Government sees the voluntary sector to deliver services effectively such as social housing, children's services, recycling, community transport, and alternatives to custody. The auditor general for Scotland, Robert Black (2010), agrees with this, and he said the voluntary organisations are found to offer quality and value when delivering public services.

Head of Scottish Governments Third Sector Division, Christine Carlin (2010), also added the voluntary sector is efficient in delivering public provisions. Carlin states the voluntary organisations, although not part of the public sector, receive most of their business from the public sector. Further, the voluntary sector has shown its ability to operate in a business style that allowed it to hold its own alongside conventional private sector businesses. Carlin concludes the voluntary organisations are running their operations with a social conscience that is not tainted by money, but using money and profit to deliver social outcomes.

SCVO (2010i, p.1) suggests the sector is a major provider of public services, especially to local authorities and the health service, pointing out that it was not just at local levels but also for the Scottish and UK government departments:

> Many of the sector's services are heavily personalised and embedded in communities and help prevent more expensive interventions further down the line…Scotland's third sector is better trusted than local authorities…and delivers higher quality care services than either the public or private sector…These services include very substantial provision of social care, as well as other services for example housing, health, recycling, community rehabilitation and employment initiatives.

In a joint statement by the Scottish Government (2009b) and the voluntary sector, the importance of the partnership between the two was highlighted, which included the voluntary sector's direct impact on the growth of Scotland's economy and the wellbeing of the population with improvements of its public services. In addition, they provide services to some of the most vulnerable people and, because of this, they can deliver better outcomes for communities. It was suggested that the government's role is to be politically accountable and financially responsible to the public, ensuring the right outcome and service provision are realised with the help of the voluntary sector. SOLACE Scotland (2009) found the relationship between the government and the voluntary sector varies over the country and is not much dependent on process and culture, but more on personality.

The theory of the partnership between the government and the voluntary sector in delivering public services suggests that both institutions have the same overall objective and complement each other in delivery of the provision for public services. In reality, for the Scottish voluntary sector to have a partnership with the Scottish Government, it is important to examine how the government's objectives for the Scottish people fit with the objectives of the voluntary sector. Kendall (2005) pointed out the voluntary sector's public policy has been built around historic foundations. He finds the policy community to be characterised as being mobilised deliberately as a partner in public service delivery and having a strong social welfare orientation, ensuring that it is being linked with the government's agenda of public service reform and political product differentiation. Kendall also finds the central issue for

the voluntary organisations is the development of appropriate governance. This, he states, has developed from a longstanding concern with legal regulation.

One of the main reasons why the Scottish Government gives funds to support the voluntary sector is because it wants the voluntary sector to help achieve some of the government outcomes and economic strategies. Kendall suggests that government support has been justified through the voluntary sector's role of facilitating social inclusion, which is evident in the priorities of the funding and public service agreements. Funding by the government to the voluntary sector can only happen if the voluntary organisation can prove it is fitting in with the government's five strategic objectives, which are the areas the government wants to focus on. In addition to this, there are 'fifteen national outcomes', which list what the government wants to achieve, and 'forty-five national indicators', which enable the government to track the progress of the outcomes. All of the objectives, outcomes and indicators, are underpinned by 'three golden rules', which are solidarity, cohesion, and sustainability. The voluntary sector needs to fit in with the politically created environment that is broken down into five strategic objectives as shown in Table 6.16.

Table 6.16 Scottish Government, Strategic Objectives

Strategic Objectives
Wealthier and Fairer - Enable businesses and people to increase their wealth and more people to share fairly in that wealth
Smarter - Expand opportunities for Scots to succeed from nurture through to life-long learning ensuring higher and more widely shared achievements
Healthier - Help people to sustain and improve their health, especially in disadvantaged communities, ensuring better, local and faster access to health care
Safer and Stronger - Help local communities to flourish, becoming stronger, safer place to live, offering improved opportunities and a better quality of life
Greener - Improve Scotland's natural and built environment and the sustainable use and enjoyment of it

Source: Scottish Government (2009c)

The fifteen national outcomes explain what the Scottish Government wishes to achieve within a ten year period. These outcomes can be seen in Table 6.17.

Table 6.17 Scottish Government Fifteen National Outcomes

The Fifteen National Outcomes
1) We live in a Scotland that is the most attractive place for doing business in Europe
2) We realise our full economic potential with more and better employment opportunities for our people
3) We are better educated, more skilled and more successful, renowned for our research and innovation
4) Our young people are successful learners, confident individuals, effective contributors and responsible citizens
5) Our children have the best start in life and are ready to succeed
6) We live longer, healthier lives
7) We have tackled the significant inequalities in Scottish society
8) We have improved the life chances for children, young people and families at risk
9) We live our lives safe from crime, disorder and danger
10) We live in well-designed, sustainable places where we are able to access the amenities and services we need
11) We have strong, resilient and supportive communities where people take responsibility for their own actions and how they affect others;
12) We value and enjoy our built and natural environment and protect it and enhance it for future generations
13) We take pride in a strong, fair and inclusive national identity
14) We reduce the local and global environmental impact of our consumption and production
15) Our public services are high quality, continually improving, efficient and responsive to local people's needs

Source: Scottish Government (2009e)

The forty-five national indicators allow the government to track the progress in achieving the fifteen national outcomes. The indicators are not just one measurement but also a selection of chosen sets, which measure the progress of each outcome using a mixture of time scales (2008–2018), percentage targets, etc.

6.6.1 Voluntary Sector Alignment with the Governments Objectives

In a review commissioned by the Scottish Government, Dacombe and Bach (2009, p.63) found that, in examining how the Scottish voluntary sector contributes to the Scottish Government's five strategic priorities, "There is clear evidence underpinning the contribution of the third sector to each of the Strategic Objectives…The weight of evidence underlining the contribution made by the third sector in Scotland is overwhelming". They found that, under the wealthier and fairer

objective, the contribution of credit unions to financial sustainability was evident, as well as tackling financial exclusion. Under the smarter objective, they found evidence of the sector's role in promoting access to employment, providing lifelong learning, providing education, facilitating access to learning, and contributing to the early year's childcare.

Under the healthier objective, they found evidence that the sector helps people to sustain and improve health by the role they played in health policy, children and parental wellbeing, health promotion, healthcare provision, sport, health and wellbeing, and substance misuse. Under the safer and stronger objective, they found evidence of the sector's role in helping in areas of equalities groups, housing and homelessness, advocacy work, and the voluntary sector arts. Under the greener objective, they found evidence of the sector's role in helping improve Scotland's natural and built environment by having community recycling, environmental volunteering, land management, and heritage. Further, the Scottish Government (2008) found the voluntary sector is playing an important role in helping the government achieve the three golden rules. For the first rule, solidarity, the government states the voluntary sector makes successful contacts with the retired, long-term unemployed, rural communities, minorities, and individuals that both private and public sectors do not effectively reach. The government states the voluntary sector can, and does, change people's lives. For the second rule, cohesion, the government found the voluntary sector works in deprived and remote areas where the private sector does not usually service. Thirdly, in terms of sustainability, the voluntary sector creates initiatives, e.g., renewable energy, community recycling, and sourcing local foods, which helps build sustainability in the community.

6.6.2 Current Voluntary Sector and Government Partnerships

The Community Care Providers Scotland (CCPS) (2010) is a national body that represents the voluntary care providers in Scotland. They have around sixty-six voluntary organisation members who dedicate their services in caring for the very young to the very old people in Scotland. In 2010, the members jointly account for an annual income of more than £1bn between them (around 72 per cent is publicly funded services, making up the bulk of their service). The members also jointly

employ over 36,000 employees. The CCPS provides support services for all ages at a variety of levels, with the main services being through contracts on behalf of Local Authorities. The CCPS provides representation for its members and is working in many policy initiatives with the Scottish Government, Care Commission, Care Information Scotland – NHS, Community Care Studies (University of Strathclyde), COSLA, Dynamic Inclusive Communities, NHS Education for Scotland, Scottish Child Care and Protection Group, and the Scottish Council for Voluntary Organisations.

The CCPS keeps its members informed about current and future changes within the Scottish community care sector, regarding collaborative working, commissioning, tendering and procurement, new localism, personalisation, and regulation of care. They also carry out researches that can be accessed through their website. Most of the organisation members are suffering a financial loss through providing services in the community by way of government contracts (CCPS, 2007). This has resulted in uncertainty in the sustainability of CCPS organisations, with ninety per cent of their organisations currently providing part or full services at a financial loss, which the CCPS states is unsustainable and will worsen in the current economic climate in Scotland (CCPS, 2010). In 2011, 44 per cent of providers reported a downturn in business, 58 per cent reported a decline in the staff employment, and 47 per cent reported a decrease in operating surpluses (CCPS, 2011).

The Public Social Partnership (PSP) is a consortium of social enterprise, Forth Sector, consultants, and PricewaterhouseCoopers LLP, which facilitates partnership between the voluntary sector and the public sector. This consortium was created as a way to ensure local communities receive the highest standard of public service that is possible by maximising competition, while ensuring the voluntary sector is involved at key stages of the design, and commissioning and procurement of the public services. The initiative was set up in 2009 up until 2011 and it involved ten pilot projects that are 1) the Aberdeenshire Council and Cornerstone project, 2) the HMP Barlinnie and Theatre Nemo project, 3) the Eilean Siar Council and Third Sector Hebrides project, 4) the Argyll and Bute Council and ABSEN project, 5) the Falkirk Council and Falkirk CVS project, 6) the Renfrewshire Council and

Renfrewshire CVS project, 7) the East Renfrewshire Council and Partners for Inclusion project, 8) the Registers of Scotland and Haven project, 9) the Aberdeen Council and Inspire project, and 10) the Aberdeenshire Council and Central and South CVS project (Scottish Government 2009d). According to the Scottish Government (2011h), all the pilot projects involved with the PSP were successful and gained skills, enabling them to design effective services around the needs of the public. The PSP was since launched countrywide in July 2011.

The voluntary sector does not only have a partnership with the government, it has also developed a new partnership with businesses. The first of its kind in the UK is the partnership called the 'Business Know How and Social Change', which was a pilot project launched in Aberdeen in September 2008 (SCVO, 2008). The objective of this partnership is to make possible the improved sharing of skills and knowledge between the two sectors, resulting in the voluntary sector being more business orientated and the businesses being more aware of their social responsibility. The project was created for a three-year period and funded by the SCVO, the Scottish Chamber of Commerce, and the Royal Bank of Scotland. The participants are SCVO, four local Councils for Voluntary Services, Aberdeen and Grampian Chamber of Commerce, and the Royal Bank of Scotland. The project provides workshops, a website for interactive learning, voluntary/business sector events, mentoring access, and e-bulletins. The pilot has been a success with over 400 private and voluntary sector organisations now linked and receiving advice and help in the North East of Scotland. As a result, the project is now continuing between the original partners throughout 2011 (Business Know How and Social Change, 2011).

6.6.3 Effects of Government Partnerships on Voluntary Organisations

The effects of government partnerships with the voluntary organisations can vary. These partnerships can cause the voluntary organisation to lose some of its independence and flexibility, as well as a reduction in volunteer motivation. Some have suggested there can even be a loss of citizenship and disengagement from the local community, as the organisation becomes more accountable and similar to for-profit organisations, while the voluntary sector has access to a huge public service market, as mentioned previously (around £8bn), and a more stable funding stream. In

2010, 42 per cent of the voluntary sector's income came from public contracts and grants (SCVO, 2011).

Although some suggest the partnerships are undesirable from a voluntary sector point of view, they are not always desired by the government or the local authorities. This is because of the lack of entrepreneurial skills of some voluntary organisations and the lack of ability for the voluntary sector to grow. Ben-Ner (2001, p.3) pointed out that, "...non-profit organizations have significant disadvantages with respect to their ability to engender entrepreneurship, obtain financing and conduct efficient operations...". Voluntary organisations have no control over the debt / equity ratio it holds; therefore, it has limited control cost minimisation of capital, which can cause some organisations to experience limited growth. There could be an issue with the Local Authority departments, as some have little understanding of the voluntary sector, which can make them reluctant to pass on contracts that are worth a substantial amount of public money.

By examining the effects of these government partnerships with the voluntary organisations in providing public services, it is found that some voluntary organisations do become more similar to a business because of their increase dependency on government funding over recent years. This has meant that these organisations have had to be more accountable, putting pressure on their structure, and has brought about a more defined job specification for both the paid staff and the volunteers. This can help the voluntary sector prepare younger volunteers for paid work and help their career development. Conversely, this may inhibit other volunteers who are not motivated by the investment model, but are intrinsically motivated, for example.

Deci and Ryan (1985, p.234) point out the potential outcome of more business-oriented practices, including working to strict deadlines, monitoring, and evaluation of the volunteers, which can undermine some intrinsically motivated volunteers, "Autonomy is essential to intrinsic motivation showing that other events such as threats…surveillance …evaluation…and deadlines…also led to the undermining of intrinsic motivation, presumably because they also prompted a shift toward a more external perceived locus of causality". Pearce (1993) found that measurements and

authoritative commands cannot reasonably cover all the required organisational behaviours without 'throttling' the voluntary organisation.

Milligan and Fyfe (2005, p.431) find that some voluntary organisations (corporatist organisations) actively seize the chance to extend their participation in providing provision of social welfare services along with the government. They find that, within these organisations, active citizenship declines because they attempt to make the environment more professional in order to satisfy their funder's standards, in this case, the government:

> The increasingly complex welfare services they provide are also delivered, largely, by paid professionals or trained volunteers—eroding space within these organisations for the traditional volunteer…These developments result in a disengagement from local communities and a disempowerment of citizens resulting in the emergence of increasingly passive forms of citizenship within these organisations.

Conversely, according to Milligan and Fyfe, organisations within the grass-roots model have the ability to, and actively do, take on the role of promoting active citizenship and local empowerment. They find these models have the ability to keep their local identity and welcome social and cultural diversity, as opposed to the organisations operating within a corporatist model. They also find that such organisations wish to remain at the outskirts of the range of government control and monitoring, which causes funding stream to be unstable and limits their ability to increasing their role as providers of social welfare. Milligan and Fyfe suggest this bifurcation has increased because of the recent reforms in the voluntary sector.

Brodie (2009) found that partnerships between the voluntary sector and the government that are developed to provide public goods can cause a loss of independence and lead to a reduction in flexibility and autonomy, as well as in the motivation of volunteers. Hemmings (2008, pp.1–5) found the voluntary sector is becoming more business-oriented when partnering with the government,

> …while modernisation has brought opportunities for growth this has been linked to a reduction in the autonomy and independence of NFP (Not for Profit) and VO's (Voluntary Organisations)…while NFP and VO involvement in public welfare has grown organisations have been forced to move from

> independence to responsiveness to a central procurement model that emphasises competition within managed markets

The Baring Foundation (2009, p.6) found the funding of the Scottish voluntary organisations were the largest threats to the sector's independence "...funding relationships were the single most commonly cited threat to independence, drawing these organisations into tightly defined contractual, performance, accountability, modernisation and reform regimes for example". The voluntary sector's increased role in delivering public provisions and services has meant there has been an increase in the amount of government funding. The Scottish Government has the option to stop or reduce funding of voluntary sector projects or not renewing contracts. This has lead to an unequal partnership, as the government has more power and influence over decisions. This puts the voluntary sector in a weaker position, which is undesirable, "In mutually dependent relationships, it is critical the balance of power be approximately equal. The consequence of domination by one actor reduces effectiveness, with ancillary costs of conflict, delays, and errors" Cho and Gillespie (2006, p.505).

Ockenden and Hutchison (2008, pp.1–8) also found the structure of the voluntary organisations change as they get involved in working alongside the government, as these community-based organisations are more likely to now be shaped by external factors, e.g., policy and funding changes, which they have little opportunity to influence because of their size, capability and operating environment, "…organisations can risk moving away from their original ethos and remit in response to new policies or the availability of funding for specific areas of work…many of whom appear to risk 'sliding into change'…as each new source of funding comes along". Carson and Kerr (2008) examined the voluntary organisations that deliver public services. They found that short-term funding patterns of the government, with the addition of tighter specified service delivery and accountability requirements by public funding bodies, has generated increased insecurity in employment in most voluntary organisations.

There is also a danger that too much emphasis on the voluntary sector delivering public services could distort the public's idea of what the voluntary sector is about;

therefore, it could have a negative effect on the voluntary sector's campaigns and its independence from the government. Johnson (2010) warns there is a danger for voluntary organisations being what is consumed by key performance indicators and risk assessments, suggesting the voluntary organisations could forget their roots. By accepting large-scale public sector contracts from the government, it is reasonable to expect the voluntary organisations will exhibit some qualities from the public sector. "The development of appropriate governance is seen as a central issue faced by these organisations, and grows out of a longstanding preoccupation with the legal regulation of charities in particular" Kendall (2005, p2).

It has also been suggested that the government wants social enterprises to run public services in an outsourced welfare state and that this outsourcing has the potential to turn the voluntary sector into a shadow state. This may make people reluctant to volunteer, as they may believe they are volunteering for the government (Fyfe et al, 2006). The Socialist Worker (2008, p638) has concerns over the government and voluntary sector partnerships, warning that government are "...reinforcing state authority over welfare provisions through increased administrative oversight and regulatory control". Lewis (2004, p.171) also highlights concerns over the voluntary sector's independence, "The main issue becomes that of how independent they are of the state…if the work is done under tight specified contracts and government paymasters". While Chinnock and Salamon (2002) found that government funding does not discourage advocacy or community building. They find that, in fact, it seems to encourage both these roles and, with community building, it may provide the voluntary sector with the appropriate resources to grow their capacity and size, leading to more social capital.

A positive effect of the partnerships is that voluntary organisations partnering with the government in delivering public services means they have become leaner, better structured, more efficient, and in general, they have the security of a steady income stream. According to Ben-Ner (2002), stricter auditing may improve the voluntary sector's performance and allows it to respond better to various failures by government correctives.

A Full Cost Recovery (FCR) is the process whereby any voluntary organisation that provides a service for a 'public body' theoretically has the ability to get back its direct cost of providing that service and any appropriate overhead costs, e.g., location, administration, planning and development, and price increases. According to Hayton et al (2007, pp.2–90), they believe the FCR is an important component in the drive toward a sustainable voluntary sector. They suggest the benefits that include greater financial sustainability for the voluntary sector are "Increased security and retention of staff; greater stability; increased access to other funding streams; more effective long term planning; being able to compete effectively for resources; and having the ability to get more involved in key areas of policy and provision in Scotland". Further, they point out that issues can arise in producing a FCR and the voluntary organisations can find it difficult because of lack of cost information in which an agreement should be funded, inconsistency in practice at a local level, a lack of clear and practical guidance, and also there can be strings attached to funding. They found the costs of its implementation appear to be relatively modest, but "…implementation would be against a background of public bodies being forced to make efficiency savings. As such they seem unlikely to be willing to increase the amount they give to the sector without some comparable evidence of cost savings".

6.7 Weakness in the Voluntary Sector

The inability for voluntary organisations to distribute the profits to shareholders, for example, could encourage inefficiency within the sector and produce wastage. On the other hand, this inability to distribute the profits creates a trust of the voluntary sector necessary for the service they provide and for the funding they receive. The non-distribution constraint is a weakness but is also its strength, as James (1990, p.22) found, "The non-distribution constraint is said to make the nonprofits more trustworthy, another line of theory suggests it makes them less efficient. If no one has the property right in the residual, no one has an incentive to keep the organisation free from sloth and waste". Hemmings (2008) suggests that a weakness in the voluntary sector is their lack of ability to innovate, given their dependency for funding.

Salamon (1995) pointed out weaknesses in the voluntary sector, e.g., the particularism in choosing services that are responsive to groups' issues in such a way they can be seen as discriminating. They have insufficient resources available to them, as they depend on funding from private and government bodies, which can be an issue when there is a recession. 'Paternalism tendencies' is another weakness pointed out by Salamon, which leaves beneficiaries with a feeling of dependence on the voluntary sector. He also noted they exhibited excessive amateurism, as they deal with people's problems in a 'less professional way'. Further, they do not pose the same monetary incentives or proper sanctions that make labour supply more manageable. They also have had accountability gaps with the missing pressure from shareholders to keep the voluntary sector efficient, although Salamon concluded these weaknesses could be fixed over time.

6.8 Measuring the Value of Volunteers (Micro Level) and Voluntary Organisation (Organisational Level)

All stakeholders, e.g., volunteers, voluntary organisations, funders, and trustees wish to know the time and money, which they supply or donate to volunteer activities, has a value adding impact and benefit on the service users and the community. Carrying out regular assessments on the impact of the voluntary activity allows for the voluntary sector to be transparent and accountable. Calculating the economic value of the voluntary organisation allows informed decisions to be made on the operations of the organisation, the budget, training plan and improvement plan. The impact assessments also enable voluntary organisations to justify the expense of the volunteers' activities, help measure volunteer effectiveness, and allow for an improvement in managing volunteers that ultimately combine to give recognition and respect to the sector.

Within the voluntary sector, there have been a number of ways suggested in which to measure the effectiveness and the value of the work performed, as well as the organisation as a whole. Kendall (2003, p.89) points out that measurement of the inputs and outputs are difficult, as usually, voluntary organisations are endeavouring to meet social needs that are "ill-defined, hard to measure, of long gestation and high complexity". Salamon (2011, p.220) states the inability to measure the impacts leads

to inefficiencies in the managing of the voluntary organisations, “It makes effective management of volunteer work far more difficult. Management improvement depends critically on measuring the consequences of management change. What cannot be measured therefore cannot be effectively managed. And volunteering has not been effectively measured in most places”.

Heady and Copps (2008, p.4) found that most voluntary organisations find it difficult to measure their effectiveness at delivering their services, and remark, “Measuring effectiveness is crucial to delivering the social impact the voluntary sector aspires to. Yet most charities struggle to do this”. Further, they suggest that proper measurement would allow for a more efficient organisation “...by helping charities to learn and improve, and ensuring funding is targeted to the places where is would make the greatest difference”. In order for the voluntary organisations to be sustainable, to improve, and to grow, there must first be an assessment done on the effectiveness of the organisations; therefore, a measurement of the inputs and outputs needs to be carried out.

The valuation of input labour can be complex, putting a market value on volunteering activities such as comparative worth, where the shadow wage is used to work out the economic value of volunteering. The shadow wage has evolved from societies assumption that earnings reflect what labour is worth, even though, at the very core of the voluntary sector, the labour is supplied without financial compensation or concern. The shadow wage allows an estimate of the economic price of labour, it can be worked out in two ways, i.e., using either the opportunity cost method or the replacement value method.

In this dissertation, the opportunity cost method is interested in how much an individual would get if he were to work extra paid hours rather than volunteering (instead of comparing the opportunity cost of volunteering to leisure time, i.e., non-remunerated, when the opportunity cost of volunteering would be zero). In this method, the value of the volunteering time will have a different meaning depending on how much that person gets in paid-employment, which is why it is difficult to measure the opportunity cost for volunteers that are not in paid-employment. The opportunity cost values the volunteer’s time at the value of the individual’s

professional life (number of hours multiplied by professional wage of the volunteer). If the individuals were to do some other activity, for example a doctor paid £100 per hour in a hospital and volunteering in a homeless shelter as a cook at a rate of £10 per hour, meaning the opportunity cost would be valued at £100 per hour and not the £10 per hour for the physical task. This has lead to a discussion regarding the idea of a professional person working an extra hour in their professional capacity and donating the value of the hour worked to the voluntary organisation rather than volunteering one hour of time (assuming the hour worked would be spent doing a less valued task than what the professional job is).

There is also the leisure time opportunity cost method, where the interest here is what reasonable amount of payment an individual would require if the volunteer work were to be financially compensated. It takes account of the volunteer's actual paid employment wage rate. This method puts too much emphasis on individual's expectations, which can be all different at any given time. In addition, an often used valuation of opportunity cost is the declared market proxy (or contingent value), where the value of the goods and services are determined by what the volunteer, providing the goods and services, feels his volunteer time is worth if it was not supplied for free.

Using an observed market proxy of the replacement cost method, where the organisations are interested in how much labour they would have to employ to carry out the work done by their volunteers, allows a clear picture of the organisations' expenditure and value. This method takes into account the different types of activities but assumes the organisations would actually be willing to pay for the activity. As the replacement wage is unique to an individual volunteer, it is mainly suitable to examine a small-scale volunteer force. The replacement wage for an individual volunteer can be found by using different methods. The main method in Scotland is to use the 'Annual Survey of Hours and Earnings (ASHE) Analysis by Occupation', which is carried out by the Office for National Statistics (2009). A replacement wage can also be found by pay rates advertised at the local job centre or by examining pays within an organisation of paid employees.

Another form of an observed market proxy is the industry wage method, which is concerned with how much it costs in the labour market for a volunteer that does 'maintenance activities'. This method has no concerns of what the volunteer does in the paid labour market, i.e., if the volunteer is doing an industry-related job, they will be valued at that industry wage. Declared market proxy (or contingent value) can also be used as a valuation of the replacement cost. This time, the beneficiaries themselves determine the value of the goods and services, i.e., the amount they would be willing to pay if the goods and services were not supplied for free.

The economic output, referred to by Salamon et al (2011) as the economic social benefit, is the output the volunteer labour produces. They suggest that measuring this can take two forms. The first one being that the services performed have a reasonable market counterpart (an observed market proxy), which determines the values of the output. The second being that, in the absence of a reasonable market counterpart, a declared market proxy can be used to ascertain what the volunteer managers or the service users would pay for the output. These various economic measurements, among others, can be used when working out the economic impact of volunteering. A number of approaches used to evaluate the economic impact (tangible and intangible) or to measure non-market goods and services, at an individual (micro) level and at an organisational level, will now be discussed.

6.8.1 VIVA

The Volunteer Investment Value Audit (VIVA) is a method created by Gaskin in 1996 to calculate the economic value of volunteering, and it is appropriate for different sizes of voluntary organisations. This VIVA approach is used by the Institute for Volunteering Research (IVR), an organisation brought together by the Centre for Institutional Studies and Volunteer England, and is the most commonly used method for that purpose in England (IVR, 2003). It is referred to as a measuring tool that has quantifiable, validity and informative attributes.

The VIVA assesses the 'outputs' of volunteer activities, e.g., the value of volunteer's time, against the 'inputs', e.g., the resources used to support the volunteer's activity. The input variables are the total volunteer investment that is laid out by the VIVA.

They include the advertising and recruitment of volunteers, the induction, training, and administration of the volunteers, the support and recognition, the supplies and equipment for the volunteers to carry out the activity, the supply of food and accommodation, the volunteer's insurance, expense reimbursement, and volunteer-related building costs. They also include the other paid-staff, volunteer managers, and co-ordinators costs.

The output calculations, or total value, involves multiplying the number of volunteers by the average hours that have been volunteered on a weekly basis, also multiplied by the average hourly comparable wage rate, i.e. the shadow wage (or market wage, replacement value), giving a notional volunteer wage bill. The wage rates are usually obtained from the Annual New Earnings Survey produced by the Office of National Statistics. For example, the hourly wage rate for an individual worker that volunteers in a nursing capacity would have the equivalent wage rate as a paid-nurse working in a hospital. The total number of hours this individual has volunteered in a week is multiplied by forty-eight (the number of working weeks in a year), resulting in the total number of volunteer hours for a year, which is then multiplied by the hourly rate of a paid-nurse. We finally increase this value by usually twenty per cent, corresponding to the cost of employer overheads. The reason for this is that, while employers pay the actual wage, they also pay national insurance and holidays, as well as other benefits.

Once these two calculations are worked out, it then allows the voluntary organisations to work out their own VIVA ratio of input / output to show the worth and cost of the volunteering, and give measures of the cost-effectiveness in volunteer activities. If the value is, for example, £100,000 and the expenditure is £10,000, then the ratio is ten, meaning that for every £1 spent on the volunteer, the organisation gets back ten times in the value of work the volunteers does, or a ten-fold return on the organisation's investment in volunteering. This ratio can be helpful and used by any organisation wishing to find out how much their volunteers add value, but it must be kept in mind this ratio does not always show an accurate picture of the value of the organisation.

A low VIVA ratio does not necessarily mean the voluntary organisation in question does not get value for money. This could show the organisation is spending more on investing in volunteering, perhaps. In Scotland, according to the Department of Social Responsibility (2003), there are nearly 8 million hours volunteered per month. In using the VIVA method for Scottish voluntary organisations, they found that every £1 an organisation spends on supporting volunteers creates a notional payback of up to 14 times that figure. In addition, in investigating how many hours of paid-staff were needed to support the volunteer labour, Baker and Murawski (1986) found a similar ratio between paid-staff to volunteer support ratio, measured in time units of hours, with an average 1:13.5. A study carried out for the Edinburgh voluntary sector found that, for every one hour of volunteer managed time spent on health and social care, they received four hours of voluntary labour (Volunteer Edinburgh, 2007).

6.8.2 Measuring Volunteering: A Practical Toolkit

'Measuring Volunteering: A Practical Toolkit', was developed by the United Nations and the Independent Sector for the International Year of Volunteers in 2001. It is designed as a survey that measures the 'quantitative dimensions' of volunteering, rather than the value of volunteering. The toolkit explains and demonstrates how to plan the research for the survey. This includes how to design the survey, how to collect, process and disseminate the information, and it provides a guide on what results should be presented that will be useful to the organisation and others.

The practical toolkit highlights that a quantitative survey of volunteering is valuable as it can demonstrate to current, and future shareholders, that the voluntary organisation is making a positive contribution to society and is worthy of funding. The toolkit also enables the collection of current data, which can facilitate decisions for policymakers about volunteer improvements, among others. Further, Dingle (2001, p.6) suggests the practical toolkit "Encourage citizens to volunteer by demonstrating the social and personal benefits that volunteering can bring…Educates the media and the private, public, and non-profit sectors about volunteering…Demonstrate links between national and community service".

6.8.3 EFQM

The EFQM Excellence Model 2010 was developed by for Quality Management, and it is used by the British Quality Foundation (2010). The model's framework workbook is based on self-assessment of measuring the organisation's strengths and highlighting areas that need improved over all the organisation's activities. The results allow the organisation to understand the impact it is making. The framework is split into two sections. First is the 'enabler', which main focus is on how the organisation operates and manages its staff, volunteers, and resources. It also focuses on the organisation's plan, strategy, and monitoring. The second section is the 'results', which focuses on the satisfaction of the staff, volunteers, service users, and the community they operate in. Examining these two sections together allows the voluntary sector to see if there is a value being added by the organisation.

6.8.4 The Big Picture

The Big Picture framework was developed by the SCVO, as a general self-assessment tool for voluntary organisations, which comes in the form of a workbook. There are four main sections in the model's framework, and within these four sections, there are a further twenty-four sub-sections, as shown in Table 6.18. This framework, which assesses the impact of the volunteer organisations, advocates continual improvement within it. With this framework, the enablers are what make the organisation happen and the organisation is then defined by the results (impact) it makes.

Table 6.18 Big Picture Framework

Enablers	***Results***
Direction	***Stakeholder Satisfaction***
Governance Purpose Strategy & Policy Staffing Culture Legislation & Registration	People We Help Paid Staff Volunteers Funders Partners Influencers
Processes	***Positive Impact***
Planning Managing People Managing Money Managing Other Resources Managing Activities Monitoring & Review	Strategic Outcomes Financial Health Evidence of Standards Development Public Profile Impact on Society

Source: The Big Picture (2010)

6.8.5 Goulbourne and Embuldeniya Toolkit

One of the measuring methods used in Canada has been shown to be useful in its application. This method was devised by Goulbourne and Embuldeniya (2002), while working for the Canadian Centre for Philanthropy. They introduced a toolkit with eight measures that organisations can use to show the economic value of the volunteers to the organisation and the investment the organisation makes in its volunteers. These measures also aim to find out the amount of 'human resource capacity' the volunteers bring to the organisation, and can be broken down into three sub-areas, as shown in Table 6.19.

Table 6.19 Goulbourne and Embuldeniya Toolkit

Human resource productivity measures *(describe how volunteers extend your organisation's personnel resources beyond your existing budget)*
Estimates of the Value of Volunteer Activity (EVVA) Document the economic value of the time your volunteers contribute by assigning a wage rate to each hour of volunteer activity.
True Value Added to Personnel (TVAP) Calculate the true economic value of volunteer contributions by assigning wage rates and benefits to each hour of volunteer activity.
Full-time Year-round Job Equivalent (FYJE) Convert your organisation's total number of volunteer hours to the equivalent number of full-time positions.
Percent Personnel Value Extended (PPVE) Demonstrate the degree to that volunteers extend the value of your organisation's personnel.
Volunteer program efficiency measures *(provide a context for explaining the value of your volunteer program)*
Organization Volunteer Investment Ratio (OVIR) Find out your organisation's return on the money it invests in its volunteer program.
Volunteers to Paid Staff Ratio (VPSR) Shed light on the volunteer management structure of your program by comparing the number of volunteers to the number of paid staff in your volunteer program.
Community support measures *(describe volunteer contributions as a form of community support)*
Volunteer Capital Contribution (VCC) Calculate the out-of-pocket expenses that volunteers incur and do not claim as an "in-kind" donation to your organisation.
Community Investment Ratio (CIR) Compare the amount your organisation invests in your volunteer program to the investment volunteers make in terms of their time.

Source: Goulbourne and Embuldeniya (2002)

6.8.6 Inter-Cultural Competence Assessment for Volunteers

Inter-Cultural Competence Assessment (INCA) is an assessment that organisations use when their work take them into multi-cultural environments in order to provide their service. This enables a voluntary organisation to measure the value a volunteer may have rather than to measure the impact of the organisation outputs are. The assessment was designed by The INCA Project, funded by Leonardo da Vinci II, (2004) to be a diagnostic tool in the assessing, measuring, developing and recruitment of employees.

The INCA is made up of three different types of testing. The first type is questionnaires for the employee to fill in. The answers are measured against the six dimensions of intercultural competence (tolerance of ambiguity, behavioural flexibility, communicative awareness, knowledge discovery, respect for otherness, and empathy), under three competency levels (basic, intermediate, and full). These

questionnaires are designed to help the assessors find out information on the employees' personal experience in intercultural situations and professional background. The second type is scenario testing, where the employee is given video-based and text-based scenarios. Questions are asked regarding these scenarios, and the answers given are again measured against the six dimensions of intercultural competence. The third type is role-play, testing where employees play a role and the assessors play the partner. The assessors will assess the behaviour against the six dimensions of intercultural competence.

6.8.7 Social Impact measurement for Local Economies (SIMPLE)

SIMPLE is a 3-day programme, developed by Social Enterprise London and the University of Brighton, in which voluntary organisation managers attend. It is an impact assessment framework, which allows the organisations to identify how they affect the community by finding the right information and how to turn the data into a measurement. The framework has five sections to help the organisation complete the SIMPLE program and show their impact, which are; 1) Scope it - by reviewing forces that drive the organisation, its mission, objectives, priorities and activities, 2) Map it - linking the organisation's activities with the effects of carrying out the activities, 3) Track it - allocate impact indicators to the organisation's outcomes, 4) Tell it - put impact data into a social comparison background, 5) Embed it – by carrying this out frequently and accurately, the SIMPLE framework will become very effective. With this assessment, the organisations can monitor their measure of value adding over time.

6.8.8 Perry and Imperial Assessment

Perry and Imperial's (2001) research focuses on volunteer organisations' ability to find out service-related information in which to assess the outcome of volunteer input. They advocate examining the psychology of volunteer service to assess the outcome of service and those attitudinal outcomes (e.g., the civic responsibility of the volunteer and self-esteem) that can be measured. They suggest a framework of attributes of the volunteer, including age, and attributes of the voluntary service, for

instance the nature of the service, can be brought together to give an overall value of the volunteer and the service they provide.

6.8.9 Third Sector Performance Dashboard

The 'Third Sector Performance Dashboard' assessment tool was developed by Social Firms UK, and it can be used by any sizes of voluntary organisations. The design is simple and takes a relatively short time to complete. The Dashboard assessment tool comes in the form of a CD-Rom and has templates of main volunteer organisation objectives and measurements, changeable to suit individual organisations. This assessment allows the voluntary organisation to monitor their own progress in achieving its objectives through a traffic light system. The assessment comes under headings including governance, finance/funding, and people and work-life balance. According to Social Firms UK (2009), the voluntary organisations can use this assessment as a way to monitor and track performance against objectives, allowing stakeholders to be updated on the progress made by the organisations.

6.8.10 Volunteer Impact Assessment Toolkit

Volunteer Impact Assessment Tool Kit is a self-assessment toolkit. It is developed by the Institute for Volunteering Research and is advocated by VDS (2007a). This toolkit can be used by any sizes of voluntary organisations to examine the impacts the volunteer activity creates. It also uses a traffic light system to score the impacts in order to let the organisation know what the volunteer is doing well and what it is doing not so well. The toolkit comes in the form of a CD-Rom and manual with readymade questionnaires for the four stakeholders involved (i.e., the volunteers, the users of the service, the organisation, and the community the organisation operates in), and also information on using other data-gathering tools including focus group, audit forms and volunteer diaries. The impacts the voluntary activity has on the four stakeholders are explained under the headings of physical, human, economic, social, and cultural capital. The terms of the five capitals are laid out in Table 6.20 as a matrix to show the possible impacts in each box.

Table 6.20 Volunteer Impact Assessment Tool Kit Matrix

	Volunteers	***Organisation***	***Service Users***	***Wider Community***
Physical Capital	Tangible benefits accruing to volunteers (training courses attended; social events; certificates, etc.)	Identifiable outputs (number of meals delivered; trees planted etc)	Enhanced quantity & quality of services provided	Enhanced quantity & quality of services provided
Human Capital	Personal development (confidence; self esteem etc); Vocational skills (IT; public speaking; team work, etc.); Employability	Impact of volunteers on staff development; diversity of workforce	Personal development & skills enhancement of users	Happier communities; better skilled citizens
Economic Capital	Individual costs of volunteering (expenses; opportunity- costs, etc.); & individual value (training courses attended)	Value of volunteering minus cost of volunteering	Access to services that would otherwise have to be paid for	Enhanced value for money in public services (less truancy; lower crime; increased health)
Social Capital	Increased trust; higher rates of participation in public affairs, etc.	Increased status & reputation for organisation in the community; enhanced recruitment & retention of staff & volunteers	Increased networks; enhanced trust & participation	Increased networks; enhanced trust & participation
Cultural Capital	Attachment to cultural identity; appreciation and understanding of other cultures	Services more reflective of cultural diversity within community	Appreciation & understanding of other people's cultures	Appreciation & understanding of other people's cultures

Source: Volunteer Development Scotland (2007a)

6.8.11 Social Return on Investment

Social Return on Investment (SROI) is the measure advocated by the Scottish Government (2010c) to evaluate the Scottish voluntary organisations. SROI is an outcome based tool that helps voluntary organisations identify the social value, economic value, and environmental impact of their activities, "...it seeks to reduce inequality and environmental degradation and improve wellbeing by incorporating social, environmental and economic costs and benefits" Cabinet office (2009, p.8). There are two types of SROI, one is evaluative SROI, which is based on the

evaluation of the actual outcome, and the second is forecasted SROI, which examines predictions of the future social value that may be created if the outcomes are achieved, but is rarely used. The principles of SROI are based on the following: value the things that matter, do not over-claim, only include what is material, involve stakeholders, be transparent, understand what changes, and verify the result. The framework allows the voluntary organisation to see if it is adding or destroying value, by using financial proxies. To carry out a SROI analysis there are six stages set out by the Cabinet office (2009) shown in Table 6.21.

Table 6.21 SROI, Six Stages of Evaluation

Six Stages of Evaluation
1) Establishing scope and identifying key stakeholders - have clear boundaries and know who is involved and how
2) Mapping outcomes – by working with stakeholders, develop an impact map, or theory of change, which highlights relationship between inputs, outputs and outcomes
3) Evidencing outcomes and giving them a value – look for information that shows if outcomes are complete and value
4) Establishing impact – the outcomes that are completed and valued need then to be examined, the aspects of change that would have happened anyway or are a result of other factors are eliminated from consideration
5) Calculating the SROI – calculate the social return generated by an activity to the investment required to run the activity that basically adds up all the benefits, subtracting any negatives and comparing the result to the investment
6) Reporting, using and embedding - embedding good outcomes processes and verification of the report and share findings with stakeholders and responding to them

Source: Cabinet Office (2009)

In Scotland, the government introduced the Social Impact Scotland (SIS) in March 2011 (previously known as the SROI Project), in order to use a standard form for measuring social return on investment throughout the Scottish voluntary sector organisations. The project consortium involves Charities Evaluation Services, Forth Sector, SROI UK, the Association for Chief Officers of Scottish Voluntary Organisations, the Social Enterprise Academy, the New Economics Foundation, Haldane Associates, New Philanthropy Capital, and the Social Audit Network. They have created a SIS website to help guide users and offer an interactive presentation on how to work through an evaluation. In addition, training is provided by workshops and seminars. There is a checking service provided to ensure the SIS has been performed properly.

The Enterprise Minister Jim Mather, for the Scottish Government (2010c, p.1), stated, "The Scottish Government highly values the contribution of the Third Sector to increasing sustainable economic growth in Scotland...This project will be a valuable tool in demonstrating the effectiveness of the Third Sector and the positive impact it can have on the lives of people around Scotland". An example of a project that has undergone a SROI analysis is a project established in 2005, known as the Linkwide's Older Person's Advice Project (Maxwell, 2009, p.1), which provides a service to ensure that older people (60+) are aware of their financial rights, as well as other advice. Using the SROI analysis in 2009, the results showed a variety of positive outcomes "...increased household income, improved quality of life, reduced fuel poverty and reduced demand on NHS services". The final calculated result, provided by the SROI analysis, showed that every £1 invested in this project brought about a social return of £27.53 for the Linkwide's Older Person's Advice Project (as of 2009).

6.9 Measuring the Value of the Voluntary Sector (Macro Level)

The development of an international measurement of the value of the voluntary sector has been slow to realise. In 2003, the United Nations created a handbook (UN 2003) to guide countries on how to deal with the voluntary sector accounting called 'Handbook on Non-Profit Institutions in the System of National Accounts' (the UN NPI Handbook). These satellite accounts allow countries to see the size and scope of their non-profit sector. The handbook recommends that each country produces regular non-profit institutional satellite accounts that differ from the national accounts, in that they allow for flexibility in the classifications, definitions, and accounting rules in such a way to improve the analysis of the accounts in certain social-economic areas.

According to Salamon et al (2010), the following countries have completed NPI satellite accounts; Belgium, Czech Republic, France, Norway, Canada, USA, Australia, Japan, New Zealand, Israel and Mozambique. The following have committed their countries to implementing the NPI satellite accounts; Denmark, Hungary, Netherlands, Slovakia, Poland, Portugal, Spain, Russia, UK, Italy, Luxembourg, Germany, Sweden, Argentina, Chile, Brazil, Uruguay, Peru, Mexico,

Hong Kong, India, Bangladesh, Philippines, Pakistan, Korea, Kyrgyzstan, China, Thailand, Vietnam, Cameroon Egypt, Kenya, Tanzania, Mali, Lebanon, Morocco, Jordan, South Africa, Kuwait, Uganda and Nigeria. In Scotland, there have been no plans to use the satellite accounts and instead work has been continuing on the SROI evaluation through Social Investment Scotland.

The International Labour Organisation (ILO) (2011a) approved the first official international manual on 'The Measurement of Volunteer Work' (ILO, 2011b) produced in cooperation with John Hopkins Centre for Civil Society Studies and an International Technical Experts Group. The manual was launched in March 2011 (coinciding with Europe's 2011 Year of Volunteering). This manual is designed to be used by each country's national statistical agency, in order to measure the work being carried out by the voluntary sector as a whole. This measurement utilises existing periodic labour force surveys or similar research resources such as household surveys.

The ILO suggests the benefits of using this manual are five-fold. It allows for comparability, which is something that is difficult to find elsewhere. The implementation of the manual is sensitive to cultural, traditional, and language difference; therefore, it is said to have feasibility. The cost of implementation is also said to be minimum because it uses data from current research initiatives such as the household surveys. It uses the minimum of questions and gives reliable output. The countries to adopt the manual by autumn 2011 are Poland, Hungary, and Norway (Salamon, 2011b).

At a macro level, interest in the voluntary sector's productivity as a whole has intensified in Scotland over the years, because of the sector's increase in financial status and its increasing presence in public services provisions and procurement of public service contracts. In many ways, the voluntary sector cannot be economically measured, as it is difficult to put a financial price on areas for instance social cohesiveness, relationships among persons and intrinsic behaviour. As some suggest, placing an economic value on volunteering activity can miss the point of what volunteering is about. The European Volunteer Centre (2008, p.47) points out difficulties in measuring reinforced mutual understanding and respect, a feeling of

being loved and cared for, a sense of belonging to a community and the personal happiness that is derived for volunteering. They warn that, "Focusing on the economic value risks reducing volunteering to a purely 'financial' equation, taking attention away from its intrinsic, immeasurable value".

In addition, the voluntary sector does not operate in an efficient free market because of imperfections including having to adhere to government policies, market failure, and the lack of a clear market price for the voluntary service. All of which conspire to make the environment in the voluntary sector operates very difficult to value. The value of all goods, all resources used and what is then produced by the sector as a whole needs to be calculated, in order to work out the economic value of the voluntary sector, either as a value adding or a value loss. The voluntary sector's impact is more than just having direct economic benefits. To see the return on private and government investment in the sector, with increased accountability and improved administration, it is easier to see this investment return and efficient infrastructure in a numeric form. It is assumed that private and government funding are likely to happen more frequently if the impact of their funding is visible with a fuller picture of the size and scope of the sector available.

6.9.1 Measuring the Economic Value of the Scottish Voluntary Sector

Measuring the effectiveness of the voluntary sector by way of a financial proxy is not as easy as it is in the case of the private sector, which is usually the bottom line profit. Measuring the financial effectiveness of the voluntary sector can be costly because of the need to gather the information from such an array of independent organisations. The process of working out a value for the volunteering activity and then scaling it up to include all the sector is complicated and time consuming, because of the lack of organisational choreography within the voluntary sector. There are ways of calculating the economic value of the volunteers' work, for the voluntary sector as a whole.

One such way is the use of the national minimum wage rate, currently £5.80 per hour (DirectGov, 2011), which can reflect the market value of volunteer labour. This can significantly underestimate the true value of the voluntary activity. The median wage

rate can also be used to compare the difference in market value between the male and female volunteers but it does not necessarily show different rates of pay for comparable jobs as it is affected by work patterns, e.g., length of service, part-time, or fulltime. The median wage may also overestimate the market value of the volunteer labour. As a result, to examine a large-scale volunteer force for the whole sector, a general rule is to use the average wage method, even though it does not distinguish between skill levels or the work being performed by that individual volunteer.

To calculate the economic value of volunteering in Scotland, the average wage value is the establish methodology used (VDS, 2008). The average-wage value method shows the number of full-time jobs concerned, that is based on the percentage of the Scottish population that carry out volunteer work with various hours given. Once research has been done to ascertain the number of volunteers (as percentage of the population), the next question of interest is the number of hours per month that volunteers supply. The number of hours supplied per month is then multiplied by twelve months, divided by thirty-five hours (average working week) and divided again by forty-eight (the number of average weeks worked in one year). This result gives the number of full-time equivalent jobs per year. The Scottish national weekly wage amount used is published by the Office for National Statistics in their Annual Survey of Hours and Earnings (ASHE) report. The number of average working weeks is then multiplied by the Scottish national weekly wage and an additional twenty per cent is added to account for employer overheads costs, including national insurance, holiday pay and other benefits. This result will give the economic value of volunteering in Scotland.

Using the observed market proxy of the average wage method (assuming the opportunity cost for the hour volunteered is the same as the cost of the average paid hour), the economic values of volunteering in Scotland in recent years are as follows:

In 2006, there were 134,250,168 hours of voluntary labour supplied by 1,331,552 volunteers (Volunteer Development Scotland, 2007b), the average working week was 35 hours, and the Scottish national weekly wage was £432 (ONS, 2006). When adding to this 20 per cent for the employers' overheads, it gives an economic value

of £1.99bn, which is equivalent to 79,910 full-time jobs, as demonstrated by the following formulae:

$$\frac{134{,}250{,}168}{35} \times 432 \times 1.20 \approx 1.99 \times 10^{9}$$

In 2007-2008, there were 142,000,000 hours of voluntary labour supplied by 1,300,000 volunteers (SCVO, 2009), the average working week was 35 hours, and the Scottish national weekly wage was £460.10 (ONS, 2008). When adding to this 20 per cent for the employers' overheads, it gives an economic value of £2.24bn, which is equivalent to 84,523 full-time jobs, as demonstrated by the following formulae:

$$\frac{142{,}000{,}000}{35} \times 460.10 \times 1.20 \approx 2.24 \times 10^{9}$$

In 2008-2009, there were 131,000,000 hours of voluntary labour supplied by 1,200,000 volunteers (SCVO 2010e), the average working week was 35 hours, and the Scottish national weekly wage was £473.60 (ONS, 2009). When adding to this 20 per cent for the employers' overheads, it gives an economic value of £2.13bn, which is equivalent to 77,976 full-time jobs, as demonstrated by the following formulae:

$$\frac{131{,}000{,}000}{35} \times 473.60 \times 1.20 \approx 2.13 \times 10^{9}$$

The method used for this average wage, along with the other ones, is not a perfect way of calculating the true value of the volunteer labour in Scotland. The European Volunteer Centre (2008, pp.38–39) points out that this monetary valuating method does not take into account Scotland's particular voluntary sector dynamics:

> Some forms of volunteering appear as not 'value for money'. Matching the economic value might lose the 'added value' element of volunteering as spontaneous and altruistic activity…In Scotland, the overall image of volunteering until now has not been boiled down to purely economic figure due to the government commitment. The authorities recognise formally that volunteering contributes not only in economic terms, but that it also has an impact on health, wellbeing, perceived personal happiness, social cohesion, etc.

6.10 Current Initiatives in the Voluntary Sector

Improving standards and performance in the Scottish voluntary sector is important to its future sustainability. One of the ways the sector attempts to improve standards and performance is through a program known as 'Investors in Volunteers' (IV). The Scottish voluntary sector, as mentioned previously, is made up of different sizes and structures. They provide many different services and deliver these services in many different ways. As a result, it can be difficult to create a standard so that all the organisations can meet the same 'gold standard' level. Regardless of these difficulties in achievement, the IV award is given out to voluntary organisations that demonstrate high standards of management and performance.

The IV covers the whole of the UK in quality standard for every organisation that involves volunteering in their work. In Scotland, the quality standard is in the domain of VDS. They list their management areas are (1) Planning for volunteer involvement, (2) Recruiting volunteers, (3) Selecting and matching volunteers and (4) Supporting and retaining volunteers. The VDS (2010a, p.1) states that "The Standard enables organisations to comprehensively review their volunteer management, and also demonstrates their commitment to volunteering…Investing in Volunteers is the best tool to help organisations involving volunteers achieve this good practice, as well as receive recognition for it".

Given the concern with the IV award mostly being achievable by national bodies, within the Scottish voluntary sector, than the more numerous small organisations, the Older Peoples Forum (2009) suggested a possible compromise. This suggestion was to introduce a tier of lower levels of award of achievement, with the same core values; however, it would have requirements that are more achievable for smaller voluntary organisations. There currently are seventy-eight voluntary organisations that have been awarded IV accreditation (VDS 2010b) in recognition of their commitment to provide their volunteers with an excellent level of management and support within the four areas.

Another initiative is the Employee Volunteering Program (EVP), it has the potential to increase the volunteering pool and allow access to all ages of the working

population. The theory behind this EVP describes an employee volunteering as a corporate social responsibility, which contributes to the social capital and brings a number of other benefits,

> In socialising the capital, the companies bring their time, knowledge and other resources to renew social networks, trust and norms of cooperation - the dimensions of social capital that provide a structure for future exchanges between companies and communities…it contributes to social capital, it therefore brings opportunities for building business-community partnerships and mobilizing resources whilst also benefiting employees, community organisations and the public at large", Muthuri et al (2007, pp.25–26).

Further, Porter and Kramer (2006) found a link between competitive advantage and corporate social responsibility, and identified four such areas where they are both linked, i.e., moral obligation, sustainability, license to operate, and reputation, setting out the reasons why organisations should have an employee volunteer program. According to research carried out by Volunteer Match (2008), there were many positive benefits from having an EVP for both the employee and the organisation itself. These include benefits to the employee in the form of improvements in performance, job satisfaction, attitude, and morale. It is said to encourage teamwork, and to promote leadership and skill development. They also found the EVP improves the communication between employees and their supervisors. The company benefits as it helps to build loyalty and trust with its customers and enhances their reputation and corporate image. Further, EVP helps increases employee productivity and retention and facilitates the achievement in strategic goals. Volunteer Match (2008) also found the community benefits from the EVP, e.g., the use of skilled and talented volunteers, it also allows for cost savings and aids in bringing attention to community needs.

Corporate Citizenship (2010) found the EVP was enhancing employees' communication skills as the volunteering allowed them to helping others and coaching people, become more adaptable, become effective in different surroundings, enhance their influencing, and negotiating skills. The skills the volunteers picked up were of importance and relevant to their organisation. The negative points are that, the volunteering program is often found not to be a long-term plan, and can be inconsistent. Even with the short-term and the inconsistencies,

it was found the employee gained an insight of what volunteering is like and keeps their mind open to the idea of volunteering in the future.

For Scotland, the VDS and CSV offer help in setting up an EVP in small, medium, and large companies across the country. Scottish employers have been encouraging their employees to volunteer. VDS (2010c) states that it has helped Scottish companies build up trust and loyalty, it has also helped the employees build up knowledge and new skills and helped bring the employees together as a team, while benefiting the voluntary sector as a whole. The volunteering activity can be done during or outside the company's operating working hours and be paid or unpaid.

6.11 Conclusion

As with most countries, the Scottish voluntary organisations generally have little potential for profit but have a large amount of potential for adding to the supply of public goods and services. When investigating the size and diversity of the Scottish Voluntary sector, it was found the sector is extremely varied, with the larger voluntary organisations being few in numbers but take up a large amount of the resources and funding and employ the largest number of employees. Conversely, there is a high number of small voluntary organisations, which receive little or no income and usually have a very small, if any, number of paid staff. The sector has experienced a steady income growth stream over the last decade or so, increasing from £2bn in 2000 to £4.4bn in 2010. The area to receive the largest share of public spending was the field of social and development (53%). The infrastructure of the sector is built on three tiers with tier one being the frontline organisations who operate throughout Scotland. These frontline organisations are supported by tier two, which are the intermediary organisations. Overseeing all of the voluntary sector organisations are the intermediaries that come under the third tier organisations, which are national bodies including the SCVO and VDS.

In examining the Scottish volunteers, over the period from 2000 to 2010, the average Scottish volunteer is more likely to be female, highly educated, aged between 35–44 year old, in a high income group, working part-time or self-employed, lives outside the 15 per cent most deprived areas, which is in remote rural areas. The average

volunteer devotes up to five hours a week to generally help. It was found the number of volunteers could increase in Scotland if the voluntary organisations exhibited greater flexibility with their delivery of activities and have a more varied selection of activities that people could choose to take up. A number of similarities are found when comparing the Scottish volunteer demographics with what was found in the small sample of other countries at the beginning of this chapter. In all countries, except Italy, women volunteered more across the board than men, and in Scotland, there was a positive correlation between education and volunteering as was exhibited in all countries, again except Italy. In addition, Scotland has a high rate of middle-aged volunteers similar to the USA and Australia but, in addition to this, in Scotland, the highest growth rate of volunteers has been found in the older population, as it was the case in Italy. Lastly, Scotland was similar to most of the other countries in the volunteers tend to be in employment.

In Scotland, it was found that by grouping volunteers by age, a general pattern appears in the most popular volunteering activities. This pattern includes the 16–34 year olds who usually help in voluntary activities involving children, young people and sports and physical recreation. The 35–44 year olds usually help in voluntary activities involving children and young people. The 45–59 year olds usually help in voluntary activities involving young people, children, sports and physical recreation, and religious / faith issues. The volunteers aged 60–74 usually help in voluntary activities involving religious / faith issues and older people, with the 75+ usually help in voluntary activities involving only religious/faith issues. When considering density and the propensity to volunteer, it is found that people living in remote rural (average of 37 %) and accessible rural areas (average 30%) have a higher propensity to volunteer.

The Scottish voluntary sector has a long established history of providing public services as both independent organisations or in partnership with the government. The partnerships with the government to provide public services has lead to many questioning the voluntary sector's independence, flexibility and even the possible loss of volunteers' motivation, while other people see government partnerships as gaining financial stability, facilitating organisational growth, and allowing access to

a larger market. It was also found there are a number of models that have been devised in order to evaluate the effectiveness and impact of the volunteers and the voluntary organisations. Currently the Scottish government is promoting the Social Return on Investment (SROI) as a standard form for measuring social return on investment throughout the Scottish voluntary sector organisations instead of using the UN handbook. The SROI model allows the voluntary organisation to see if it is adding or destroying value by using financial proxies.

The average wage value was used in asserting the economic value of the Scottish voluntary sector as a whole. The Scottish voluntary sector was valued in 2006 at an estimated £1.98bn, by 2009 this increased significantly to an estimate £2.1bn. The sector promotes good practice and a high level of volunteer performance by using the IV awards, which is designed to maintain long-term sustainably within its organisations. The EVP initiative has the ability to increase awareness of the voluntary sector activities, while increasing the pool of volunteer labour supply. EVP has been shown to produce simultaneous benefits to the employee, the company, the community and the beneficiary of the labour service.

Chapter 7 Modelling Volunteer Behaviour and the Impact of the Supply of Volunteer Labour

7.1 Introduction

The contribution of this chapter is to investigate some of the characteristics that may help in determining a Scottish person's choice to participate in volunteering activity or not, by building a statistical model of volunteer behaviour. In deciding the most relevant dataset that would best facilitate the building of the behaviour model, two conditions need to be satisfied. First, it would have to contain substantive and theoretically relevant social-economic information regarding individuals' decision to volunteer or not. Second, it would have to pertain to the Scottish population. As such, several datasets were considered.

The Labour Force Survey (LFS) datasets were initially considered. This survey is carried out quarterly with a sample size of around 60,000 individuals. Currently, their database bank carries 34 separate datasets on the labour market structure for the UK. The datasets contain data on employment, unemployment, and inactivity disaggregated by age, gender, industry, and area. The datasets are also broken down by subjects, e.g., health status, education, and income. Although information is collected on household characteristics (e.g., marital status, cohabitation, and education level), the datasets do not contain details on actual volunteering activity. Only a question on whether the person performed unpaid work within the last week, for a business the individual owns or a family member owns, is asked. The datasets only account for the statistics on paid employees of the voluntary sector; therefore, this dataset was not relevant to the research question.

The British Household Panel Survey (BHPS), which has now been superseded by Understanding Society (US) (wave 2), was also considered. It has a sample size of 14,000 households (around 25,000 individuals) and a booster sample to give Scotland a more accurate representation. The information contained in the original BHPS answers whether the respondent does unpaid voluntary work, but the survey superseding this one does not ask any question regarding volunteering in any of the

three questionnaires (in the Main Adult Questionnaire, Main Questionnaire or the Young Questionnaire); therefore, this was also not a relevant source.

The 2001 census was also considered, as this survey is a rich resource of information asking numerous social-economic questions about the whole of the Scottish population; however, no volunteering questions are asked.

The Scottish Social Attitudes (SSA) Survey conducted annually by the Scottish Centre for Social Research was considered. It has a sample size of around 1,500 but does not contain any questions on volunteering.

The Scottish Longitudinal Study (SLS), which is a linked study using data from census, vital events, NHSCR, NHS and education data, was considered. The SLS is a 5.3 per cent anonymous representative sample of the Scottish population and relies on census data, which has no data on volunteering.

Samples of Anonymised Records (SAR's), which examine individual and household level census microdata from 1991 (2 per cent total population sample size) and 2001 (3 per cent total population sample size), were considered. Topics included in the SAR's are housing, education, health, transport, employment, ethnicity and religion, but no data on volunteering.

The Scottish Household Survey (SHS) dataset is a repeated cross-sectional study that provides information about the structure, characteristic, and behaviour of Scottish households at a national and local level. The survey is representative of the whole population of Scotland and the adult population of Scotland; therefore, it is assumed to serve Scotland well. A random sample of households and adults is taken annually (since 1999) and the results are reported with a one-year lag. The SHS is not a definitive source of information regarding volunteering, but it does have a dedicated chapter on volunteering in Scotland. The volunteering chapter has a typical sample size ranging between 6,784 and 28,667 people, who do and do not volunteer. This sample contributes to the understanding of the key measurement indicators of volunteer participation. The survey appears to be the most reliable and continuous data held on the behaviour of people that do and do not volunteer in Scotland that

can be found. The main limitation of the SHS dataset is that it is cross-sectional, which does not facilitate the ability to follow individuals over time and only examines Scottish volunteers, preventing any cross country analysis being carried out.

In an ideal world, we would have the ability to both follow individuals over time and compare results with other countries that constitute the UK. Unfortunately, there is no longitudinal data collected, for volunteering in Scotland and anywhere else in the UK, that could facilitate such a comparison. Despite the obvious weaknesses of the SHS dataset, this was considered the most appropriate dataset available to be used in providing information to build the statistical model. Cross-sectional data has been effectively used by others in predicting volunteers' participation (Menchik and Weisbrod, 1987; Van Dijk and Boin, 1993; Vaillancourt, 1994; Riecken et al, 1994; Schady, 2001; Omoto and Snyder, 2002; Attwood et al, 2003; Hackl et al, 2005; Powell and Bratovic, 2007; Prouteau and Wolff, 2007; Czerwinska, 2008; McBride and Lough, 2008 and Bruno and Fiorillo, 2009).

7.2 The Statistical Model

On successfully being granted a special dataset for 2009 (latest available in spring 2011), its analysis showed the sample size was originally composed of 31,770 individuals within private households in Scotland. Within this dataset, a sub-sample of 12,543 individuals were asked further questions on specific topics, e.g., transport, public services, neighbourhood problems, and volunteering. This sub-sample is known as the 'random adult sample' and is made of one adult randomly taken from each household. Only 6,780 individuals in this sub-sample were asked to respond to the question of interest (volunteering), of which 28 per cent said they had volunteered within the last twelve months. This is on these 28 per cent that the following information will pertain.

In this sub-sample of people who had volunteered within the last twelve months, 40 per cent were male and 60 per cent were female. When looking at age, 7 per cent were aged 16–24 years, 13 per cent were aged 25–34 years, 20 per cent were aged 35–44 years, 19 per cent were aged 45–54 years, 17 per cent were aged 55–64 years,

15 per cent were aged 65–74 years, and 9 per cent were aged 75+ years old. Marital status of the volunteers showed that 28 per cent were single, 48 per cent were married or cohabiting, and 24 per cent were separated, divorced, or widowed. When examining education, 14 per cent had no educational qualifications, 14 per cent had O'Grade or equivalent, 14 per cent had H'Grade or equivalent, 12 per cent had HNC/HND or equivalent, 41 per cent had a Degree, a professional qualification, or higher, and 5 per cent had other qualifications.

In looking at employment status, 34 per cent were found to be in full-time employment, 7 per cent were self-employed, 12 per cent were in part-time employed, 29 per cent were permanently retired, 5 per cent were looking after home and family, 3 per cent were unemployed, 7 per cent were in education or training, and 3 per cent were permanently or temporary sick. Examining social-economic status, it was found that 18 per cent were managers, senior officials, or professional occupations, 18 per cent were associate professional, technical & administrative, or secretarial, 12 per cent were skilled trades or personal service occupations, 6 per cent were sales and customer service, process, plant & machine operatives, 5 per cent were from elementary occupations, and 41% were unknown. There was a variety of income levels in the sample, most people were from £15,001–£20,000 (15%), with the least from the £0–£5,000 group (2%).

In looking at deprivation levels, 9 per cent of the sample were from areas in the 15 per cent most deprived areas and 91 per cent were not. Examining area of residence, 35 per cent were from a large urban area, 26 per cent were from other urban, 8 per cent were from small accessible towns, 5 per cent were from small remote towns, 12 per cent were from accessible rural, and 14 per cent were from remote rural area. There was a varied amount of people from each Local Authority, most people were from Glasgow (14%) and the least amount of people was from the Shetland Islands (1%).

Looking at health, 82 per cent had no disability or illness, 5 per cent had a disability, 8 per cent had an illness, and 5 per cent had both a disability and an illness. There was 64 per cent who considered their neighbourhood to be very good, 32 per cent considered it to be fairly good, 3 per cent felt their neighbourhood to be fairly poor

and 1 per cent considered the neighbourhood to be very poor. When examining the number of children, there was 73 per cent that had no children, 11 per cent had one child, 12 per cent had two children and 4 per cent had three or more children.

A logit regression was chosen as it assumes a categorical (or qualitative) underlying distribution, which allows an individual's choice with respect to the decision to volunteering to be modelled. In building the volunteering logit model, using the Stata software, the motivation was to create a model as parsimonious as possible and as a result, using as few independent variables as possible. Out of the large array of possible independent variables found in the literature, a set of thirteen covariates was chosen, They pertain to social-economic and demographic characteristics, shown theoretically to be relevant in the decision to volunteer or not, in order to give a robust empirical understanding of volunteering behaviour in Scotland.

The logit model is non-linear; therefore, the degree of change in the outcome probability (dependent variable or y), related to a given change in one of the independent variables, depends on the levels of all the independent variables. The dependent variable is the log of the odds ratio $(\ln \frac{p}{1-p})$ known as the logit. It is binary in that it has only two states, i.e. it is an observation of an individual's behaviour when faced with deciding between two alternatives that are in this case, to volunteer or not. It also assumes that an agent will have a preference between the two alternatives; therefore, the dependent variable (y) was coded for the event occurring, i.e., to volunteer (1), or not occurring, i.e., not to volunteer (0). The independent variables (or covariates, predictor variables) are sex, age, marital status, level of education, employment status, social-economic status, income level, the Scottish index of multiple deprivation (SIMD), area of residence, Local Authority, health status, presence of children and neighbourhood satisfaction rating. As a result, if p is the probability of y being 1, i.e., p = prob (y=1), the logit equation can be expressed as:

$$\text{logit}\,(p) = (\log \frac{p}{1-p}) = \beta_0 + \beta_1 \times Sex + \beta_2 \times Age + \beta_3 \times Marital\ Status +$$
$$\beta_4 \times Education + \beta_5 \times Employment\ Status + \beta_6 \times Social\text{-}economic\ Status +$$
$$\beta_7 \times \text{Income} + \beta_8 \times Deprivation\ Level + \beta_9 \times Area\ of\ Residence + \beta_{10} \times Local$$
$$Authority + \beta_{11} \times Health\ Status + \beta_{12} \times Neighbourhood\ Satisfaction + \beta_{13} \times Presence$$
$$of\ Children$$

Where possible, for each covariant, the category with the highest number of observations was used as the reference. The model requires an individual weighting, because of the sampling error that occurs in the Scottish Household dataset, where the sample weight represents the inverse of the probability that the observation is included. The model's null hypothesis (H_0): β=0 is that the independent variables will have no effect on the dependent outcome, with an alternative hypothesis (H_1) that an effect will be present. When building a logit regression, the assumption is that the logit outcome variable is a linear combination of the independent variables. With this in mind, it is important to ensure the logit function is indeed the correct function to use, while ensuring that the independent variables that have been included are appropriate, and that the logit function is a linear combination of them. Logistic regression facilitates the transformation of the limited range of a probability, which has been constrained to a range of (0,1), into a full range of negative infinity and positive infinity (making the transformed value more appropriate fitting using a linear function).

Therefore, to assess whether this specification choice is the correct one for this model, a link test was performed. The link test in Stata is based on theory from both Trukey (1949) and Pregibon (1979), This tests whether the model is correctly specified or not, whereby no other significant independent can be found except inadvertently. The test uses a linear predicted value and a linear predicted value squared to recreate the model. The linear predicted value should be a significant predictor and the linear predicted value squared should be an insignificant predictor as it has no explanatory power. The link test results for the model show the linear predicted value has a p-value of <.001 and a linear predicted value squared p-value

of 0.22; therefore, it can be confidently assumed the model has not omitted any additional significant variables and the correct link function has been specified.

When deciding which of the independent variables were significant, each covariates in the model has been selected initially by substantive and theory relevance, and next by using maximum likelihood with a Wald test (a Wald test was carried out as opposed to the likelihood ratio test, because of the use of a sample weight within the logit model (Tardanico, 2010)). Rothenerge (1984), Green (2003) and Long and Freese (2003, p84) suggest there is no superior option "With a Wald test or Likelihood Ration test it is unclear which is preferred, neither is uniformly superior". Further, according to Stata, if a pweight is specified, given that the standard errors are based on robust variance estimators, likelihood ratio tests are not appropriate. The null hypothesis is H_0: $\beta_k = 0$ (for the Wald test to reject the H_0, we need the smallest differences between the estimates and hypothesis values and large curvature of the log-likelihood function, to add certainty to the estimates). The Wald test takes account of all the categories of each independent variable and shows the significance of the independent variables as a whole. Table 7.1 lists the results of these tests on the independent variables, showing neighbourhood satisfaction rating and marital status to be insignificant independent variables when taken as a whole.

Table 7.1 Significant of the Independent Variables Overall

Independent Variables	***Prob > Chi 2***
Sex	0.03
Age	<0.001
Education	<0.001
Marital status	0.16
Employment	<0.001
Social-economic status	0.03
Income	0.002
SIMD	0.006
Area of residence	0.001
Local Authority	<0.001
Health status	0.03
Presence of children	0.008
Neighbourhood satisfaction rating	0.79

7.3 The Main Statistical Model

Table 7.2 shows the results of modelling the impact of social-economic and demographic characteristics on the decision to participate in volunteering activities in Scotland.

Table 7.2 The Impact of Social-Economic and Demographic Characteristics on the Decision to Volunteer, Scotland, 2009, Logit Analysis

Independent Variables	***Coef***	***z stat***
Gender		
Male	-	-
Female	0.156*	2.11
Age		
16-24	-	-
25-34	0.111	0.64
35-44	0.528**	2.92
45-54	0.634***	3.39
55-64	0.513**	2.48
65-74	0.582*	2.41
75+	-0.017	-0.07
Marital Status		
Single	-	-
Married / Cohabiting	-0.773	-0.76
Separated / Divorced / Widowed	0.100	0.89
Level of Education		
No qualification	-	-
O'Grade or equivalent	0.479***	3.78
H'Grade or equivalent	0.909***	7.07
HND/HNC or equivalent	1.194***	8.63
Degree, professional qualification, equivalent or higher	1.369***	11.81
Other qualification	0.360*	2.27
Employment Status		
Full-time employed	-	-
Self-employed	0.259	1.72
Part-time employed	0.315**	2.50

Permanently retired	0.595***	3.52
Looking after home & family	0.185	1.07
Unemployed	0.114	0.56
Education & training course	1.172***	5.96
Permanently & temporary sick	-0.085	-0.41
Social-Economic Status		
Managers, senior officials & professional occupations	-	-
Associate professional, technical & administrative and secretarial	-0.088	-0.74
Skilled trades & personal service occupations	-0.310*	-2.24
Sales and customer service, process, plant & machine operatives	-0.498**	-3.08
Elementary occupations	-0.174	-1.00
Income		
0-5,000	-	-
5,001-10,000	0.442*	1.92
10,001-15,000	0.529**	2.35
15,001-20,000	0.759***	3.34
20,001-25,000	0.688**	2.95
25,001-30,000	0.920***	3.83
30,001-35,000	1.029***	4.17
35,001-40,000	0.618**	2.45
40,001-45,000	0.770**	2.85
45,001-50,000	0.666*	2.31
50,001-60,000	0.900***	3.19
60,001-70,000	0.812***	2.41
70,001-80,000	0.508*	1.89
80,001+	1.266***	3.33
Scottish Index of Multiple Deprivation		
Not in 15% most deprived areas	-	-
In 15% most deprived areas	-0.315**	-2.69
Area of Residence		
Large urban areas	-	-
Other urban areas	0.404*	2.26
Small accessible towns	0.307	1.66
Small remote towns	0.123	0.48
Accessible rural	0.501**	2.62
Remote rural	0.819***	3.55
Local Authority		

Glasgow	-	-
Aberdeen City	-0.173	-0.86
Aberdeenshire	-0.228	-0.95
Angus	0.249	0.91
Argyll & Bute	0.069	0.23
Clackmanshire	0.052	0.18
Dumfries & Galloway	-0.035	-0.13
Dundee City	0.349	1.64
East Ayrshire	-0.244	-0.85
East Dunbartonshire	0.096	0.36
East Lothian	0.114	0.46
East Renfrewshire	0.243	1.00
Edinburgh City of	-0.025	-0.17
Eilean Siar	0.559	1.77
Falkirk	-0.300	-1.00
Fife	-0.862***	-3.63
Highlands	0.234	0.89
Inverclyde	-0.297	-0.94
Midlothian	-0.034	-0.11
Moray	-0.273	-0.93
North Ayrshire	-0.138	-0.51
North Lanarkshire	-0.192	-0.89
Orkney Islands	-0.290	-0.82
Perth and Kinross	-0.022	-0.08
Renfrewshire	-0.693**	-2.67
Scottish Borders	-0.018	-0.06
Shetland Islands	0.018	0.05
South Ayrshire	-0.013	-0.05
South Lanarkshire	-0.383	-1.75
Stirling	-0.418	-1.41
West Dunbartonshire	-0.353	-1.12
West Lothian	-0.801**	-2.43
Health Status		
No disability or illness	-	-
Disability	-0.171	-1.01
Illness	-0.360**	-2.94
Both disability and illness	-0.156	-0.93

Presence of Children		
No Children	-	-
One child	-0.189	-1.66
Two children	0.282*	2.20
Three+ children	-0.184	-1.01
Neighbourhood Satisfaction Rating		
Very good	-	-
Fairly good	-0.029	-0.38
Fairly poor	-0.186	-1.00
Very poor	-0.021	-0.07

Intercept -2.988***

*p<0.05, **p<0.01, ***p<0.001

Pseudo R2 = 11.6%

-2 Log-likelihood = -3569

N = 6780

df = 88

7.3.1 Evaluating the Model

Having created the logit model, the next step is to assess how well the model fits the data and to find out if any cases have undue influence on the model, prior to inferences being drawn from it. The model reports robust standard errors. The robust standard error calculations used by Stata are known as the Huber/White/sandwich estimate of variance. This has been derived from Huber (1967) and White (1980) who independently developed robust standard errors, which have the ability to create correct standard errors in the presence of violations of the assumptions of the model, e.g., heteroskedasticity in the residuals, and helps to reduce the risk of a type 1 error (false positive, rejecting a true null hypothesis), resulting in a more acceptable type 1 error rate.

To avoid the risk of creating sample estimates that could be considered unstable and that can result in inflated standard errors, a test for evidence of collinearity among

the independent variables was carried out. This measures the strength of the interrelationships between the independent variables to ensure that one independent variable is not measuring a linear combination of another independent variable. The results produced a variance inflation factor (the amount of inflation of the standard error that may be due to collinearity) and a tolerance level (how much collinearity the model can tolerate). The resulting variance inflation factor ranged between 1.04 and 2.04 (with a mean of 1.34) and the tolerance level ranged between 0.5 and 0.9 (with a mean of 0.75). It shows that, there does not appear to be any correlated independent variables in this model (given it uses micro data, this is not a usual result); therefore, the model does not suffer from a significant collinearity problem and it is assumed to fit well. A correlation coefficient matrix was also carried out, results showed that most variables showed a very weak correlation and two showed a moderate correlation (social-economic status and employment, marital status and age).

To evaluate whether the model as a whole is statistically significant, the log-likelihood chi-square (X^2) statistic can be examined. This takes the difference between the log-likelihood of the full model (with the independent variables) and the log-likelihood of the constant-only model (empty model), then multiplies this by two, resulting in 667 for this model. By examining the probability of obtaining the chi-square statistic, given the null hypothesis is true (Prob > chi-squared), the results show the model is significant with a p-value=<0.001. This means there is such a small probability to obtain the chi-squared statistic if there are no effects of the independent variables (taken together) on the dependent variable. The pseudo R-square is 11.6 per cent, which is derived from the difference between the log-likelihood of the full model (with the independent variables) and the log-likelihood of the constant-only model, divided by the log-likelihood of the constant-only model.

There are numerous tests available in order to assess the overall fitness of the model, a number of which have been selected. The Hosmer and Lemeshow's (1980) goodness-of-fit test brings together the patterns formed by the independent variables and ranks them according to their predicted probability of a positive outcome, and then divides them into a number of equally sized groups. Hosmer and Lemeshow

(2000) suggest that more than six groups should be used. A group size of ten was decided on for this test, which is what is often used in practice. The deciles of risk, as they are known as, or grouping of ten, use the Pearson chi-square when comparing the observed probability with the expected probability within each grouping, to examine how well the predicted frequency and observed frequency match. The first group will have the smallest values of predicted probabilities of a positive outcome and so so on, within each group the mean is predicted and the mean number observed, The idea is that the more accurate the match the better the model fits, resulting in a large p-value. The model shows a Hosmer-Lemeshow X^2 equals to 8.95 on 8 degrees of freedom, which is not substantial, with a p-value of 0.34. This allows the assumption the model is fitting the data well.

In order to determine just how much the model's predictions agree with the data, initially the model's sensitivity (proportion of observations that are correctly classified as volunteering) and the 1-specificity (1 - proportion of observations that have been correctly classified as non-volunteers) versus probability cut-off, was examined. Using sensitivity and specificity for every threshold, the probability showed a cut-off point of 0.28, this yielded approximately 65 per cent of correct classifications for both groups. Further, a receiver operating characteristics (ROC) curve was produced, the Stata routine is based on theory from Peterson, Birdsal and Fox (1954), Tannwe and Swets (1954) and Metz 1978). Plotting sensitivity versus 1-specificity, the results show the area under the ROC curve is 0.73, producing a concave ROC curve above the 45-degree line. The area under the ROC curve shows the probability that, if a person who volunteers and a person who does not volunteer are chosen at random, then the person who does volunteer has a greater predicted probability than the person who does not volunteer. From an established academic point, 0.73 is a fair result, meaning the predictions match the data fairly well. To match perfectly, the area under the ROC curve must reach 1, where there would be 100 per cent sensitivity and 100 per cent specificity (top left hand corner of the ROC curve graph). By contrast, a model that has no predictive power exhibits a 45-degree line on the graph. A classification table was computed and resulted in an overall correct classification of 73.78 per cent.

Another way to examine the model fit is to use a Lowess graph, which compares predicted probabilities to a moving average of the amount of observations that are 1. The objective is to assess if the log odds of the outcome is linearly associated with the covariates. The graph showed that it was reasonably successful at predicting the lower probabilities of volunteering (reasonable linear relationship), where the fractions of observed observations were greater than the predicted probabilities (the dashed line was very close to the diagonal solid line). The model would appear to fit well.

The residuals (or error terms) and outliers can be examined to determine the fit of the model. Stata uses Chi-square test which looks at the difference between the observed frequency and the expected frequency. Examining residuals in a logit regression model is not as informative since they are in a linear regression model, also large residuals within a model are often the penalty paid for using a dataset that has been constructed for other analysis and not specifically for the subject at hand, i.e., volunteering. With this in mind, the model has shown the presence of a number of what could be considered as large residuals within the observations. According to Long and Freese (2003), the assessment of a large residual in a binary regression model is a judgment call based on the researches experience of the dataset. Hosmer and Lemeshow (2000) also suggest that it is impossible to provide any absolute standards for large residuals in a binary regression model. A number of diagnostic techniques were used to examine the influence of the outliers.

A Cooks statistic test, dbeta (deletion displacement) derived from Pregibon (1981) was carried out to examine the change in βhat that can occur if the ith observation is deleted (it is a standardised measure of the difference in the covariant vector that is due to the deletion of the observation along with all the others that share the same covariant pattern). The results showed that observations were clustered under the 0.2 threshold. While a number of observations were higher than the main cluster, there was no isolated high advantage point, meaning the regression has not been distorted (O'Hara Hines and Hines, 1995). An analysis of the hat statistic calculates the Pregibon (1981) leverage or diagonal elements of the hat matrix adjusted for the number of observations that share the same covariant patterns. In the dataset there

are as many covariate patterns as observations, which means that most covariate patterns are unique. The result showed no excessively large value points, meaning that no particular covariate patterns were found to be far away from the average covariate pattern.

Another way used was the d*x*2 statistic which measures the leverage (or the diagonal elements of the hat matrix), adjusted for the number of observations that share the same covariant patterns, set out by Hosmer and Lemeshow (2000). This examines the delta chi-squared influence statistic verses the probability of volunteering or not. This investigates the influence a deletion of a case and others that share the same covariate pattern will have on the Pearson Chi-square goodness of fit statistic. Cases going from bottom right to left are positive outcomes and from bottom left to right are negative outcomes. No isolated large values of d*x*2 were evident, only several points off the curves where there are repeated covariate patterns, but with outcomes that differ. A test that combines the d*x*2 influence test, weighted by dbeta advantage, was also carried out and again, showed no particular isolated influential point. Examining the results of the extreme cases in the graph and also confirming the results by running a Least Likely command in Stata identified a few observations that warranted further investigation.

A deviance test was carried out which looks at the difference between the maximum of the observed and expected log likelihoods. This influence measure, concerning the change in the deviance residuals when a particular observation and others that share the same covariate pattern is deleted, showed there are no influential changes in deviance. Overall, the results showed the outliers were found not to be influential points (or high leverage points), which is a typical result, as categorical data does not suffer too much from leverage unlike other forms of data; therefore, the outliers were left in the model.

7.3.2 Post Estimation Analysis

The estimated parameters of a logit are not usually directly useful for interpreting the relationship between the independent variable and the outcome Using predicted probabilities goes further, in that it facilitates a more complete understanding of the

model by allowing particular values of the covariates to be chosen, in order to provide a more substantive interpretation. For an overall analysis, a dot plot was created and it was found that the predicted probability for each observation covers almost from 0 to 1. In summarising the probability of volunteering, gives a mean predicted probability of volunteering of 28.2 per cent, but the model allows us to see the range of probabilities that can be predicted for an independent variable. Table 7.3 shows the predicted probabilities of volunteering for the independent variables in the model, while holding all other variables at their mean.

Table 7.3 The Main Model's Predicted Probability over the Range of Independent Variables

Independent Variables	***Predicted Probability***
Sex	
Male	23.1%
Female	26%
Age	
16-24	18.6%
25-34	20.3%
35-44	27.9%
45-54	30.1%
55-64	27.6%
65-74	29%
75+	18.3%
Marital Status	
Single	25%
Married / cohabiting	23.6%
Separated / Widowed / divorce	27%
Education	
No educational qualifications	13.9%
O'Grade or equivalent	20.3%
H'Grade or equivalent	28.2%
HNC/HND or equivalent	34.3%
Degree, professional qualification or higher	38.3%
Other qualification	18.4%
Employment Status	
Full-time employed	19.6%

Self-employed	24.1%
Part-time employed	25.1%
Permanently retired	30.7%
Looking after home and family	22.7%
Unemployed	21.5%
Education and training	44.1%
Permanently & temporary sick	18.3%
Social-economic Status	
Managers, senior officials & professional occupations	28.5%
Associate professional, technical & administrative and secretarial	26.7%
Skilled trades & personal service occupations	22.6%
Sales and customer service, process, plant & machine operatives	19.5%
Elementary occupations	25.1%
Income	
0-5,000	14.7%
5,001-10,000	20.4%
10,001-15,000	21.8%
15,001-20,000	26%
20,001-25,000	24.7%
25,001-30,000	29.3%
30,001-35,000	31.6%
35,001-40,000	23.4%
40,001-45,000	26.2%
45,001-50,000	24.3%
50,001-60,000	28.8%
60,001-70,000	27.1%
70,001-80,000	21.5%
80,001+	36.9%
Scottish Index of Multiple Deprivation	
Not in 15% most deprived areas	25.6%
In 15% most deprived areas	20.1%
Area of residence	
Large urban	20.4%
Other urban	27.8%
Small accessible towns	25.9%
Small remote towns	22.5%
Accessible rural	29.8%

Remote rural	36.8%
Local Authority	
Glasgow	27.7%
Aberdeen City	24.3%
Aberdeenshire	23.3%
Angus	32.9%
Argyll & Bute	29.1%
Clackmanshire	28.7%
Dumfries & Galloway	27%
Dundee City	35.2%
East Ayrshire	23%
East Dunbartonshire	29.6%
East Lothian	30%
East Renfrewshire	32.8%
Edinburgh City of	27.1%
Eilean Siar	40.1%
Falkirk	22.1%
Fife	13.9%
Highlands	32.6%
Inverclyde	22.1%
Midlothian	27%
Moray	22.5%
North Ayrshire	25%
North Lanarkshire	24%
Orkney Islands	22.2%
Perth and Kinross	27.2%
Renfrewshire	16%
Scottish Borders	27.3%
Shetland Islands	28%
South Ayrshire	27.4%
South Lanarkshire	20.7%
Stirling	20.1%
West Dunbartonshire	21.2%
West Lothian	14.6%
Health Status	
No disability or illness	25.7%
Disability	22.6%

Illness	19.4%
Both disability and illness	22.8%
Neighbourhood Rating	
Very good	25.2%
Fairly good	24.7%
Fairly poor	21.9%
Very poor	24.8%
Presence of Children	
No Children	24.5%
One child	21.2%
2 Children	30.1%
3+ Children	28.1%

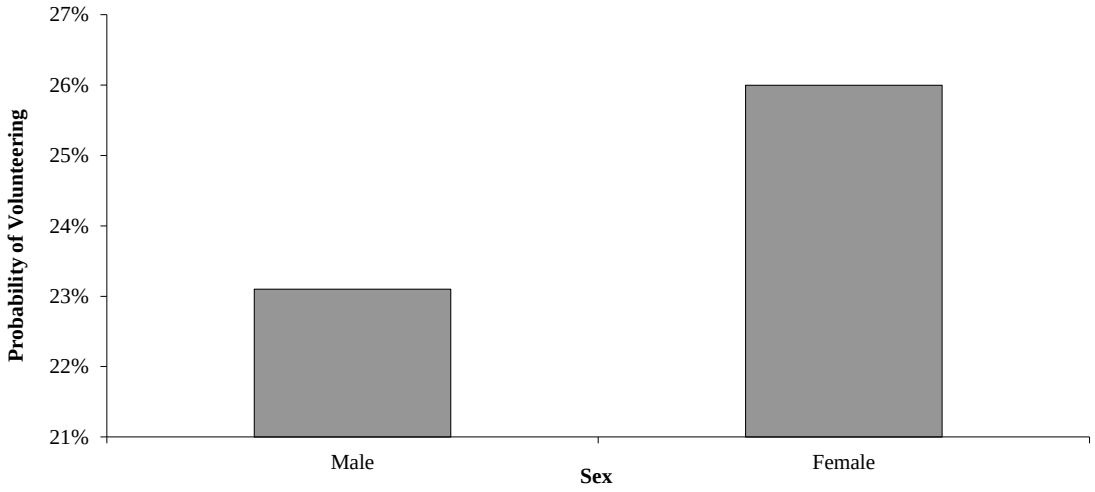
7.3.3 Profile of Volunteer Behaviour

By examining the range of probabilities that can be predicted for an independent variable, it allows us to build up a profile of volunteering behaviour in Scotland.

7.3.3.1 Sex

Females volunteer more than males (Wandersman et al, 1987; Vaillancourt, 1994; Freeman, 1997; Powell and Bratovic, 2007; Pho, 2008 and VDS, 2008), as it can be seen in Figure 7.1.

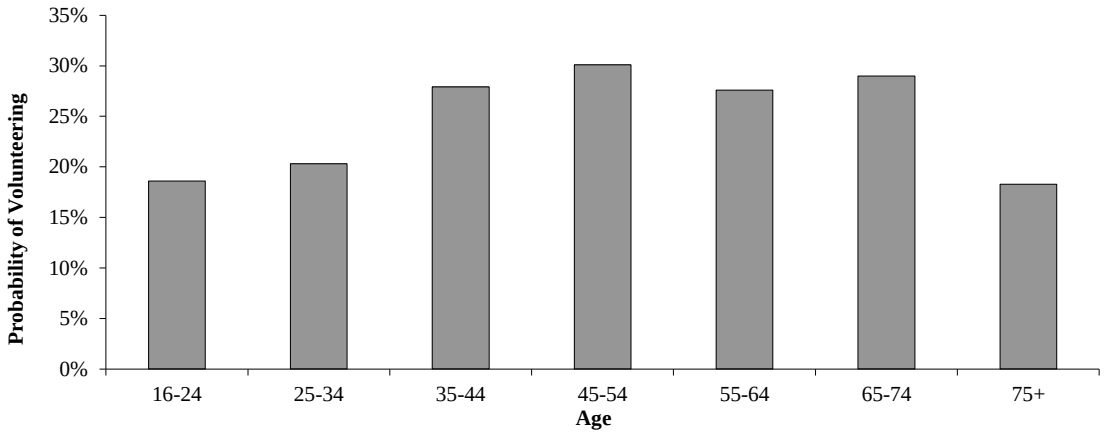
Figure 7.1 Sex and the Probability of Volunteering



7.3.3.2 Age

Volunteering tends to increase with age until the age of 75+ years, after which there is a sharp decline (Erlinghagen and Hank, 2006) matching the levels found in the 16–24 year old age group, as shown in Figure 7.2. The most significant level of volunteer participation is found in the 45–54 year olds. This means this group needs particular attention to be paid to it. Herzog and Morgan (1992) found that voluntary-labour-force participation, in comparison with paid-labour-force participation, is much less likely to decrease sharply with age. Similar findings were found in this model with the 65–74-year-old, making up the second most likely age group to volunteer. In the model the 75+ age group is not significant.

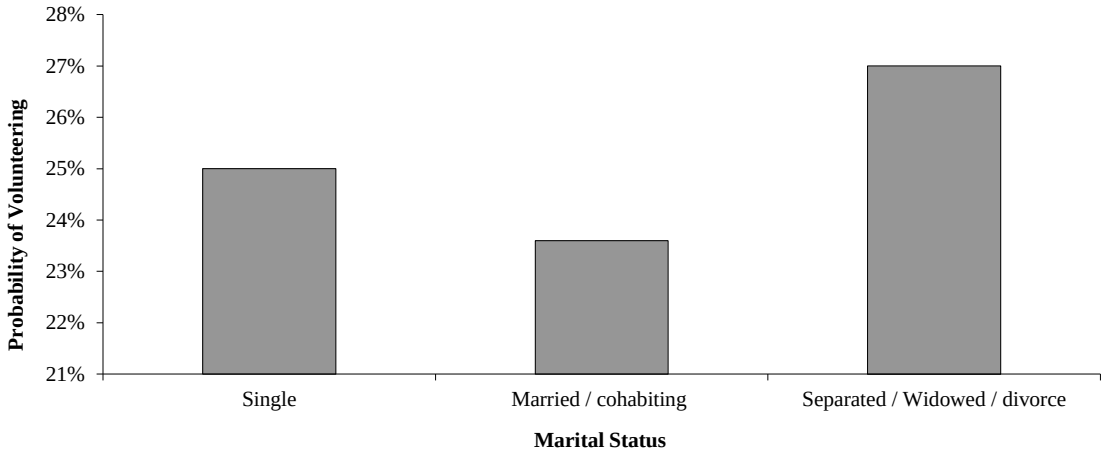
Figure 7.2 Age and the Probability of Volunteering



7.3.3.3 Marital Status

Marital Status was not significant in the model. Figure 7.3 shows that, controlling for everything else, people who are separated, widowed or divorced, have a higher propensity to volunteer, with married and cohabiting people volunteering more than single people (Hackl et al, 2005). Although, others have found that people who are married or cohabiting often volunteer more than any other groups (Wandersman et al, 1987; Vaillancourt, 1994; Freeman, 1997; Schady, 2001 and Pho, 2008). In the model none of the marital status categories are significant.

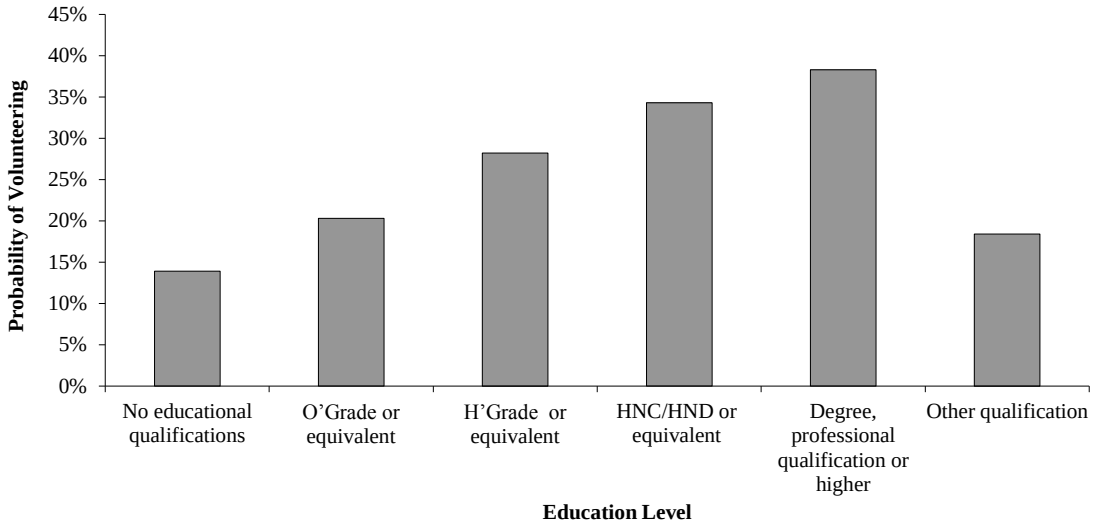
Figure 7.3 Marital Status and the Probability of Volunteering



7.3.3.4 Level of Education

The model shows a strong significant educational gradient, with levels of volunteering participation increasing sharply with an increase in the level of education, as shown in Figure 7.4. The highest participation rate was found in the individual who possessed a degree, professional qualification or higher. The least likely to volunteer were individuals who had no educational qualifications (Van Dijk and Boin, 1993; Vaillancourt, 1994; Riecken et al, 1994; Day and Devlin, 1996; Freeman, 1997; Schady, 2001; Attwood et al, 2003; Findlay and Findlay, 2005; Prouteau and Wolff, 2006; Erlinghagen and Hank, 2006; Tang, 2008; Pho, 2008; Czerwinska, 2008; McBride and Lough, 2008; and Weemaes and Schokkaert, 2009).

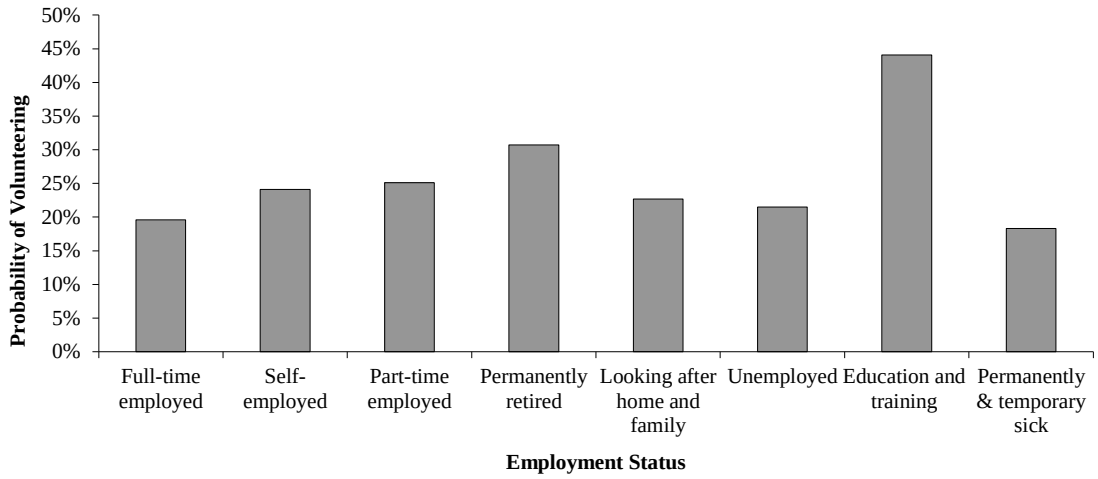
Figure 7.4 Level of Education and the Probability of Volunteering



7.3.3.5 Employment Status

Figure 7.5 shows the least likely to volunteer are the people who are permanently or temporarily sick, full-time employed and unemployed (Erlinghagen and Hank, 2006), while people who are in education and training courses and those who are retired are the most likely to participate in volunteering. People who are part-time, employed, or self-employed, show a higher propensity to volunteer than those who are unemployed (Schady, 2001 and Attwood et al, 2003). In the model only part-time employed, permanently retired and education and training course is significant.

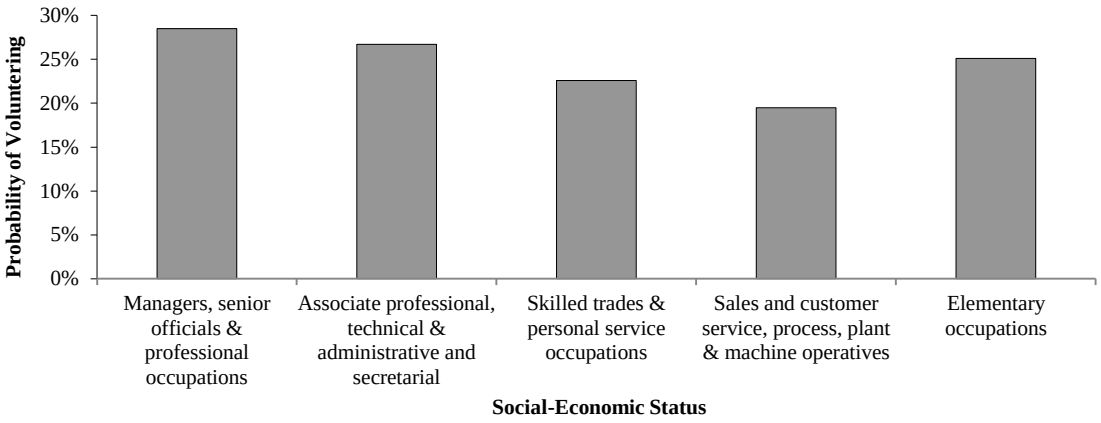
Figure 7.5 Employment Status and the Probability of Volunteering



7.3.3.6 Social Economic Status

When considering volunteering participation and social-economic grouping, the results are similar to those found in the level of education, i.e., the higher the social-economic group, the higher the volunteering participation rate (Vaillancourt, 1994; Schady, 2001; Attwood et al, 2003; Kendall, 2003, Powell and Bratovic, 2007; Pho, 2008; McBride and Lough, 2008 and The Social Research, 2008), as shown in Figure 7.6. In the Scottish household survey data, the highest participation rates are among people who are in the highest social grouping (managers, senior officials, and professionals). The lowest volunteer participation is found within the sales and customer service, process, and plant and machine operatives groups. In the model only skilled trades & personal service occupations and sales & customer service, process, plant & machinery operatives are significant.

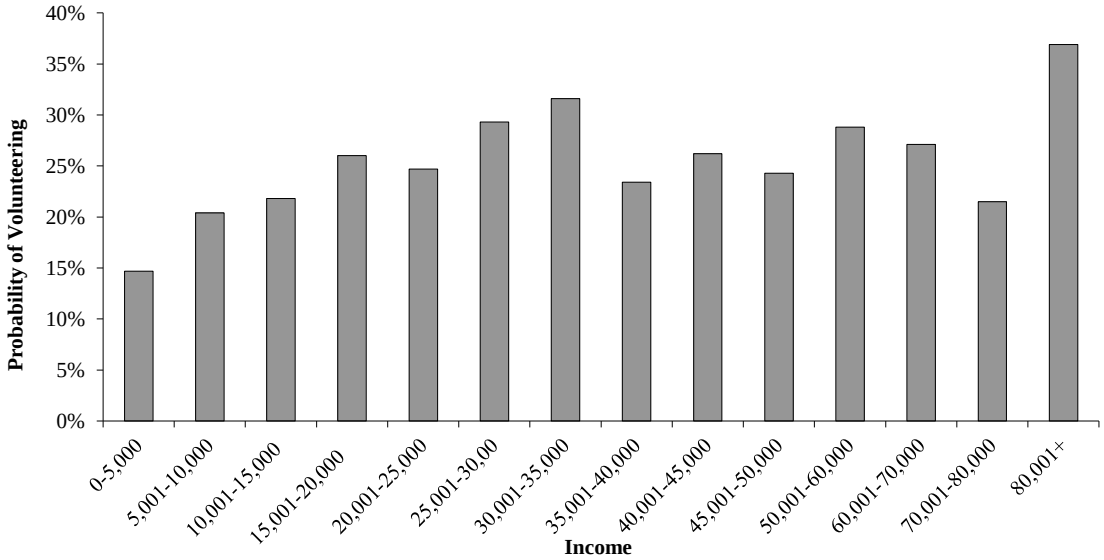
Figure 7.6 Social Economic Status and the Probability of Volunteering



7.3.3.7 Income

There is a significant income gradient within the Scottish population sample. Volunteers who are in the higher income groups are more likely to participate in volunteering than people in the lower income groups (Menchik and Weisbrod, 1987; Vaillancourt, 1994, Riecken et al, 1994; Freeman, 1997; Schady, 2001; Attwood et al, 2003 and Pho, 2008). People who are earning an annual income of between £25,001 and £30,000 are at least twice more likely to volunteer than people who are earning an annual income of under £5,000, as shown in Figure 7.7.

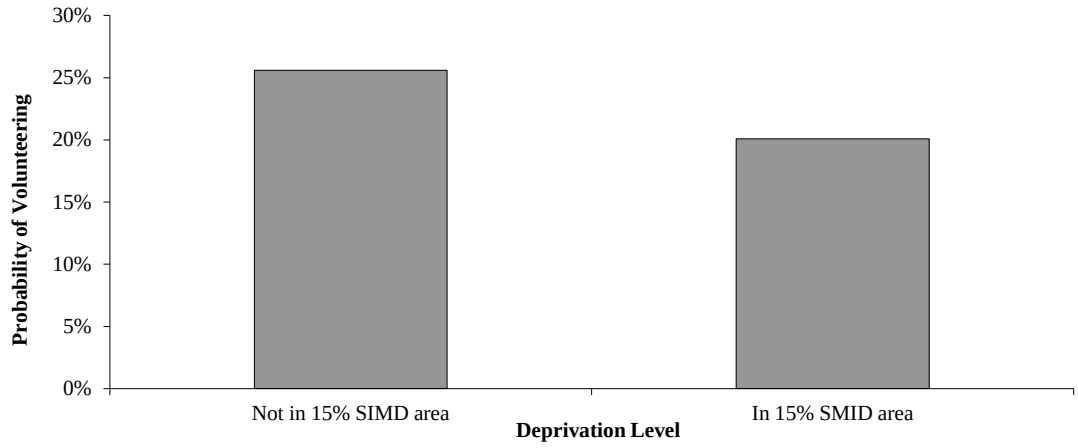
Figure 7.7 Income and the Probability of Volunteering



7.3.3.8 SIMD

The SIMD index shows concentrations of areas of deprivation within Scotland and it is measured by the level of income, employment, education, housing, health, crime, and geographical access. Scotland has been broken down into the SIMD (2006 level) 15 per cent most deprived areas, as shown in Figure 7.8. This illustrates that in the 15 per cent most deprived areas in Scotland, people are significantly less likely to volunteer than those people who live outside these areas. This provides evidence that the higher the deprivation level, the lower the volunteering participation rate will be (Kendall, 2003; The Social Research, 2008 and Woolvin, 2010). These findings are consistent with education and social economic status.

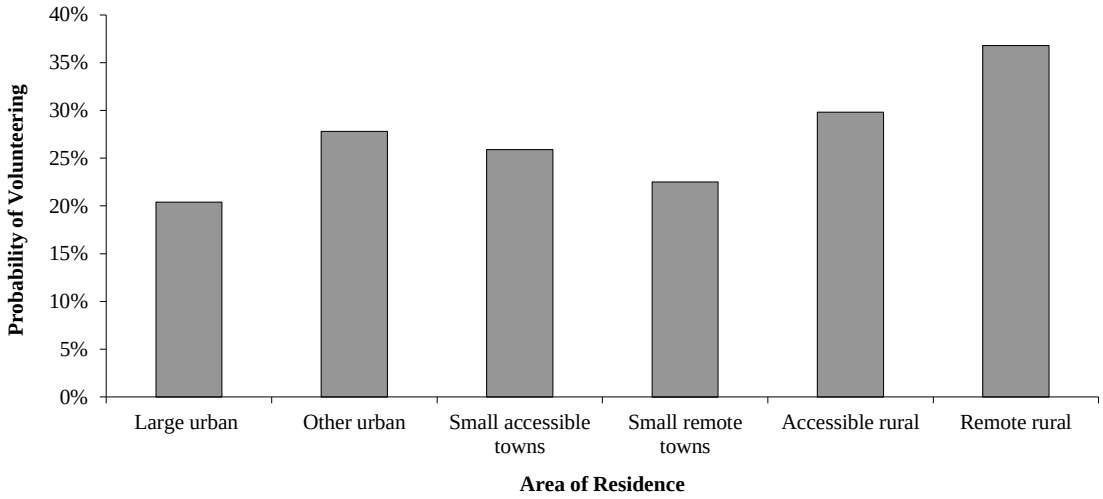
Figure 7.8 SIMD and the Probability of Volunteering



7.3.3.9 Area of Residence

As Figure 7.9 shows, when examining the six-fold urban/rural classifications, people who live in remote rural and accessible rural areas are significantly more likely to volunteer than those people living in large urban towns, where people are the least likely to volunteer (Vaillancourt, 1994; Stahl and Haruvy, 2006; Pho, 2008 and Weemaes and Schokkaert, 2009). Darley and Latane (1968) found the more people there are present in an area, the less an individual feels the inclination to help. The area of residence variable is capturing some deprivation effects. In the model only small accessible towns and small remote towns are insignificant.

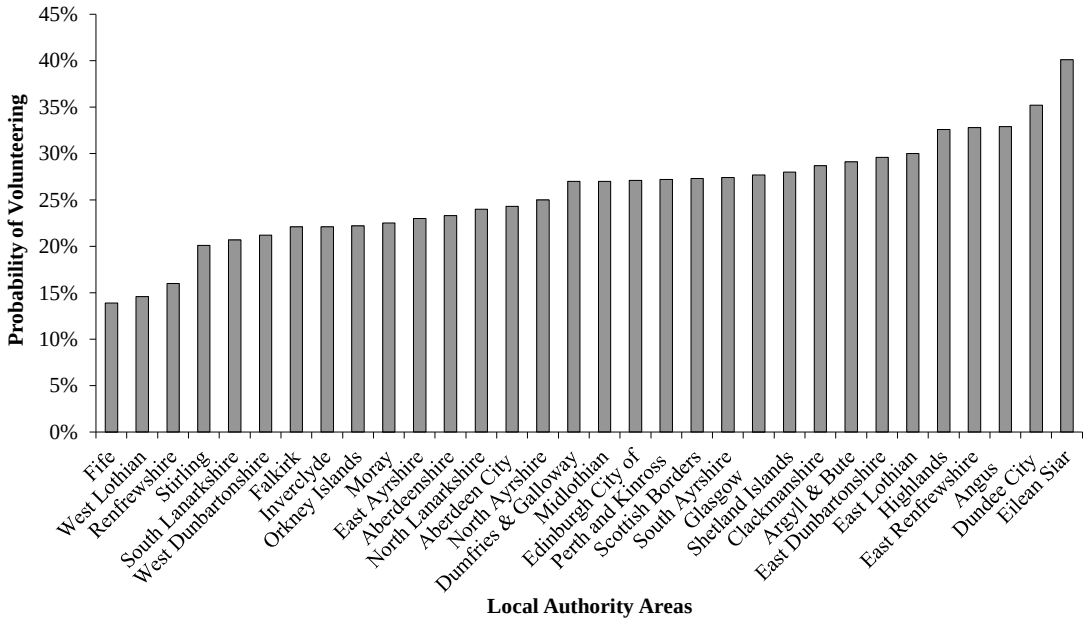
Figure 7.9 Area of Residence and the Probability of Volunteering



7.3.3.10 Local Authority

Figure 7.10 shows there are significant differences between Local Authorities throughout Scotland. People who are living in Local Authority areas such as Eilean Siar, the Highlands, and Angus are significantly more likely to volunteer than people who are living in Local Authority areas such as Fife, Renfrewshire, and West Lothian. The Local Authority variable is also capturing some deprivation and urban rural effects. In the model only Fife, Renfrewshire and West Lothian are significant.

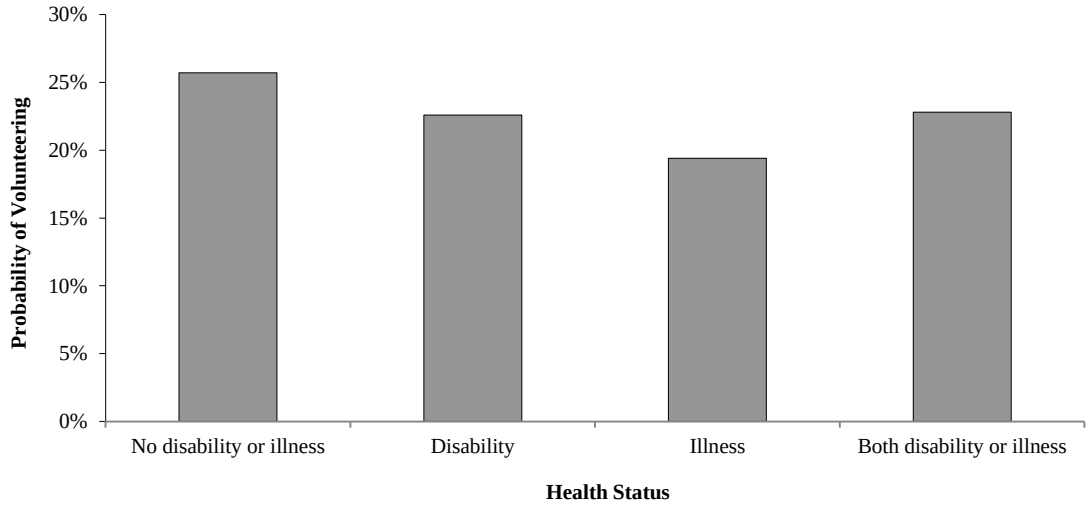
Figure 7.10 Local Authority and the Probability of Volunteering



7.3.3.11 Health Status

In the dataset, most people who participated in volunteering consider themselves to have no illness or disability, with the least likely to participate coming from people who have an illness followed by those who have a disability (Erlinghagen and Hank, 2006), as Figure 7.11 shows. In the model only illness is significant.

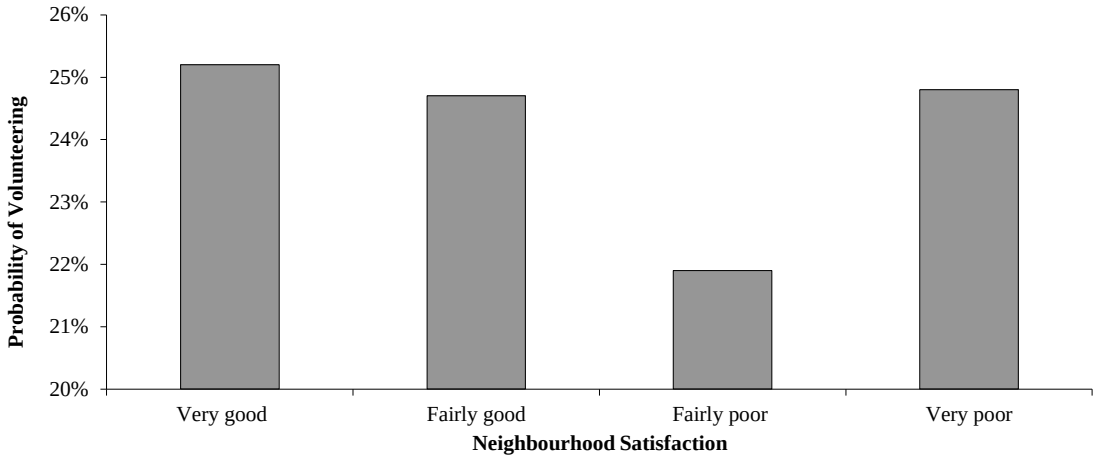
Figure 7.11 Health Status and the Probability of Volunteering



7.3.3.12 Neighbourhood Satisfaction

Omoto and Snyder (2002) and Okun and Michel (2006) examined a sense of community, as an independent variable in the decision to volunteer. Both studies found a significantly positive correlation with the decision to volunteer and their individual sense of community. In this model, using the neighbourhood satisfaction independent variable, there is no significant correlation with an individual's feeling of neighbourhood satisfaction and their decision to volunteer. In Figure 7.12, there is a slightly higher probability of a person volunteering if they are very satisfied with their neighbourhood, than someone who rates their neighbourhood as very poor. In the model none of the categories were significant.

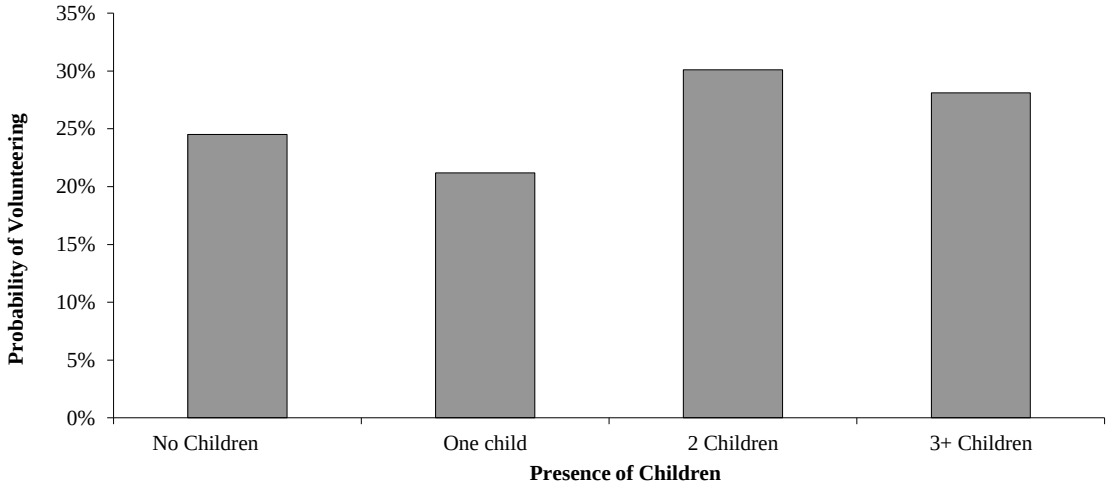
Figure 7.12 Neighbourhood Satisfaction and the Probability of Volunteering



7.3.3.13 Presence of Children

Figure 7.13 shows the presence of two or more children increases the likelihood of volunteering, compared to no children present or having only one child (Menchik and Weisbrod, 1987; Carlin, 2001 and Pho, 2008). No children present increases the probability of volunteering, compared to the presence of one child (Wandersman et al, 1987; Schady, 2001 and McBride and Lough, 2008). In the model only two children is significant.

Figure 7.13 Presence of Children and the Probability of Volunteering



7.3.4 Marginal Effects Analysis

Examining the marginal effects allows the probabilities of volunteering for particular groups to be found. An example of this could be people who are educated at college level and are within age group 45–54 year olds, where breaking these groups down by sex results in a 40.1 per cent probability of volunteering for a male and higher for a female at 45.1 per cent. Examining marginal effects further, the model allows us to predict probabilities at certain chosen points, enabling the key factors that affect an individual's choice to volunteer to be highlighted. A summary of these key factors has been produced in Table 7.4. This draws out the importance of the independent variables. In the examples, sex, neighbourhood satisfaction ratings and health status are not resulting in significant differences between categories, whereas Local Authority, social-economic status, employment status, income level, deprivation level, presence of children and, in particular through investigation, education level, age, and six classification areas, showed to have significant differences within groups.

Table 7.4 Summary of Predicted Probability by Type

Ideal Type	***Probability of Volunteering***
Sex	
Male, aged 47, degree qualification, no children present, professional occupation, living in Dundee, income £28,000 per year, rates his neighbourhood as very good	65.8%
Female, aged 47, degree qualification, no children present, professional occupation, living in Dundee, income £28,000 per year, rates her neighbourhood as very good	69.2%
Local Authority	
Male, aged 50, married, self-employed, **living in East Dunbartonshire**, income £44,500 per year, professional qualification	54.2%
Male, aged 50, married, self-employed, **living in Fife**, income £44,500 per year, professional qualification	31.2%
Education	
Female, aged 23, single, **no qualification**, looking after home and family, living in East Lothian, income £15,000 per year	10.9%
Female, aged 23, single, **professional qualification**, looking after home and family, living in East Lothian, income £15,000 per year	32.5%
Age	
Female, **aged 33**, divorced, 3 children present, college level education, part-time employed, customer service occupation, income £20,000 per year, living in	34%

Edinburgh, rates her neighbourhood as fairly good,	
Female, **aged 53**, divorced, 3 children present, college level education, part-time employed, customer service occupation, income £20,000 per year, living in Edinburgh, rates her neighbourhood as fairly good,	46.5%
Neighbourhood Satisfaction	
Male, aged 29, single, living in Glasgow, degree qualification, full-time employed, income £25,000 per year, technical professional, **rates his neighbourhood as very good**	43.8%
Male, aged 29, single, living in Glasgow, degree qualification, full-time employed, income £25,000 per year, technical professional, **rates his neighbourhood as very poor**	43.3%
Six classification areas	
Female, aged 66, widowed, degree qualification, retired, income £19,000 per year, rates her neighbourhood as fairly good, **lives in remote rural area**	71.2%
Female, aged 66, widowed, degree qualification, retired, income £19,000 per year, rates her neighbourhood as fairly good, **lives in large urban area**	52.1%
Employment	
Male, aged 39, married, **full-time employed**, living in Clackmanshire, income £28,500 per year, college level qualification, no illness or disability	39.9%
Male, aged 39, married, **part-time employed**, living in Clackmanshire, income £28,500 per year, college level qualification, no illness or disability	47.7%
Health	
Female, aged 24, college level qualification, 1 child present, part-time employed, **no illness or disability**, living in South Ayrshire, not in 15% most deprived areas, rates her neighbourhood as fairly poor, income £10,500 per year	25.8%
Female, aged 24, college level qualification, 1 child present, part-time employed, **has an illness**, living in South Ayrshire, not in 15% most deprived areas, rates her neighbourhood as fairly poor, income £10,500 per year	19.6%
Social-Economic Grouping	
Male, aged 48, living in Falkirk, H'Grade qualification, self-employed, income £30,000 per year, **plant and machine operatives occupation**, rates his neighbourhood as fairly good, no illness or disability	34.6%
Male, aged 48, living in Falkirk, H'Grade qualification, self-employed, income £30,000 per year, **professional occupation**, rates his neighbourhood as fairly good, no illness or disability	46.5%
Income	
Female, aged 59, professional qualification, living in the Highlands, part-time employed, **income £30,250 per year**, no illness or disability, rates her neighbourhood as very good	64.6%
Female, aged 59, professional qualification, living in the Highlands, part-time employed, **income £15,000 per year**, no illness or disability, rates her neighbourhood as very good	52.5%
Deprivation Level	
Male, aged 37, living in North Lanarkshire, work-based qualification, self-employed, income £26,500 per year, **in 15% most deprived areas**, rates his neighbourhood as fairly good	18.4%

Male, aged 37, living in North Lanarkshire, work-based qualification, self-employed, income £26,500 per year, **not in 15% most deprived areas**, rates his neighbourhood as fairly good,	23.6%
Presence of Children	
Female, aged 46, living in Midlothian, self-employed, **2 children present**, professional qualification, income £48,500 per year, rates her neighbourhood as very good	57.6%
Female, aged 46, living in Midlothian, self-employed, **no children present**, professional qualification, income £48,500 per year, rates her neighbourhood as very good	50.6%
Example of a High Probability Type	
Female, aged 54, separated, 3 children present, professional qualification, living in Eilean Sair, remote rural area, not in 15% most deprived areas, retired professional, income £55,000 per year, no illness or disability, rates her neighbourhood as very good	91.1%
Example of a Low Probability Type	
Male, aged 24, married, no qualifications, 1 child present, living in fife, large urban town, in 15% most deprived areas, plant and machine operatives occupation, full-time employed, income £15,000 per year, rates his neighbourhood as fairly poor	0.9%

7.4 The Main Model and Subgroups

The results of the summary table of probabilities assigned to independent variables in the main model, which show significant differences for age, education and six classification areas, show that a further investigation into the subgroups was warranted to ensure the main regression model explains volunteer participation for each group, i.e., if the groups have the same parameters as each other. A number of Chow tests were carried out, allowing us to see if indeed, two subgroups can be explained by the one model.

Before the Chow test was done, each subgroup models were subject to the same diagnostic processes as the main model, where outliers were present but not considered influential in the male and female models. In the older model, one case was considered an influential outlier where the observation was female, retired, highly educated, high income, not in 15 per cent deprivation areas but does not volunteer. In the urban model, one case was also considered to be an influential outlier where the person has no education, is unemployed, lives in 15 per cent

deprivation area in the Local Authority of Renfrewshire (one of the lowest participation rates), and has a low income, however volunteers.

The remote rural model had one observation that was thought to represent an influential outlier, where the person was unusual in that he was male, aged 75+, is on a low income and has no qualifications, however volunteers. In the young model, there were four observations that were considered to be influential outliers, they were unusual in they all volunteered but had combinations of characteristics that exhibit low participation rate such as no or little education, issues with health, live in the Local Authority area of Renfrewshire.

With the no-qualification model, there were seven observations that were having an influential effect because of a combination of extremely high and low income bands, living in areas with the lowest participation rate, etc. The high-qualification model had two cases that were considered influential outliers who had a combination of high earnings and good health status, but they did not volunteer. After extensive testing and consideration, the influential outliers were removed from the logit models, allowing for the Chow test to be carried out. The process for the Chow test for the logit form is:

$$X^2 = -2\ln L_{combined} - [(-2\ln L_{model1}) + (-2\ln L_{model2})]$$

df = (model 1 + model 2) – combined model (then use the chi-squared distribution table to find the critical value)

The analysis shows that, within the full model, there are groups that have different parameters from each other; therefore, this allows us to reject the null hypotheses these groups are indeed the same, meaning there is justification in using separate models for young and old, urban and rural, no qualifications and high qualifications, which is in line with published theory. In addition, for fullness, a chow test was carried out to confirm the sex results, reaffirming there is no justification for using a separate model for male and female, meaning that in the analysis of the main model, males and females can be treated the same, as the following results show:

Test for young and old:

$X^2 = 3569.85 – (962.03 + 643.12) = 1605.15$

df = (79 + 75) – 88 = 66

p = .05 (85.97) p = .01 (95.63) p = .001(107.26)

Separate model justified

Test for large urban and remote rural:

$X^2 = 3569.85 – (1503.22 + 224.63) = 1842$

df = (62 + 62) – 88 = 36

p = .05 (51) p = .01 (58.62) p = .001(67.99)

Separate model justified

Test for no qualification and high qualification:

$X^2 = 3569.85 – (536.18 + 1108.90) = 1924.77$

df = (76 + 80) – 88 = 68

p = .05 (88.25) p = .01 (98.03) p = .001(109.79)

Separate model justified

Test for male and female:

$X^2 = 3569.85 – (1602.10 + 1865.98) = 73.02$

df = (82 + 82) – 88 = 91

p = .05 (114.27) p = .01 (125.29) p = .001(138.45)

Separate model not justified

7.5 The Younger and Older Statistical Model

The younger model accounts for the people in the full model who are 16–34 years old, which consisted of 1,480 observations. Compared to the main model, only the effects of the following covariates on the probability of volunteering is significant at the corresponding levels that are particularly significant for younger people,

education (p=<0.001), employment (p=<0.001), socio-economic status (p=0.002) and Local Authority (p=0.04). The older model accounts for the people in the full sample who are 65 and over, which gives us 1,824 observations. When examining the older people model, it shows that, similar to younger people, education (p=<0.001), employment (p=0.01) and social-economic status (p=0.04) are important predictors for older people volunteering along with health (p=<.001) and the six fold-urban rural classification (p=0.05). All results can be seen in Table 7.5.

Table 7.5 Younger and Older Model of the Impact of Social-Economic and Demographic Characteristics on the Decision to Volunteer, Scotland, 2009, Logit Analysis

Independent Variables	***Younger***		***Older***	
	Coef	***z stat***	***Coef***	***z stat***
Gender				
Male	-	-	-	-
Female	-0.120	-0.72	0.250	1.70
Marital Status				
Single	-	-	-	-
Married / Cohabiting	-0.197	-0.97	0.223	0.90
Separated / Divorced / Widowed	0.364	0.81	0.224	0.91
Level of Education				
No Qualification	-	-	-	-
O'Grade or equivalent	0.306	0.75	0.809**	2.95
H'Grade or equivalent	1.094**	2.59	0.844***	3.30
HND/HNC or equivalent	1.241***	2.88	1.721***	5.70
Degree, professional qualification, equivalent or higher	1.534***	3.72	1.324***	7.14
Other qualification	0.802	1.24	0.398*	1.93
Employment Status				
Full-time employed	-	-	-	-
Self-employed	-0.276	-0.62	-1.391	-1.76
Part-time employed	0.582	1.93	-0.034	-0.04
Permanently retired	-	-	0.522	0.77
Looking after home & family	0.568	1.59	-0.844	-0.76
Unemployed	-0.284	-0.75	-	-
Education & training course	1.072***	4.44	-	-
Permanently & temporary sick	0.232	0.36	-0.396	-0.41

Social-Economic Status				
Managers, senior officials & professional occupations	-	-	-	-
Associate professional, technical & administrative and secretarial	-0.712**	-2.73	0.856	1.47
Skilled trades & personal service occupations	-1.061***	-3.58	-0.224	-0.39
Sales and customer service, process, plant & machine operatives	-1.126***	-3.50	0.067	0.10
Elementary occupations	-0.832**	-2.53	-0.218	-0.37
Income				
0-5,000	-	-	-	-
5,001-10,000	0.223	0.51	0.794	1.78
10,001-15,000	0.037	0.08	0.899*	2.04
15,001-20,000	0.068	0.16	1.160**	2.55
20,001-25,000	0.227	0.52	1.255**	2.52
25,001-30,000	0.458	0.98	1.213*	2.34
30,001-35,000	0.892*	1.94	1.375*	2.29
35,001-40,000	0.136	0.29	1.811**	2.47
40,001-45,000	0.449	0.86	1.032	1.30
45,001-50,000	-0.064	-0.11	-	-
50,001-60,000	0.640	1.12	1.677*	1.93
60,001-70,000	-0.134	-0.21	1.072	1.08
70,001-80,000	-0.329	-0.66	0.370	0.68
80,001+	0.851	0.93	-	-
Scottish Index of Multiple Deprivation				
Not in 15% most deprived areas	-	-	-	-
In 15% most deprived areas	-0.278	-1.26	0.055	0.22
Area of Residence				
Large urban areas	-	-	-	-
Other urban areas	0.683	1.57	-0.366	-1.18
Small accessible towns	0.552	1.15	-0.088	-0.25
Small remote towns	0.010	0.02	0.338	0.79
Accessible rural	0.655	1.42	0.230	0.67
Remote rural	1.244*	2.08	0.462	1.15
Local Authority				
Glasgow	-	-	-	-
Aberdeen City	-0.436	-1.10	0.829*	2.07
Aberdeenshire	-0.422	-0.70	0.366	0.76
Angus	0.495	0.68	0.434	0.87

Argyll & Bute	0.137	0.17	0.301	0.59
Clackmanshire	-0.403	-0.50	0.696	1.03
Dumfries & Galloway	-0.176	-0.26	0.664	1.34
Dundee City	0.646	1.51	-0.364	-0.74
East Ayrshire	-2.105	-1.88	0.376	0.66
East Dunbartonshire	1.163*	1.97	0.605	1.30
East Lothian	0.120	0.19	0.534	1.17
East Renfrewshire	0.424	0.67	0.847	1.66
Edinburgh City of	0.183	0.65	-0.097	-0.30
Eilean Siar	1.063	1.34	0.267	0.46
Falkirk	-0.579	-0.86	0.695	1.34
Fife	-1.039*	-1.97	0.148	0.03
Highlands	0.516	0.81	0.726	1.56
Inverclyde	0.007	0.01	0.520	0.88
Midlothian	0.079	0.13	0.770	1.29
Moray	-0.534	-0.79	0.076	0.14
North Ayrshire	-0.452	-0.69	0.829	1.65
North Lanarkshire	-0.083	-0.19	0.658	1.59
Orkney Islands	0.632	0.78	-0.354	-0.56
Perth and Kinross	0.477	0.77	0.139	0.26
Renfrewshire	-	-	0.786	0.15
Scottish Borders	0.381	0.53	-0.012	-0.02
Shetland Islands	0.041	0.05	-0.799	-1.05
South Ayrshire	0.912	1.39	0.703	1.30
South Lanarkshire	-0.490	-0.86	0.270	0.64
Stirling	-0.722	-1.04	0.696	1.11
West Dunbartonshire	-1.179	-1.28	1.607***	3.31
West Lothian	0.089	0.12	0.161	0.23
Health Status				
No disability or illness	-	-	-	-
Disability	0.929	1.47	-0.912***	-3.76
Illness	0.173	0.39	-0.462**	-2.58
Both disability and illness	0.199	0.33	-0.698**	-3.00
Presence of Children				
No Children	-	-	-	-
One child	-0.382	-1.73	1.112	0.82
Two children	0.100	0.36	-	-

Three+ children	-0.025	-0.07	-	-
Neighbourhood Satisfaction Rating				
Very good	-	-	-	-
Fairly good	0.061	0.37	-0.174	-1.08
Fairly poor	-0.482	-1.43	-0.307	-0.57
Very poor	0.524	1.05	-1.511	-1.63

*p<0.05, **p<0.01, ***p<0.001

Young

Intercept -2.108***

Pseudo R2 = 15.4%

-2 Log-likelihood = -962

N = 1480

df = 79

Older

Intercept -2.915**

Pseudo R2 = 14.4%

-2 Log-likelihood = -643

N = 1824

df = 75

7.5.1 Post Estimation Analysis of the Younger and Older Model

Table 7.6 shows the predicted probabilities for each of the independent variables, while holding all others at their mean.

Table 7.6 The Model's Predicted Probability Percentage over the Range of Independent Variables, Younger and Older

Independent Variables	***Younger (%)***	***Older (%)***
Sex		
Male	21.7	18.7
Female	19.7	22.8

Marital Status		
Single	21.3	17.8
Married / cohabiting	18.2	21.3
Separated / Widowed / divorce	28.1	21.3
Education		
No educational qualifications	9.6	14.1
O'Grade or equivalent	12.9	27
H'Grade or equivalent	24.2	27.7
HNC/HND or equivalent	27	47.9
Degree, professional qualification or higher	33.1	38.3
Other qualification	19.2	19.7
Employment Status		
Full-time employed	15.9	14.6
Self-employed	12.5	4
Part-time employed	25.3	14.2
Permanently retired	-	22.4
Looking after home and family	25	6.8
Unemployed	12.4	-
Education and training	35.6	-
Permanently & temporary sick	19.2	10.3
Social-economic Status		
Managers, senior officials & professional occupations	35	31.1
Associate professional, technical & administrative and secretarial	20.9	51.5
Skilled trades & personal service occupations	15.7	26.5
Sales and customer service, process, plant & machine operatives	14.8	32.5
Elementary occupations	19	26.6
Income		
0-5,000	17.1	9.4
5,001-10,000	20.5	18.7
10,001-15,000	17.6	20.3
15,001-20,000	18.1	24.9
20,001-25,000	20.6	26.7
25,001-30,000	24.6	25.9
30,001-35,000	33.5	29.1
35,001-40,000	19.1	38.9
40,001-45,000	24.4	22.6
45,001-50,000	16.2	-

50,001-60,000	28.1	35.7
60,001-70,000	15.3	23.3
70,001-80,000	12.9	13.1
80,001+	32.6	-
Scottish Index of Multiple Deprivation		
Not in 15% most deprived areas	21.7	20.9
In 15% most deprived areas	17.3	21.8
Area of residence		
Large urban	15.9	21.8
Other urban	27.2	16.2
Small accessible towns	24.7	20.3
Small remote towns	16	28.1
Accessible rural	26.7	26
Remote rural	39.6	30.6
Local Authority		
Glasgow	22.6	16.3
Aberdeen City	15.9	30.9
Aberdeenshire	16	21.9
Angus	32.4	23.1
Argyll & Bute	25.1	20.8
Clackmanshire	16.3	28.1
Dumfries & Galloway	19.6	27.8
Dundee City	35.8	11.9
East Ayrshire	3.4	22.1
East Dunbartonshire	48.3	26.3
East Lothian	24.8	24.9
East Renfrewshire	30.9	31.3
Edinburgh City of	26	15
Eilean Siar	45.8	20.3
Falkirk	14	28.1
Fife	9.3	16.5
Highlands	32.9	28.7
Inverclyde	22.7	24.7
Midlothian	24	29.6
Moray	14.2	17.4
North Ayrshire	15.6	30.9
North Lanarkshire	21.2	27.3

Orkney Islands	35.5	12
Perth and Kinross	32	18.3
Renfrewshire	-	17.4
Scottish Borders	29.9	16.1
Shetland Islands	23.3	8
South Ayrshire	42.1	28.3
South Lanarkshire	15.1	20.3
Stirling	12.4	28.1
West Dunbartonshire	8.2	49.3
West Lothian	24.2	18.6
Health Status		
No disability or illness	20.4	26.4
Disability	39.4	12.6
Illness	23.4	18.4
Both disability and illness	23.8	15.1
Neighbourhood Rating		
Very good	20.6	22.2
Fairly good	21.6	19.3
Fairly poor	13.8	17.3
Very poor	30.5	5.9
Presence of Children		
No Children	21.8	21
One Child	16	44.7
2 Children	23.6	-
3+ Children	21.4	-

Note that empty cells is where data has been omitted

7.5.2 Profile of Volunteer Behaviour of the Younger and Older People

When examining the gender difference between the younger and older groups, it was found that for the younger group, more males volunteer than females and that it was the opposite for the older group. With marital status, younger people are more likely to volunteer if they are separated, divorced or widowed and least likely to volunteer if they are married or cohabiting. Older people are least likely to volunteer if they are single. Considering the education variable, it was found that both the older and younger models show a strong significant educational gradient, like in the full model, where again, the highest participation rate was found in the individuals who

possessed a degree, professional qualification or higher for the younger group, college level for the older group. In both groups, the least likely to volunteer were individuals who had no educational qualifications. For the younger age group, the people who are unemployed or permanently / temporarily sick are more likely to volunteer. Examining the older group, the most likely to volunteer are the people who are permanently retired (as would be expected given the age group). In both cases, the least likely to volunteer are people who are looking after home and family.

By examining social-economic statuses, it was found that, in the younger model, the higher the social-economic group, the higher the volunteering participation rate, as in the full model. The highest participation rates are among people who are in the highest social grouping (managers, senior officials, and professionals). For the older people, the most significant group is the second highest social-economic grouping (associate professional, technical & administrative and secretarial). There is a strong significant income gradient within the younger group and the older group. Volunteers who are in the higher income groups are more likely to participate in volunteering than people in the lower income groups, just like in the full model. When examining the SIMD, it was found that, in the younger model, when Scotland is broken down into the 2006 SIMD 15 per cent most deprived areas, people are significantly less likely to volunteer than those people who live outside these areas, which is in line with the results from the full model. When examining the older group, no significant differences were found between people who volunteer and those who live in or outside the 15 per cent most deprived areas in Scotland, which was mirrored by the small sample study of older volunteers in Chapter 5.

In the area of residence variable, it was found that, in both cases, when examining the six-fold urban/rural classifications, people who live in remote rural and accessible rural areas are more likely to volunteer than people who live in large urban towns, as with the full model. When examining Local Authority, the results show that younger people are more likely to volunteer in East Dunbartonshire and Eilean Siar and least likely to volunteer if they live in Renfrewshire and East Ayrshire. For the older age group, the people most likely to volunteer live in West Dunbartonshire and East Renfrewshire, with the least likely to volunteering living in

the Shetlands, Dundee, and Orkney. Young people who have a disability have a high probability of volunteering, whereas for older people the least likely to volunteer are people who have a disability. There is also a significant difference between the two groups when examining volunteering and neighbourhood satisfaction, with younger people more likely to volunteer even when they consider their satisfaction with their neighbourhood is poor, whereas it is the opposite for older people.

The propensity to volunteer if there are no children present and having three children is around the same, with the most likely to volunteer being young people who have two children and the least being the presence of only one child. For older people, the presence of children increases the probability of volunteering.

7.5.3 Marginal Effect Analysis of the Younger and Older Model

In the examples of the following table, the combination of the younger probabilities shows that indeed, Local Authority, education, employment, and socio-economic status are significant. For the older people, the examples of the combination of probabilities show that, as with the younger model, education and employment are significant variables with the addition of health, six classification areas and neighbourhood satisfaction, and the presence of children in the household that are also significant in predicting the volunteering behaviour of older people in Scotland.

Table 7.7 Summary of Predicted Probability by Type for Younger and Older

Ideal Type	***Probability of Volunteering***
Sex	
Younger	
Male, single, college qualification, personal service occupation, no children present, living in Glasgow, income £24,000 per year	25.4%
Female, single, college qualification, personal service occupation, no children present, living in Glasgow, income £24,000 per year	23.2%
Older	
Male, widowed H'Grade qualification, retired, income £21,250, not in 15% most deprived areas, no illness or disability, rates his neighbourhood as very good, living in East Renfrewshire	55.2%
Female, widowed, H'Grade qualification, retired, income £21,250, not in 15% most deprived areas, no illness or disability, rates her neighbourhood as very good, living in East Renfrewshire	61.3%

Marital Status	
Younger	
Female, **married**, 2 children present, part-time employed, income £29,000, living in Dundee, degree qualification, no illness or disability, rates her neighbourhood as fairly good	62.3%
Female, **divorced**, 2 children present, part-time employed, income £29,000, living in Dundee, degree qualification, no illness or disability, rates her neighbourhood as fairly good	74.4%
Older	
Male, **widowed**, self-employed, living in North Ayrshire, income £36,500 per year, professional qualification, no illness or disability, rates his neighbourhood as very good	33.6%
Male, **single**, self-employed, living in North Ayrshire, income £36,500 per year, professional qualification, no illness or disability, rates his neighbourhood as very good	28.8%
Local Authority	
Younger	
Male, divorced, 3 children present, self-employed, **living in East Dunbartonshire**, income £30,000 per year, professional qualification, no illness or disability, rates his neighbourhood as fairly good	67.2%
Male, divorced, 3 children present, self-employed, **living in East Ayrshire**, income £30,000 per year, professional qualification, no illness or disability, rates his neighbourhood as fairly good	7.2%
Older	
Male, married, retired, no illness or disability, **living in Dundee**, work-based qualification, rates his neighbourhood as very good, income £32,500 per year	21%
Male, married, retired, no illness or disability, **living in West Dunbartonshire**, work-based qualification, rates his neighbourhood as very good, income £32,500 per year	65.7%
Education	
Younger	
Female, **no qualification**, part-time employed, living in East Lothian, income £15,000 per year, not in 15% most deprived areas	12.3%
Female, **professional qualification**, part-time employed, living in East Lothian, income £15,000 per year, not in 15% most deprived areas	39.6%
Older	
Female, married, **no qualification**, retired, living in Renfrewshire, income £14,750 per year, not in 15% most deprived areas, no illness or disability	18%
Female, married, **professional qualification**, retired, living in Renfrewshire, income £14,750 per year, not in 15% most deprived areas, no illness or disability	45.3%
Neighbourhood Satisfaction	
Younger	
Male, married, no children present, living in Aberdeenshire, degree qualification, full-time employed, income £28,500 per year, **rates his**	23.3%

neighbourhood as very good, no illness or disability	
Male, married, no children present, living in Aberdeenshire, degree qualification, full-time employed, income £28,500 per year, **rates his neighbourhood as fairly poor**, no illness or disability	15.8%
Older	
Male, divorced, living in Angus, degree qualification, retired, income £38,250 per year, **rates his neighbourhood as very poor**, has an illness	24.3%
Male, divorced, living in Angus, degree qualification, retired, income £38,250 per year, **rates his neighbourhood as good**, has an illness	59.3%
Six classification areas	
Younger	
Female, married, no children present, school level qualification, full-time employed, income £18,500 per year, rates her neighbourhood as very good, **living in accessible rural area**	28.3%
Female, married, no children present, school level qualification, full-time employed, income 18,500 per year, rates her neighbourhood as very good, **living in other urban area**	28.7%
Older	
Female, married, college qualification, retired, income £17,250 per year, rates her neighbourhood as fairly good, **living in other urban area**	55.4%
Female, married, college qualification, retired, income £17,250 per year, rates her neighbourhood as fairly good, **living in remote rural area**	73.9%
Employment	
Younger	
Male, separated, **full-time employed**, living in Stirling, income £31,500 per year, college level qualification, no illness or disability, not in 15% most deprived areas	31.3%
Male, separated, **part-time employed**, living in Stirling, income £31,500 per year, college level qualification, no illness or disability, not in 15% most deprived areas	44.9%
Older	
Male, married, **full-time employed**, living in the Scottish Borders, income £25,000 per year, work-based qualification, no illness or disability, not in 15% most deprived areas	3.9%
Male, married, **retired**, living in the Scottish Borders, income £25,000 per year, work-based qualification, no illness or disability, not in 15% most deprived areas	22%
Health	
Younger	
Female, married, college level qualification, part-time employed, **no illness or disability**, living in Glasgow, in 15% most deprived areas, rates her neighbourhood as fairly poor, income £14,500 per year	16.4%
Female, married, college level qualification, part-time employed, **has an illness**, living in Glasgow, in 15% most deprived areas, rates her neighbourhood as fairly poor, income £14,500 per year	18.9%

Older	
Female, widowed, professional qualification, retired, **no illness or disability**, living in Midlothian, not in 15% most deprived areas, rates her neighbourhood as very good, income £34,500 per year	72.9%
Female, widowed, professional qualification, retired, **has an illness or a disability**, living in Midlothian, not in 15% most deprived areas, rates her neighbourhood as very good, income £34,500 per year	62.9%
Social-Economic Grouping	
Younger	
Male, living in Edinburgh, work-based qualification, self-employed, income £30,500 per year, **plant and machine operatives occupation**, rates his neighbourhood as fairly good, no illness or disability	12.4%
Male, living in Edinburgh, work-based qualification, self-employed, income £30,500 per year, **manager**, rates his neighbourhood as fairly good, no illness or disability	30.5%
Older	
Male, single, living in Falkirk, work-based qualification, retired, **plant and machine operatives occupation**, income £26,500 per year, rates his neighbourhood as very good, no illness or disability	41.6%
Male, single, living in Falkirk, work-based qualification, retired, **professional occupation**, income £26,500 per year, rates his neighbourhood as very good, no illness or disability	67.6%
Income	
Younger	
Female, college qualification, living in Perth & Kinross, self-employed, manager, **income £25,000 per year**, no illness or disability, rates her neighbourhood as very good	41.8%
Female, college qualification, living in Perth & Kinross, self-employed, manager, **income £14,500 per year**, no illness or disability, rates her neighbourhood as very good	37.2%
Older	
Female, married, work-based qualification, living in Inverclyde, retired, **income £34,500 per year**, no illness or disability, rates her neighbourhood as fairly good	73.5%
Female, married, work-based qualification, living in Inverclyde, retired, **income £23,250 per year**, no illness or disability, rates her neighbourhood as fairly good	71.1%
Deprivation Level	
Younger	
Male, married, 2 children present, living in North Lanarkshire, work-based qualification, self-employed, income £26,500 per year, **not in 15% most deprived areas**, rates his neighbourhood as fairly good	16.5%
Male, married, 2 children present, living in North Lanarkshire, work-based qualification, self-employed, income £26,500 per year, **in 15% most deprived areas**, rates his neighbourhood as fairly good	13%
Older	

Male, married, living in Dumfries & Galloway, work-based qualification, retired, skilled trades occupation, income £26,500 per year, **not in 15% most deprived areas**	37%
Male, married, living in Dumfries & Galloway, work-based qualification, retired, skilled trades occupation, income £26,500 per year, **in 15% most deprived areas**	38.3%
Presence of Children	
Younger	
Female, separated, **no children present**, college qualification, full-time employed, income £22,000 per year, living in East Renfrewshire, rates her neighbourhood as fairly good	33.6%
Female, separated, **3 children present**, college qualification, full-time employed, income £22,000 per year, living in East Renfrewshire, rates her neighbourhood as fairly good	33%
Older	
Male, single, **no children present**, retired, administrative occupation, school level qualification, income £18,250 per year, living in Fife, rates his neighbourhood as fairly poor	26.7%
Male, single, **1 child present**, retired, administrative occupation, school level qualification, income £18,250 per year, living in Fife, rates his neighbourhood as fairly poor	52.6%
Example of a High Probability Type	
Younger	
Male, separated, 2 children present, professional qualification, part-time employed, technical occupation, living in East Dunbartonshire, small accessible town, not in 15% most deprived areas, income £33,250 per year, rates his neighbourhood as fairly good	91.1%
Older	
Female, married, degree qualification, living in West Dunbartonshire, retired, professional occupation, income £35,250 per year, rates her neighbourhood as very good, no illness or disability	97.4%
Example of a Low Probability Type	
Younger	
Female, married, 1 child present, no qualifications, full-time employed, sales occupation, income £16,500 per year, living in West Dunbartonshire, urban town, in 15% most deprived areas, rates her neighbourhood as fairly poor	0.3%
Older	
Male, single, no qualifications, retired, elementary occupation, living in Edinburgh, income £14,750 per year, rates his neighbourhood as very poor	0.2%

7.6 Large Urban and Remote Rural Statistical Model

The urban model accounts for the people in the full model who are living in large urban areas, totalling 2,698 observations. Compared to the main model, only the

effects of the following covariates on the probability of volunteering is significant at the corresponding levels, education (p=<0.001), employment (p=<0.001), age (p=<0.001), income (p=0.03), Local authority (p=0.02) and marital status (p=0.03). The rural model accounts for the people in the full sample who are living in remote rural areas, giving us 625 observations. The predictors that are statistically significant are education (p=<.001) and employment (p=0.01). All results are shown in Table 7.8.

Table 7.8 Large Urban and Remote Rural Model of the Impact of Social-Economic and Demographic Characteristics on the Decision to Volunteer, Scotland, 2009, Logit Analysis

Independent Variables	***Large Urban***		***Remote Rural***	
	Coef	***z stat***	***Coef***	***z stat***
Gender				
Male	-	-	-	-
Female	0.098	0.83	0.228	0.91
Age				
16-24	-	-	-	-
25-34	0.260	1.08	0.420	0.51
35-44	0.756**	2.89	1.216	1.49
45-54	0.807**	3.00	1.043	1.25
55-64	0.244	0.77	1.029	1.18
65-74	0.367	0.95	1.048	1.10
75+	-0.169	-0.40	0.152	0.15
Marital Status				
Single	-	-	-	-
Married / Cohabiting	-0.136	-0.87	-0.177	-0.46
Separated / Divorced / Widowed	0.274	1.58	-0.336	-0.83
Level of Education				
No Qualification	-	-	-	-
O'Grade or equivalent	0.225	1.02	1.317**	3.10
H'Grade or equivalent	1.043***	4.98	0.018	0.04
HND/HNC or equivalent	1.295***	5.69	0.464	0.94
Degree, professional qualification, equivalent or higher	1.416***	7.28	1.231***	3.53
Other qualification	0.583**	2.42	-0.255	-0.43
Employment Status				

Full-time employed	-	-	-	-
Self-employed	0.521*	2.09	-0.122	-0.30
Part-time employed	0.606**	2.89	1.396**	2.85
Permanently retired	0.874**	2.95	0.938	1.69
Looking after home & family	0.490	1.66	0.905	1.37
Unemployed	-0.414	-1.30	1.130	1.46
Education & training course	1.052***	3.89	2.292**	2.37
Permanently & temporary sick	-0.091	-0.29	-0.308	-0.40
Social-Economic Status				
Managers, senior officials & professional occupations	-	-	-	-
Associate professional, technical & administrative and secretarial	-0.019	-0.11	-0.413	-0.84
Skilled trades & personal service occupations	-0.173	-0.75	0.251	0.56
Sales and customer service, process, plant & machine operatives	-0.327	-1.23	-0.709	-1.15
Elementary occupations	-0.140	-0.47	-0.100	-0.15
Income				
0-5,000	-	-	-	-
5,001-10,000	0.592	1.72	0.131	0.19
10,001-15,000	0.664*	1.95	0.095	0.14
15,001-20,000	0.923**	2.73	-0.242	-0.32
20,001-25,000	1.054**	2.99	0.479	0.66
25,001-30,000	1.313***	3.54	0.340	0.43
30,001-35,000	0.716	1.87	0.955	1.17
35,001-40,000	1.038**	2.67	1.152	1.35
40,001-45,000	1.203**	2.90	0.332	0.39
45,001-50,000	0.752	1.60	1.789*	1.90
50,001-60,000	1.265**	2.81	1.147	1.25
60,001-70,000	1.144*	2.17	4.178**	2.78
70,001-80,000	0.457	1.14	0.459	0.47
80,001+	1.433	2.66	2.517*	1.90
Scottish Index of Multiple Deprivation				
Not in 15% most deprived areas	-	-	-	-
In 15% most deprived areas	-0.276	-1.82	-	-
Local Authority				
Glasgow	-	-	-	-
Aberdeen City	-0.194	-0.95	-	-
Aberdeenshire	-	-	-1.095	1.34

Angus	-1.241	-1.15	-	-
Argyll & Bute	-	-	-1.341	-1.65
Clackmanshire	-	-	-	-
Dumfries & Galloway	-	-	-0.956	-1.02
Dundee City	0.343	1.60	-	-
East Ayrshire	-	-	-1.378	-1.40
East Dunbartonshire	0.228	0.68	-	-
East Lothian	0.547	1.73	-0.996	-0.84
East Renfrewshire	0.186	0.69	-	-
Edinburgh City of	-0.061	-0.39	-	-
Eilean Siar	-	-	-0.230	-0.29
Falkirk	-	-	-	-
Fife	-	-	-	-
Highlands	-	-	-0.945	-1.24
Inverclyde	-	-	-	-
Midlothian	-	-	-	-
Moray	-	-	-1.311	-1.41
North Ayrshire	-	-	1.097	0.72
North Lanarkshire	-0.236	-0.87	-	-
Orkney Islands	-	-	-1.470	-1.75
Perth and Kinross	-	-	-0.261	-0.29
Renfrewshire	-0.881**	-2.90	-	-
Scottish Borders	-	-	-1.876	-1.68
Shetland Islands	-	-	-1.107	-1.34
South Ayrshire	-	-	-1.117	-0.98
South Lanarkshire	-0.393	-1.13	-	-
Stirling	-	-	-	-
West Dunbartonshire	0.172	0.50	-	-
West Lothian	-	-	-	-
Health Status				
No disability or illness	-	-	-	-
Disability	0.227	0.93	-0.897	-1.60
Illness	-0.314	-1.57	-0.270	-0.70
Both disability and illness	0.177	0.67	-0.421	-0.81
Presence of Children				
No Children	-	-	-	-
One child	-0.415*	-2.18	-0.132	-0.31

Two children	0.148	0.69	-0.016	-0.03
Three+ children	-0.271	-0.88	1.144	1.69
Neighbourhood Satisfaction Rating				
Very good	-	-	-	-
Fairly good	-0.085	-0.71	-0.622*	-1.90
Fairly poor	-0.118	-0.44	-0.920	-0.69
Very poor	-0.054	-0.14	-1.512	-1.46

*p<0.05, **p<0.01, ***p<0.001

Urban

Intercept -3.319***

Pseudo R2 = 11.8%

-2 Log-likelihood = -1503

N = 2698

df = 62

Remote rural

Intercept -1.523

Pseudo R2 = 22.3%

-2 Log-likelihood = -224

N = 625

df = 62

7.6.1 Post Estimation Analysis of the Large Urban and Remote Rural Model

Table 7.9 shows the predicted probabilities for each of the independent variables, while holding all others at their mean.

Table 7.9 The Model's Predicted Probability Percentage over the Range of Independent Variables, Large Urban / Remote Rural

Independent Variables	***Large Urban (%)***	***Remote Rural (%)***
Sex		
Male	20.1	44

Female	21.8	49.7
Age		
16-24	15.5	28.6
25-34	19.3	37.9
35-44	28.2	57.5
45-54	29.2	53.2
55-64	19	52.8
65-74	21	53.3
75+	13.4	31.8
Marital Status		
Single	21.2	51.1
Married / cohabiting	19	46.6
Separated / Widowed / divorce	26.2	42.7
Education		
No educational qualifications	11.1	31.8
O'Grade or equivalent	13.5	63.5
H'Grade or equivalent	26.2	32.2
HNC/HND or equivalent	31.3	42.6
Degree, professional qualification or higher	34	61.5
Other qualification	18.3	26.6
Employment Status		
Full-time employed	15.4	33.5
Self-employed	23.5	30.9
Part-time employed	25.1	67.1
Permanently retired	30.4	56.3
Looking after home and family	22.9	55.5
Unemployed	10.7	61
Education and training	34.3	83.3
Permanently & temporary sick	14.3	27
Social-economic Status		
Managers, senior officials & professional occupations	23.1	49.6
Associate professional, technical & administrative and secretarial	22.8	39.4
Skilled trades & personal service occupations	20.2	55.9
Sales and customer service, process, plant & machine operatives	17.8	32.6
Elementary occupations	20.7	45.7
Income		

0-5,000	10.2	32.2
5,001-10,000	17	35.2
10,001-15,000	18.1	34.4
15,001-20,000	22.2	27.2
20,001-25,000	24.6	43.4
25,001-30,000	29.7	40.1
30,001-35,000	18.9	55.3
35,001-40,000	24.3	60.1
40,001-45,000	27.5	39.9
45,001-50,000	19.4	74
50,001-60,000	28.7	60
60,001-70,000	26.3	96.8
70,001-80,000	15.2	42.9
80,001+	32.3	85.5
Not in 15% most deprived areas		
Not in 15% most deprived areas	22.3	47.1
In 15% most deprived areas	17.9	-
Local Authority		
Glasgow	22.1	-
Aberdeen City	18.9	-
Aberdeenshire	-	43.7
Angus	7.6	-
Argyll & Bute	-	37.78
Clackmanshire	-	-
Dumfries & Galloway	-	47.1
Dundee City	28.6	-
East Ayrshire	-	36.9
East Dumbartonshire	26.3	-
East Lothian	32.9	46.2
East Renfrewshire	25.5	-
Edinburgh City of	21.1	-
Eilean Siar	-	64.8
Falkirk	-	-
Fife	-	-
Highlands	-	47.4
Inverclyde	-	-
Midlothian	-	-

Moray	-	38.5
North Ayrshire	-	87.4
North Lanarkshire	18.3	-
Orkney Islands	-	34.8
Perth and Kinross	-	64.1
Renfrewshire	16.1	-
Scottish Borders	-	26.2
Shetland Islands	-	43.4
South Ayrshire	-	43.2
South Lanarkshire	16.1	-
Stirling	-	69.9
West Dunbartonshire	25.2	-
West Lothian	-	-
Health Status		
No disability or illness	21.3	48.4
Disability	25.3	27.6
Illness	16.5	41.7
Both disability and illness	24.4	58.8
Neighbourhood Rating		
Very good	21.7	50.5
Fairly good	20.3	35.4
Fairly poor	19.8	28.9
Very poor	20.8	18
Presence of Children		
No children	21.8	46
1 child	15.6	42.7
2 children	24.5	45.6
3+ children	17.6	72.8

Note that empty cells is where data has been omitted

7.6.2 Profile of Volunteer Behaviour of Large Urban and Remote Rural People

Examining gender results shows that, as with the full model, both the urban and rural models show that females volunteer more than males. When examining both the urban and rural models, when there is a decline, the probability of volunteering increases with age up to the age of 75, the peak age group for the urban model being at 45–54 and the peak age group for the rural model being at 35–44. In the urban

model, the marital group, people who are separated, widowed, or divorced tend to volunteer more, and people who are married tending to volunteer less. In the rural model, single people have a higher propensity to volunteer, and people who are separated, married or divorced having a lower propensity to volunteer.

Both models show a positive correlation between education level and volunteering. For the urban model, the highest participation rate was found in the individuals who possessed a degree, professional qualification or higher and the least likely to volunteer were individuals who had no educational qualifications. For the rural model, the highest participation rate was found in the individuals who possessed a school level qualification and people who had a degree, professional qualification or higher, and the least likely to volunteer were individuals who had other forms of qualifications.

When examining employment status and volunteer participation, it was found that, in both of the models, people are more likely to volunteer if they are in educational or government training course, and people are less likely to volunteer if they are unemployed in the urban model, and if they are permanently or temporary sick in the rural model. In the social economic status variable, it was found that people in the urban model that are in managers, senior officials or in professional occupations have a higher probability of volunteering, and for the rural model, people in the skilled trades & personal service occupations are the most probable to participate in volunteering.

Both models show that higher levels of income are associated with higher levels of volunteering. In the urban model, it was found that, in the 15 per cent most deprived areas in Scotland, people are significantly less likely to volunteer than those who live outside these areas, which is in line with the results from the full model. For the rural model, there is a high probability of volunteering if the person does not live in one of the 15 per cent SIMD areas; the people living in the 15 per cent SIMD area were omitted.

In both models, several categories were omitted from the Local Authority variable because of the urban rural classification link with Local Authorities. The scattered

results show that, for the urban model, people are most likely to volunteer from East Lothian and least likely to volunteer from Angus. For the rural model, people are most likely to volunteer from North Ayrshire and least likely to volunteer from the Scottish Borders. When considering the independent variable health, it was found that for the urban model, a person with a disability has a high probability of volunteering in contrast with the rural model, where a person with a disability has the lowest probability of volunteering.

In the urban model, neighbourhood satisfaction is not a significant factor in the decision to volunteer, whereas in the rural model, it is a significant factor, with people considerably more likely to volunteer is they are very satisfied with their neighbourhood than if they are not. With the urban model, the presence of two children within the household does increase the propensity to volunteer compared to no children present, while a household with one or three plus children causes a decrease in volunteering compared to no children present. In the remote rural model, the presence of three or more children has the highest effect on the decision to volunteer with the least effect found when there is only one child present.

7.6.3 Marginal Effect Analysis of the Large Urban and Remote Rural Model

The summary of example combination predicted probabilities for the urban model, shown in Table 7.10, highlights that education, employment, income, Local Authority, marital status, and age are significant. For the rural model, the combinations of the probabilities show that, as with the urban model, Local Authority employment, education, and age are significant variables with the addition of neighbourhood satisfaction rating, the presence of children and health also being significant variables in predicting volunteering for this group. As there are no remote rural areas in the deprivation zones, this combination was not estimable.

Table 7.10 Summary of Predicted Probability by Type for Urban and Rural

Ideal Type	***Probability of Volunteering***
Sex	
Urban	
Male, aged 29, single, professional qualification, personal service occupation,	27.5%

full-time employed, living in Glasgow, income £38,000 per year	
Female, aged 29, single, professional qualification, personal service occupation, full-time employed, living in Glasgow, income £38,000 per year	29.5%
Rural	
Male, aged 37, divorced, 2 children present, degree qualification, self-employed, income £42,250 per year, not in 15% most deprived areas, no illness or disability, rates his neighbourhood as very good, living in Perth & Kinross	60.3%
Female, aged 37, divorced, 2 children present, degree qualification, self-employed, income £42,250 per year, not in 15% most deprived areas, no illness or disability, rates his neighbourhood as very good, living in Perth & Kinross	65.6%
Age	
Urban	
Female, **aged 46**, married, college level education, part-time employed, sales occupation, income £27,000 per year, living in Edinburgh, rates her neighbourhood as very good	53.2%
Female, **aged 26**, married, college level education, part-time employed, sales occupation, income £27,000 per year, living in Edinburgh, rates her neighbourhood as very good	39.7%
Rural	
Female, **aged 33**, married, 3 children present, higher qualification, looking after home and family, income £29,500 per year, living in Orkney Islands, rates her neighbourhood as very good	43.4%.
Female, **aged 46**, married, 3 children present, higher qualification, looking after home and family, income £29,500 per year, living in Orkney Islands, rates her neighbourhood as very good	58.5%
Marital Status	
Urban	
Female, aged 42, **divorced**, self-employed, living in East Dunbartonshire, income £32,500 per year, degree qualification, rates her neighbourhood as fairly good	58.3%
Female, aged 42, **married**, self-employed, living in East Dunbartonshire, income £32,500 per year, degree qualification, rates her neighbourhood as fairly good	48.1%
Rural	
Female, aged 39, **married**, self-employed, living in Aberdeenshire, income £36,500 per year, higher qualification, no illness or disability, rates her neighbourhood as very good	39.9%
Female, aged 39, **divorced**, self-employed, living in Aberdeenshire, income £36,500 per year, higher qualification, no illness or disability, rates her neighbourhood as very good	36.2%
Local Authority	
Urban	
Male, aged 39, married, 2 children present, self-employed, **living in East Lothian**, income £41,500 per year, professional qualification, no illness or disability, rates his neighbourhood as fairly good	70%
Male, aged 39, married, 2 children present, self-employed, **living in Angus**, income £41,500 per year, professional qualification, no illness or disability, rates	28.1%

his neighbourhood as fairly good	
Rural	
Male, aged 49, single, self-employed, **living in Stirling**, income £49,500 per year, professional qualification, no illness or disability, rates his neighbourhood as fairly good	85%
Male, aged 49, single, self-employed, **living in East Ayrshire**, income £49,500 per year, professional qualification, no illness or disability, rates his neighbourhood as fairly good	58.9%
Education	
Urban	
Female, aged 28, single, 1 child present, **no qualifications**, full-time employed, living in Dundee, income £22,000 per year, no illness or disability, rates her neighbourhood as very good, not in 15% most deprived areas	10.8%
Female, aged 28, single, 1 child present, **degree qualification**, full-time employed, living in Dundee, income £22,000 per year, no illness or disability, rates her neighbourhood as very good, not in 15% most deprived areas	33.4%
Rural	
Female, aged 36, married, **no qualification**, full-time employed, living in the Highlands, income £22,000 per year, elementary occupation, not in 15% most deprived areas, no illness or disability	13.7%
Female, aged 36, married, **professional qualification**, full-time employed, living in the Highlands, income £22,000 per year, elementary occupation, not in 15% most deprived areas, no illness or disability	35.4%
Neighbourhood Satisfaction	
Urban	
Male, aged 42, widowed, living in North Lanarkshire, degree qualification, full-time employed, income £28,500 per year, **rates his neighbourhood as very good**, no illness or disability	48.7%
Male, aged 42, widowed, living in North Lanarkshire, degree qualification, full-time employed, income £28,500 per year, **rates his neighbourhood as very poor**, no illness or disability	47.4%
Rural	
Male, aged 67, widowed, retired, living in the Shetland Islands, school qualification, income £32,250 per year, **rates his neighbourhood as very good**, no illness or disability	77.5%
Male, aged 67, widowed, retired, living in the Shetland Islands, school qualification, income £32,250 per year, **rates his neighbourhood as very poor**, no illness or disability	43.1%
Employment	
Urban	
Male, aged 44, single, **full-time employed**, living in West Dumbartonshire, income £29,500 per year, college level qualification, no illness or disability, not in 15% most deprived areas	49.8%
Male, aged 44, single, **part-time employed**, living in West Dunbartonshire, income £29,500 per year, college level qualifications, no illness or disability, not in 15% most deprived areas	64.6%

Rural	
Male, aged 39, **full-time employed**, living in East Lothian, income £18,000 per year, elementary occupation, work-based qualification, no illness or disability, not in 15% most deprived areas	12.4%
Male, aged 39, **part-time employed**, living in East Lothian, income £18,000 per year, elementary occupation, work-based qualification, no illness or disability, not in 15% most deprived areas	36.4%
Health	
Urban	
Female, aged 56, married, college level qualification, part-time employed, **no illness or disability**, living in East Renfrewshire, not in 15% most deprived areas, rates her neighbourhood as fairly good, income £14,500 per year	41%
Female, aged 56, married, college level qualification, part-time employed, **has a disability**, living in East Renfrewshire, not in 15% most deprived areas, rates her neighbourhood as fairly good, income £14,500 per year	46.6%
Rural	
Female, aged 45, college level qualification, part-time employed, sales occupation, **no illness or disability**, living in South Ayrshire, not in 15% most deprived areas, rates her neighbourhood as very good, income £16,500 per year	44.1%
Female, aged 45, college level qualification, part-time employed, sales occupation, **has a disability**, living in South Ayrshire, not in 15% most deprived areas, rates her neighbourhood as very good, income £16,500 per year	24.3%
Social-Economic Grouping	
Urban	
Male, aged 47, separated, living in Edinburgh, work-based qualification, self-employed, income £31,500 per year, **elementary occupation**, rates his neighbourhood as fairly good, no illness or disability	35.3%
Male, aged 47, separated, living in Edinburgh, work-based qualification, self-employed, income £31,500 per year, **technical occupation**, rates his neighbourhood as fairly good, no illness or disability	38.1%
Rural	
Male, aged 55, married, two children present, living in Eilean Sair, work-based qualification, full-time employed, income £37,250 per year, **manager**, rates his neighbourhood as fairly good, no illness or disability	28.4%
Male, aged 55, married, two children present, living in Eilean Sair, work-based qualification, full-time employed, income £37,250 per year, **elementary occupation**, rates his neighbourhood as fairly good, no illness or disability	30.5%
Income	
Urban	
Female, aged 43, married, 3 children present, degree qualification, living in Glasgow, personal service occupation, self-employed, **income £33,500 per year**, no illness or disability, rates her neighbourhood as very good	44%
Female, aged 43, married, 3 children present, degree qualification, living in Glasgow, personal service occupation, self-employed, **income £53,500 per year**, no illness or disability, rates her neighbourhood as very good	57.6%
Rural	

Female, aged 29, single, no children present, professional qualification, living in Dumfries & Galloway, full-time employed, administrative occupation, **income £30,000 per year**, no illness or disability, rates her neighbourhood as very good	33.7%
Female, aged 29, single, no children present, professional qualification, living in Dumfries & Galloway, full-time employed, administrative occupation, **income £15,000 per year**, no illness or disability, rates her neighbourhood as very good	28.5%
Deprivation Level	
Urban	
Male, aged 65, married, living in North Lanarkshire, work-based qualification, retired, income £26,500 per year, **not in 15% most deprived areas**, rates his neighbourhood as fairly good	30.2%
Male, aged 65, married, living in North Lanarkshire, work-based qualification, retired, income £26,500 per year, **in 15% most deprived areas**, rates his neighbourhood as fairly good	24.7%
Rural	
Male, aged 42, married, 3 children present, living in Aberdeenshire, work-based qualification, part-time employed, income £16,500 per year, **not in 15% most deprived areas**	55.6%
Male, aged 42, married, 3 children present, living in Aberdeenshire, work-based qualification, part-time employed, income £16,500 per year, **in 15% most deprived areas**	-
Presence of Children	
Urban	
Female, aged 36, married, **2 children present**, living in Aberdeen, part-time employed, rates her neighbourhood as very good, income £29,500 per year, not in 15% most deprived areas	60.4%
Female, aged 36, married, **no children present**, living in Aberdeen, part-time employed, rates her neighbourhood as very good, income £29,500 per year, not in 15% most deprived areas	56.8%
Rural	
Female, aged 39, divorced, **no children present**, school level education, part-time employed, income 16,400 per year, living in Argyll and Bute, rates her neighbourhood as fairly poor, no illness or disability	42.3%
Female, aged 39, divorced, **3 children present**, school level education, part-time employed, income 16,400 per year, living in Argyll and Bute, rates her neighbourhood as fairly poor, no illness or disability	69.7%
Example of a High Probability Type	
Urban	
Female, aged 47, separated, 2 children present, degree qualification, part-time employed, administrative occupation, living in East Lothian, income £26,500 per year, not in 15% most deprived areas, rates her neighbourhood as very good, no illness or disability	86.6%
Rural	
Female, aged 38, single, degree qualification, part-time employed, personal service occupation, living in North Ayrshire, income of £37,250 per year, rates her neighbourhood as very good, no illness or disability	99.3%

Example of a Low Probability Type	
Urban	
Male, aged 22, married, 1 child present, no qualifications, unemployed, income £10,000 per year, living in Angus, in 15% most deprived areas, rates his neighbourhood as fairly poor, has an illness	0.8%
Rural	
Male, aged 24, separated, no qualifications, full-time employed, living in Scottish Borders, income £16, 500 per year, rates his neighbourhood as very poor	0.5%

7.7 No-Qualification and High-Qualification Statistical Model

The no-qualification model accounts for the people in full model who have no formal educational qualifications, totalling 1,835 observations. Compared to the main model, only the effects of the following covariates on the probability of volunteering is significant at the corresponding levels age (p=<.001), employment (p=<.001), income level (p=<0.001), health status (p=0.007), Local Authority area (p=0.01), and six-fold urban/rural classification (p=0.01). The high-qualification model accounts for the people in the full sample who have a degree, professional qualification or higher, giving us 1,688 observations. The results show the predictors that are particularly significant are Local Authority area (p=0.02) and age (p=0.02). All results are shown in table 7.11.

Table 7.11 No-Qualification and High-Qualifications Model of the Impact of Social-Economic and Demographic Characteristics on the Decision to Volunteer, Scotland, 2009, Logit Analysis

Independent Variable	*No Qual*		*High Qual*	
	Coef	*z stat*	*Coef*	*z stat*
Gender				
Male	-	-	-	-
Female	-0.219	-1.19	0.157	1.26
Age				
16-24	-	-	-	-
25-34	-0.090	-0.10	0.409	1.25
35-44	1.141	1.31	0.755*	2.19
45-54	0.244	0.27	1.008**	2.87
55-64	0.456	0.50	0.592	1.55

65-74	0.193	0.20	0.750	1.74
75+	-0.399	-0.41	0.403	0.87
Marital Status				
Single	-	-	-	-
Married / Cohabiting	-0.367	-1.28	-0.162	-0.98
Separated / Divorced / Widowed	-0.220	-0.83	0.148	0.73
Employment Status				
Full-time employed	-	-	-	-
Self-employed	0.463	0.71	0.374	1.49
Part-time employed	1.498***	3.79	0.060	0.15
Permanently retired	2.132***	4.68	0.167	0.59
Looking after home & family	1.461**	2.79	0.065	0.21
Unemployed	1.977***	4.00	0.144	0.34
Education & training course	1.201	1.14	0.344	1.06
Permanently & temporary sick	0.961*	1.95	0.179	0.37
Social-Economic Status				
Managers, senior officials & professional occupations	-	-	-	-
Associate professional, technical & administrative and secretarial	1.020	1.46	-0.108	-0.67
Skilled trades & personal service occupations	0.155	0.26	-0.378	-1.45
Sales and customer service, process, plant & machine operatives	-0.544	-0.85	-0.518	-1.38
Elementary occupations	-0.181	-0.30	-0.030	-0.07
Income				
0-5,000	-	-	-	-
5,001-10,000	2.574**	3.29	-0.527	-1.05
10,001-15,000	3.096***	3.99	-0.270	-0.59
15,001-20,000	3.081***	3.89	0.149	0.33
20,001-25,000	3.466***	4.32	0.282	0.62
25,001-30,000	3.400***	4.01	0.156	0.34
30,001-35,000	3.344***	3.86	0.149	0.32
35,001-40,000	3.024**	2.99	0.125	0.26
40,001-45,000	-	-	0.413	0.86
45,001-50,000	4.867***	4.40	-0.184	-0.37
50,001-60,000	4.245***	3.58	0.56	1.13
60,001-70,000	-	-	0.489	0.91
70,001-80,000	2.659**	3.14	0.209	0.42
80,001+	-	-	0.460	0.84

Scottish Index of Multiple Deprivation				
Not in 15% most deprived areas	-	-	-	-
In 15% most deprived areas	-0.145	-0.61	-0.285	-1.12
Area of Residence				
Large urban areas	-	-	-	-
Other urban areas	0.390	0.93	0.466	1.34
Small accessible towns	0.503	1.15	0.053	0.15
Small remote towns	0.933	1.49	0.499	1.00
Accessible rural	0.861*	1.92	0.267	0.72
Remote rural	1.528**	2.97	0.640	1.47
Local Authority				
Glasgow	-	-	-	-
Aberdeen City	0.364	0.74	-0.182	-0.60
Aberdeenshire	-0.801	-1.40	0.685	1.49
Angus	-0.504	-0.64	0.371	0.67
Argyll & Bute	-2.416**	-2.57	0.065	0.12
Clackmanshire	0.560	0.84	-0.747	-1.35
Dumfries & Galloway	0.097	0.18	-0.227	-0.45
Dundee City	0.196	0.33	0.233	0.62
East Ayrshire	-0.823	-1.36	-0.417	-0.71
East Dunbartonshire	-1.061	-1.43	0.725	1.63
East Lothian	-1.228	-1.64	0.387	0.80
East Renfrewshire	1.067*	1.89	0.104	0.29
Edinburgh City of	-0.691	-1.21	-0.075	-0.35
Eilean Siar	-1.023	-1.39	0.410	0.72
Falkirk	-2.510**	-2.36	-0.721	-1.13
Fife	-1.284*	-2.28	-0.563	-1.29
Highlands	-0.916	-1.30	0.367	0.77
Inverclyde	-0.057	-0.09	0.167	0.26
Midlothian	-0.218	-0.28	-0.692	-1.19
Moray	-0.338	-0.44	-0.326	-0.59
North Ayrshire	-0.189	-0.32	0.104	0.20
North Lanarkshire	-0.626	-1.34	-0.228	-0.54
Orkney Islands	-1.293	-1.65	-0.026	-0.04
Perth and Kinross	-0.756	-0.96	-0.114	-0.22
Renfrewshire	-0.001	0.00	-1.431***	-3.39
Scottish Borders	-1.245	-1.80	-0.236	-0.43

Shetland Islands	-1.223	-1.62	-0.096	-0.13
South Ayrshire	-0.356	-0.53	0.086	0.16
South Lanarkshire	-1.239*	-2.24	-0.578	-1.48
Stirling	-	-	-0.053	-0.09
West Dunbartonshire	0.573	1.03	-0.776	-1.04
West Lothian	-0.018	-0.02	-1.057*	-1.89
Health Status				
No disability or illness	-	-	-	-
Disability	-0.424	-1.45	-0.045	-0.14
Illness	-0.813**	-3.42	0.074	0.33
Both disability and illness	-0.342	-1.26	-0.233	-0.58
Presence of Children				
No Children	-	-	-	-
One child	-0.290	-0.70	-0.163	-0.84
Two children	0.274	0.66	-0.056	-0.26
Three+ children	-0.112	-0.18	-0.508	-0.66
Neighbourhood Satisfaction Rating				
Very good	-	-	-	-
Fairly good	-0.250	-1.33	0.059	0.44
Fairly poor	-0.252	-0.63	0.055	0.16
Very poor	-0.508	-0.83	-0.131	-0.20

*p<0.05, **p<0.01, ***p<0.001

No qualification

Intercept -5.715***

Pseudo R2 = 12.9%

-2 Log-likelihood = -536

N = 1835

df = 76

High qualification

Intercept -1.116*

Pseudo R2 = 6.9%

-2 Log-likelihood = -1108

N = 1688

df = 80

7.7.1 Post Estimation Analysis of No-Qualification and High-Qualification Model

Table 7.12 shows the predicted probabilities for each of the independent variables, while holding all others at their mean.

Table 7.12 The Model's Predicted Probability Percentage over the Range of Independent Variables, No-Qualification / High-Qualification Model

Independent Variables	*No Qualification (%)*	*High Qualification (%)*
Sex		
Male	11.1	41.1
Female	9.1	45
Age		
16-24	8.1	28.9
25-34	7.5	38
35-44	21.8	46.4
45-54	10.2	52.7
55-64	12.3	42.4
65-74	9.7	46.3
75+	5.6	37.8
Marital Status		
Single	12.3	45.2
Married / cohabiting	8.8	41.2
Separated / Widowed / divorce	10.1	48.9
Employment Status		
Full-time employed	2.4	41
Self-employed	3.8	50.3
Part-time employed	10.1	41.8
Permanently retired	17.4	45.1
Looking after home and family	9.7	42.6
Unemployed	15.3	44.5
Education and training	7.7	49.5
Permanently & temporary sick	6.1	45.4

Social-economic Status		
Managers, senior officials & professional	11.4	45.5
Associate professional, technical & administrative and secretarial	26.4	42.8
Skilled trades & personal service occupations	13.1	36.4
Sales and customer service, process, plant & machine operatives	6.9	33.2
Elementary occupations	9.7	44.7
Income		
0-5,000	0.5	39.4
5,001-10,000	7.2	27.7
10,001-15,000	11.5	33.2
15,001-20,000	11.4	43
20,001-25,000	15.9	46.3
25,001-30,000	15	43.2
30,001-35,000	14.3	43.1
35,001-40,000	10.8	42.5
40,001-45,000	-	49.6
45,001-50,000	43.4	35.1
50,001-60,000	29.2	53.3
60,001-70,000	-	51.5
70,001-80,000	7.7	44.5
80,001+	-	50.8
Scottish Index of Multiple Deprivation		
Not in 15% most deprived areas	10.2	43.7
In 15% most deprived areas	9	36.8
Area of residence		
Large urban	7.2	38.5
Other urban	10.2	49.9
Small accessible towns	11.3	39.8
Small remote towns	16.4	50.8
Accessible rural	15.5	45
Remote rural	26.3	54.3
Local Authority		
Glasgow	15.4	45.7
Aberdeen City	20.8	41.2
Aberdeenshire	7.5	62.5
Angus	9.9	55

Argyll & Bute	1.6	47.3
Clackmanshire	24.2	28.5
Dumfries & Galloway	16.7	40.1
Dundee City	18.1	51.5
East Ayrshire	7.4	35.7
East Dunbartonshire	5.9	63.5
East Lothian	5	55.4
East Renfrewshire	34.6	48.3
Edinburgh City of	8.3	43.8
Eilean Siar	6.1	55.9
Falkirk	1.4	29
Fife	4.8	32.4
Highlands	6.8	54.9
Inverclyde	16.1	49.9
Midlothian	12.7	29.6
Moray	11.5	37.8
North Ayrshire	18	48.3
North Lanarkshire	8.8	40.1
Orkney Islands	4.7	45
Perth and Kinross	7.8	42.9
Renfrewshire	15.4	16.7
Scottish Borders	4.9	39.9
Shetland Islands	5	43.3
South Ayrshire	11.3	47.9
South Lanarkshire	5	32.1
Stirling	-	44.4
West Dunbartonshire	24.4	27.9
West Lothian	15.1	22.6
Health Status		
No disability or illness	12.2	43.2
Disability	8.4	42.1
Illness	5.8	45.1
Both disability and illness	9	37.6
Neighbourhood Rating		
Very good	11.1	42.7
Fairly good	8.8	44.2
Fairly poor	8.8	44.1

Very poor	7	39.6
Presence of Children		
No children	10	43.8
1 child	7.6	39.8
2 children	12.7	45.2
3+ children	9	38.7

Note that empty cells is where data has been omitted

7.7.2 Profile of Volunteer Behaviour of People with No Qualifications and High Qualifications

In the no-qualification model, men are more likely to volunteer than women are, and the opposite is true for the high-qualification model. In the no-qualification model, when examining age, volunteer participation was found to be the greatest among the 34–44 year olds, and the least in the 16–24 and 75+ year olds. In the qualification model, volunteer participation increases with age with the highest propensity found within the 45-54 year olds and again, the least within the 16–24 year olds. When examining the no-qualification model, the people who are permanently retired are more likely to volunteer and the least likely to volunteer are the people who are working full-time. With the qualification model, it was found that employment status does not have a significant effect, except for people who are permanently and temporary sick, who have a higher probability to volunteer.

With the qualification model, when considering volunteering participation and social-economic grouping, it was found the higher, the social-economic group, the higher the volunteering participation rate, as in the full model. The highest participation rates are among people who are in the highest social grouping (managers, senior officials, and professionals). With the no-qualification model, the group with the highest propensity to volunteer are people who are in the associate professional, technical & administrative and secretarial groupings. In examining both models, it was found that people in the higher income levels tend to participate more in volunteering. In addition, in both models, it was found that, in the 15 per cent most deprived areas in Scotland, people are significantly less likely to volunteer than those people who live outside these areas, which is in line with the results from the full model.

In both of the models, when examining the six-fold urban/rural classifications, people who live in remote rural and accessible rural areas are more likely to volunteer than people living in large urban towns, where people are the least likely to volunteer, as with the full model. The local Authority variable shows that people with no qualifications are more likely to volunteer in East Renfrewshire and West Dunbartonshire and less likely to volunteer in Falkirk and Argyll and Bute. People who are highly qualified are less likely to volunteer if they come from Renfrewshire and West Lothian, but more likely to volunteer if they come from East Dunbartonshire Aberdeenshire. The results show that, people with no qualifications who have no illness or disability are more likely to volunteer, and people with an illness were the least likely to volunteer, whereas having high qualifications with an illness increases the likelihood of volunteering; however, they are least likely to volunteer if they have both an illness and a disability.

Both the regression models show that the propensity to volunteer is higher with the presence of two children. With the no-qualification model, the group the least likely to volunteer is when there is only one child present. For the high-qualification model, the least likely group to volunteer is when there are three or plus children present. In examining neighbourhood satisfaction and the propensity to volunteer, it was found that, in both models, the more satisfied they are with their neighbourhood, the more likely they are to participate in volunteering.

7.7.3 Marginal Effect Analysis of No-Qualification and High-Qualification Model

The following table shows a summary of example combination predicted probabilities for the no-qualification model, highlighting that age, Local Authority, six classification, income, health, and employment are significant between the categories within the groups. For the higher-qualification model, the example combination predicted probabilities shows that, as with the no-qualification model, Local Authority, age, and six-fold urban/rural classifications variables have significant differences within the groups.

Table 7.13 Summary of Predicted Probability by Type for No-qualification and High Qualification

Ideal Type	***Probability of Volunteering***
Sex	
No Qualification	
Male, aged 25, single, personal service occupation, full-time employed, living in East Renfrewshire, income £22,000 per year	23.3%
Female, aged 25, single, personal service occupation, full-time employed, living in East Renfrewshire, income £22,000 per year	19.6%
High Qualification	
Male, aged 55, divorced, self-employed, sales occupation, income £44,000 per year, not in 15% most deprived areas, no illness or disability, rates his neighbourhood as very good, living in the Highlands, remote rural area	60.6%
Female, aged 55, divorced, self-employed, sales occupation, income £44,000 per year, not in 15% most deprived areas, no illness or disability, rates her neighbourhood as very good, living in the Highlands, remote rural area	64.3%
Age	
No Qualification	
Female, **aged 25**, separated, part-time employed, sales occupation, income £19,000 per year, living in Stirling, rates her neighbourhood as fairly good	25.5%
Female, **aged 43**, separated, part-time employed, sales occupation, income £19,000 per year, living in Stirling, rates her neighbourhood as fairly good	54%
High Qualification	
Female, **aged 23**, married, looking after home and family, income £28,500 per year, living in Aberdeen, rates her neighbourhood as very good	26.3%.
Female, **aged 45**, married, looking after home and family, income £28,500 per year, living in Aberdeen, rates her neighbourhood as very good	49.5%
Marital Status	
No Qualification	
Female, aged 49, **single**, part-time employed, living in South Ayrshire, income £16,800 per year, rates her neighbourhood as very good	11.1%
Female, aged 49, **married**, part-time employed, living in South Ayrshire, income £16,800 per year, rates her neighbourhood as very good	7.9%
High Qualification	
Male, aged 52, **married**, self-employed, living in Aberdeenshire, income £37,500 per year, no illness or disability, rates his neighbourhood as very good	72.5%
Female, aged 39, **single**, self-employed, living in Aberdeenshire, income £36,500 per year, no illness or disability, rates her neighbourhood as very good	75.6%
Local Authority	
No Qualification	
Male, aged 56, married, 2 children present, self-employed, skilled trades occupation, **living in North Ayrshire**, income £32,500 per year, no illness or	29.1%

disability, rates his neighbourhood as very good	
Male, aged 56, married, 2 children present, self-employed, skilled trades occupation, **living in East Lothian**, income £32,500 per year, no illness or disability, rates his neighbourhood as very good, not in 15% most deprived areas	9%
High Qualification	
Male, aged 33, single, full-time employed, **living in East Renfrewshire**, income £44,500 per year, no illness or disability, rates his neighbourhood as very good, not in 15% most deprived areas	47.2%
Male, aged 33, single, full-time employed, **living in West Lothian**, income £44,500 per year, no illness or disability, rates his neighbourhood as very good, not in 15% most deprived areas	21.8%
Six classification areas	
No Qualification	
Female, aged 38, married, no children, income £24,000 per year, part-time employed, rates her neighbourhood as very good, **remote rural area**, not in 15% most deprived areas, no illness or disability	68.4%
Female, aged 38, married, no children, income £24,000 per year, part-time employed, rates her neighbourhood as very good, **large urban area**, not in 15% most deprived areas, no illness or disability	31.9%
High Qualification	
Female, aged 49, married, 3 children present, income £24,500 per year, part-time employed, rates her neighbourhood as very good, **remote rural area**, not in 15% most deprived areas, no illness or disability	60.7%
Female, aged 49, married, 3 children present, income £24,500 per year, part-time employed, rates her neighbourhood as very good, **large urban area**, not in 15% most deprived areas, no illness or disability	44.9%
Neighbourhood Satisfaction	
No Qualification	
Male, aged 42, married, no children, living in West Dunbartonshire, self-employed, income £29,000 per year, **rates his neighbourhood as very good**, no illness or disability	41.1%
Male, aged 42, married, no children, living in West Dunbartonshire, self-employed, income £29,000 per year, **rates his neighbourhood as very poor**, no illness or disability	35.2%
High Qualification	
Male, aged 63, married, retired, living in the Shetland Islands, income £31,000 per year, **rates his neighbourhood as very good**, no illness or disability, not in 15% most deprived areas	59.6%
Male, aged 63, married, retired, living in the Shetland Islands, income £31,000 per year, **rates his neighbourhood as very poor**, no illness or disability, not in 15% most deprived areas	56.1%
Employment	
No Qualification	
Male, aged 46, separated, **full-time employed**, living in Aberdeen, income £27,500 per year, no illness or disability, in 15% most deprived areas, rates his	11.9%

neighbourhood as fairly poor	
Male, aged 46, separated, **self-employed**, living in Aberdeen, income £27,500 per year, no illness or disability, in 15% most deprived areas, rates his neighbourhood as fairly poor	37.6%
High Qualification	
Male, aged 32, divorced, no children present, **part-time employed**, living in Midlothian, income £26,000 per year, skilled trades occupation, no illness or disability, not in 15% most deprived areas, rates his neighbourhood as fairly good	28.8%
Male, aged 32, divorced, no children present, **full-time employed**, living in Midlothian, income £26,000 per year, skilled trades occupation, no illness or disability, not in 15% most deprived areas, rates his neighbourhood as fairly good	28.1%
Health	
No Qualification	
Female, aged 56, widowed, part-time employed, **no illness or disability**, living in Inverclyde, in 15% most deprived areas, rates her neighbourhood as fairly poor, income £14,500 per year	26.6%
Female, aged 56, widowed, part-time employed, **has an illness**, living in Inverclyde, in 15% most deprived areas, rates her neighbourhood as fairly poor, income £14,500 per year	13.8%
High Qualification	
Female, aged 43, married, 1child present, looking after home and family, **no illness or disability**, living in North Lanarkshire, not in 15% most deprived areas, rates her neighbourhood as very good, income £16,500 per year	39.1%
Female, aged 43, married, 1child present, looking after home and family, **has a disability**, living in North Lanarkshire, not in 15% most deprived areas, rates her neighbourhood as very good, income £16,500 per year	38%
Social-Economic Grouping	
No Qualification	
Male, aged 45, married, 2 children, living in Clackmanshire, self-employed, income £31,500 per year, **elementary occupation**, rates his neighbourhood as fairly good, no illness or disability	21.1%
Male, aged 45, married, 2 children, living in Clackmanshire, self-employed, income £31,500 per year, **personal service occupation**, rates his neighbourhood as fairly good, no illness or disability	27.2%
High Qualification	
Male, aged 39, married, 1child present, living in Perth and Kinross, part-time employed, income £18,250 per year, **technical professional**, rates his neighbourhood as fairly good, no illness or disability	39%
Male, aged 39, married, 1child present, living in Perth and Kinross, part-time employed, income £18,250 per year, **plant and machine operative occupation**, rates his neighbourhood as fairly good, no illness or disability	38.3%
Income	
No Qualification	
Female, aged 66, widowed, living in Glasgow, retired, **income £10,000 per**	20.9%

year, no illness or disability, rates her neighbourhood as fairly good, not in 15% most deprived areas	
Female, aged 66, widowed, living in Glasgow, retired, **income £20,000 per year**, no illness or disability, rates her neighbourhood as fairly good, not in 15% most deprived areas	30.5%
High Qualification	
Female, aged 47, divorced, 2 children present, living in Glasgow, full-time employed, **income £19,750 per year**, no illness or disability, rates her neighbourhood as fairly good, not in 15% most deprived areas	71.8%
Female, aged 47, divorced, 2 children present, living in Glasgow, unemployed, **income £35,000 per year**, no illness or disability, rates her neighbourhood as fairly good, not in 15% most deprived areas	71.9%
Deprivation Level	
No Qualification	
Male, aged 39, single, living in Dundee, full-time employed, income £36,500 per year, technical profession, **not in 15% most deprived areas**, rates his neighbourhood as fairly good	38.1%
Male, aged 39, single, living in Dundee, full-time employed, income £36,500 per year, technical profession, **in 15% most deprived areas**, rates his neighbourhood as fairly good	34.7%
High Qualification	
Male, aged 66, married, living in Dumfries & Galloway, retired, income £22,500 per year, **not in 15% most deprived areas**	46.7%
Male, aged 66, married, living in Dumfries & Galloway, retired, income £22,500 per year, **in 15% most deprived areas**	39.7%
Presence of Children	
No Qualification	
Female, aged 28, married, **2 children present**, living in Dumfries and Galloway, part-time employed, rates her neighbourhood as very good, income £27,500 per year, not in 15% most deprived areas	23.6%
Female, aged 28, married, **no children present**, living in Dumfries and Galloway, part-time employed, rates her neighbourhood as very good, income £27,500 per year, not in 15% most deprived areas	19%
High Qualification	
Female, aged 39, divorced, **3 children present**, part-time employed, income £17,400 per year, living in North Ayrshire, rates her neighbourhood as fairly poor, no illness or disability	41%
Female, aged 39, divorced, **no children present**, part-time employed, income £17,400 per year, living in North Ayrshire, rates her neighbourhood as fairly poor, no illness or disability	46.1%
Example of a High Probability Type	
No Qualification	
Male, aged 64, divorced, retired, administrative occupation, living East Renfrewshire, remote rural, income £29,000 per year, not in 15% most deprived areas, rates his neighbourhood as very good, no illness or disability	97.4%

High Qualification	
Female, aged 45, separated, 2 children present, self-employed, manager, living in East Dunbartonshire, not in 15% most deprived areas, income £40,250 per year, rates her neighbourhood as very good, no illness or disability	88.3%
Example of a Low Probability Type	
No Qualification	
Female, aged 33, married, self-employed, customer service occupation, income £9,750 per year, living in Argyle and Bute, in 15% most deprived areas, rates her neighbourhood as fairly poor, has an illness	0.05%
High Qualification	
Male, aged 22, single, full-time employed, plant and machine operatives occupation, living in Renfrewshire, income £18,000 per year, rates his neighbourhood as very poor, in 15% most deprived areas	2.7%

7.8 Conclusion

The contribution of this chapter was to investigate some of the characteristics that may help in determining a Scottish person's choice to participate in volunteering activity or not, given their individual prefaces. The overall findings are that there is an increased probability of both male and female participation in volunteer activities if they have a higher education level, have a higher annual income, live in remote rural areas, are in the top social-economic groupings, are not living in any of the 15 per cent most deprived areas, are in good health, are retired or not working full-time and in age groups 45–54 and 65–74 year olds. When examining further into particular relationships within the sub group models, it was found that education, age employment and Local Authority variables are overall significant.

Income was important in the urban and no-qualification models, while health was important in the older, rural, no-qualifications models. The areas of residence were important in the older, no-qualification and high-qualification models and neighbourhood satisfaction was significant in the rural and older models. Social-economic status was important in the younger model, while marital status was important in the urban model and the presence of children was significant in the rural model. In examining the variables, several effects appear to be linked. The Local Authority and six classification areas are picking up some deprivation effects, while at the same time, deprivation effects are consistent with education level, income level

and social-economic status, which themselves have interlinking effects with each other. What is significant is the 45 to 74 age group need to be paid particular attention to, as they are most likely to volunteer. Overall, the model shows that social-economic and demographic characteristics have an influential role in determining volunteer participation, with variations in volunteering participation, especially geographic characteristics in Scotland.

Chapter 8 Conclusions

8.1 Introduction

In this chapter, the implications of the changing demography of Scotland and the impact on the market for volunteer labour are investigated. A summary of the results from previous chapters will be discussed along with weaknesses of this research. An example of a policy utilising the older volunteers will be discussed. Finally, direction of future research will be identified.

8.2 The Impact of the Supply of Volunteer Labour

To begin this investigation, the three scenarios in Chapter 3 (fertility, migration, and mortality sensitivity analysis) will be taken further and combined with age-specific volunteer rates. By taking the three scenarios, combined with the age-specific volunteer rates (given by the SHS special dataset 2009), it is possible to produce a number of forecasts of the potential future flow of volunteer labour, that is:

$$NV_t = \sum_{i=1}^{k} a_i N_{it}$$

where NV is the number of volunteers at time *t*; a_i is the assumed age-specific volunteer rate, with i=16, 17, ..., 75+; and N is the population in age group "i" in year "t". There are a number of underlying assumptions for the model. One is that there is an overall constant positive motivational effect on the current and potential future volunteers. This means the forecasted number of volunteers are realising their motivation to volunteer. Further, the voluntary sector in Scotland will have the ability to utilise the expanding voluntary labour effectively and efficiently.

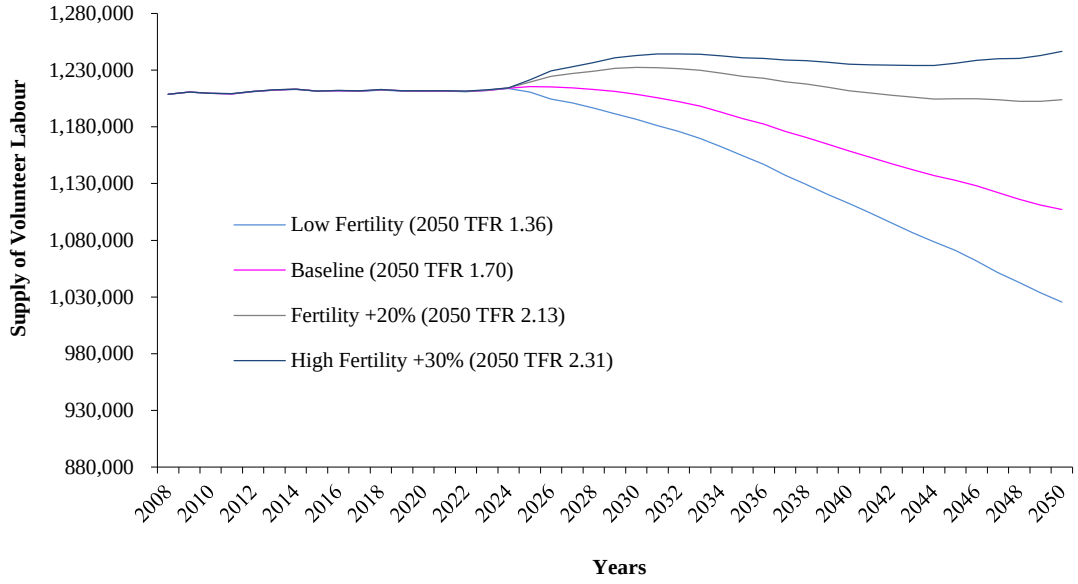
8.2.1 Impact of Fertility on the Supply of Volunteer Labour

This analysis examines how varying fertility rates could influence the supply of volunteer labour. In this analysis, net-migration is assumed to be zero, mortality is assumed to be the 2008-based principle projection. Figure 8.1 shows that the impact on the volunteer labour force does not begin until 2024, due to the fact volunteering

commences at 16 years old in the model. For the volunteer labour supply to stay relatively constant until 2050, there would need to be an increase of around 20 per cent (equivalent to a rate of 2.13) in the current fertility rate.

An assumption of an even higher increase in the current fertility rate of 30 per cent (equivalent to a rate of 2.31) would only increase the volunteer labour supply by 3.1 per cent from 2008 to 2050 (or 1,208,714 to 1,246,521 volunteers). Anything under the 20 per cent fertility rate increase would cause a reduction in volunteer labour, as shown in Figure 8.1. This suggests that a 30 per cent lower fertility rate (equivalent to a rate of 1.36) would reduce the supply of volunteer labour significantly. These simple forecasts indicate that higher fertility rates will have little impact on the size of the volunteer labour force by the end of the projected period.

Figure 8.1 Volunteer Labour Supply, Higher and Low Fertility and Zero Migration, Scotland 2008–2050

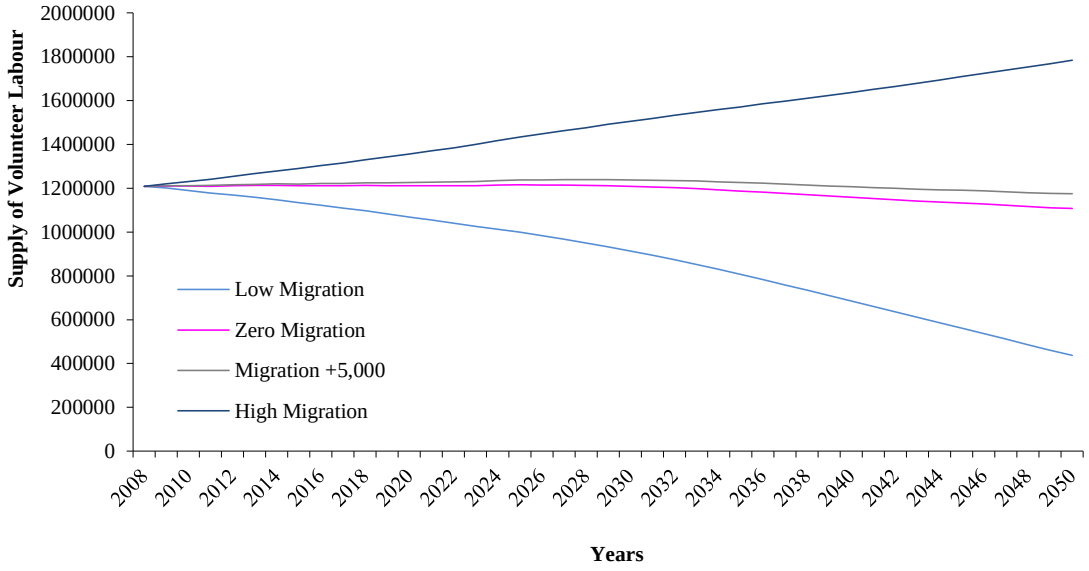


8.2.2 Impact of Net-Migration on the Supply of Volunteer Labour

The migration analysis assumes the 2008-based natural change and allows migration to vary both higher and lower. The results show that, for the current level of volunteer labour supply to continue over the projection period, there needs to be a positive net-migration of around 5,000 per year, as shown in Figure 8.2. Anything under this number would cause a reduction in the volunteer labour supply. By

assuming a high net-migrating (high migration) of 50,000 people, the potential impact on the volunteer labour supply could bring about a 32.2 per cent increase by the year 2050. The results of Figure 8.2 further reinforce the impact of negative net-migration (low migration (-50,000)). These results allow a conclusion that migration flows have a significant impact on the volunteer labour supply over the projected period.

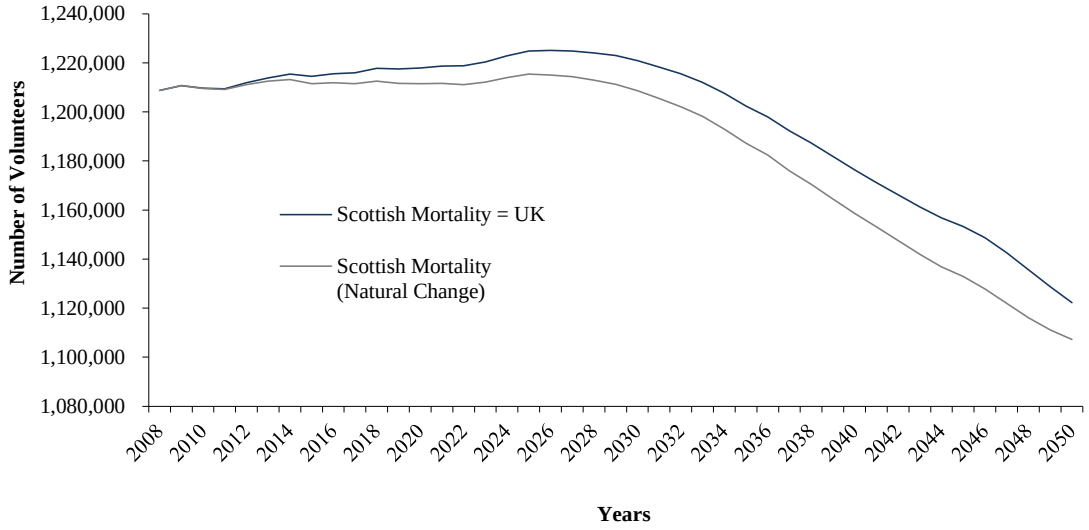
Figure 8.2 Volunteer Labour Supply, High, Low and Zero Migration, Scotland, 2008–2050



8.2.3 Impact of Mortality on the Supply of Volunteer Labour

With the mortality analysis, the assumptions are again zero net-migration and the 2008-based principle projection for fertility. The results reveal that, even if the Scottish mortality could match that of the UK mortality within a 5-year period, there would still be a significant reduction of volunteer labour over the period. This would only bring a moderately higher volunteer labour supply than Scotland's original mortality, as illustrated in Figure 8.3. This would have little impact on the supply of volunteer labour over the projected period.

Figure 8.3 Scotland's Mortality and Scotland set to UK Mortality affect on the Volunteer Labour Supply, 2008–2050



8.2.4 Assumptions on the Future Propensity to Volunteer

The supply of the voluntary labour can also be influenced by changes in the key measurement indicator of volunteer participation, as discussed in the previous chapter. The main factors are education, income, social-economic status, and health, which were all found to have a positive relationship with volunteer participation; therefore, changes in these factors have the potential to alter volunteering patterns. For this reason, an examination of these factors in more detail is warranted.

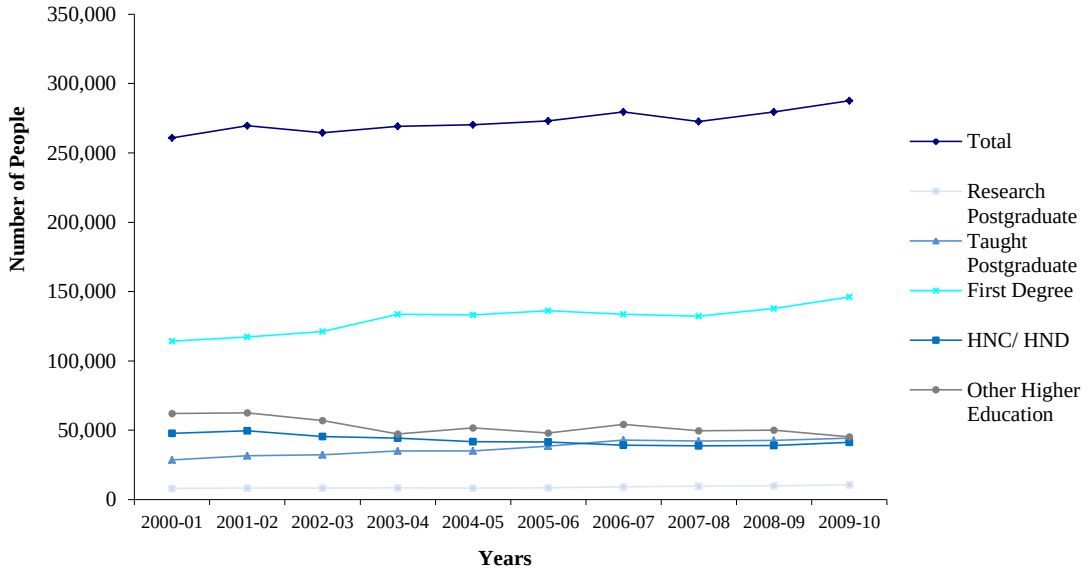
Over recent decades, Scotland has made significant progress in raising the population's education level. This level has been improving at at a quicker pace than elsewhere in the UK. The Scottish Government (2007c, p.6) suggests that greater investment in education has influenced higher levels of education attainment in Scotland.

> Scottish investment in education, for at least the last 30 years, has been higher than in the rest of the United Kingdom...Scotland is the only nation or region of the United Kingdom where the percentage of people with a Higher Education qualification outnumbers the percentage with a basic school leaving qualification. Scotland's skills profile has also been improving faster than that of the rest of the UK with the percentage of the working age population with a higher education qualification rising.

Further, according to the Scottish Government (2010d), the Scottish literacy rate (99% in 2010) is at the same level as the world's most high-income countries. There still remain some debates over the less well off people accessing further education (Garner and Raudenbush, 1991; Iannelli and Paterson, 2005). People from the most deprived areas are mostly found in lower level institutions (i.e., colleges) than in higher-level institutions (i.e., universities). This has been the case for a number of years (Scottish Government, 2011b).

Despite this situation, the level of education of the Scottish population as a whole is increasing, as shown in Figure 8.4.

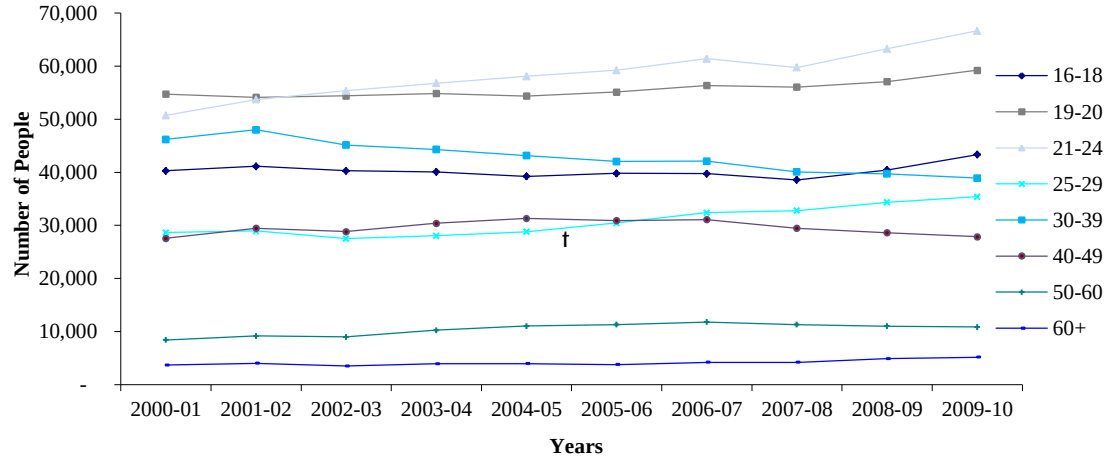
Figure 8.4 Higher Education Attainment, Scotland, 2000–2001 to 2009–2010



Source: Scottish Government (2011i)

According to the Scottish Government (2011), both the number of students and entrants reached record levels in 2009–2010. There were 287,565 students of which 215,545 (or 75%) were Scottish domiciled. This was driven mostly by the 16–29 year olds age group, as shown in Figure 8.5.

Figure 8.5 Higher Education Students by Age Group, Scotland, 2000–2001 to 2009–2010



Source: Scottish Government (2011i)

There is a large gender difference in those accessing higher education, as shown in Table 8.1. In recent years, the gender made up of Scottish higher education students has been relatively constant, males currently accounting for 45 per cent and females 55 per cent in 2009–2010.

Table 8.1 Full-time Equivalent of Students in Higher Education, by Gender, Scotland, 2002–2003 to 2009–2010

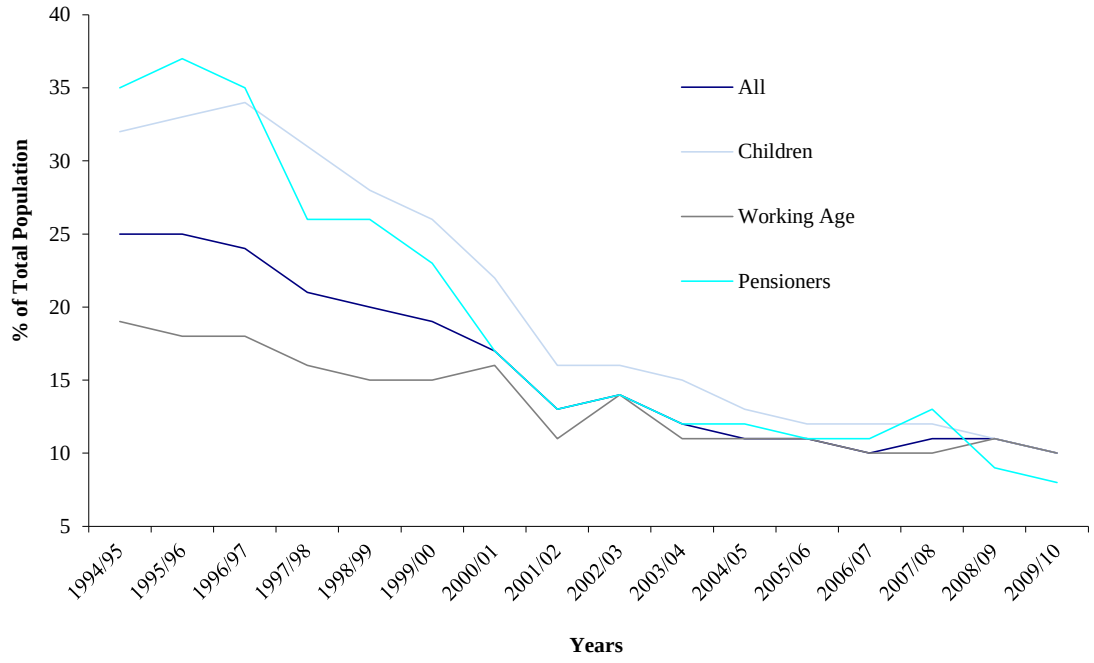
	Male (%)	*Female (%)*
2002–2003	44.4	55.6
2003–2004	44.3	55.7
2004–2005	43.7	56.3
2005–2006	43.5	56.5
2006–2007	44.0	56.0
2007–2008	44.3	55.7
2008–2009	44.5	55.5
2009–2010	45.0	55.0

Source: Scottish Government (2011i)

Correspondingly, as education levels increase, so does the income level. According to the Scottish Household Survey (2011), in 1999, the number of households who reported positive satisfaction with their financial status made up 40 per cent of all households. This figure increased to 50 per cent by 2010. This indicates the population of Scotland are feeling more confident about their income level.

The absolute poverty rate was also examined, which is compiled from households who are under 60 per cent of the UK median income (adjusted for inflation). As illustrated in Figure 8.6, there has been a significant decline in the number of households living in poverty since 1994–1995. In 2009–2010, this number was estimated to be around 500,000 (or 10%) of the Scottish population. This figure was made up of around 100,000 children, 310,000 working age and 80,000 pensioners of the Scottish population.

Figure 8.6 Absolute Poverty (below 60% of inflation adjusted UK median income) in Households, Scotland, 1994–1995 to 2009–2010

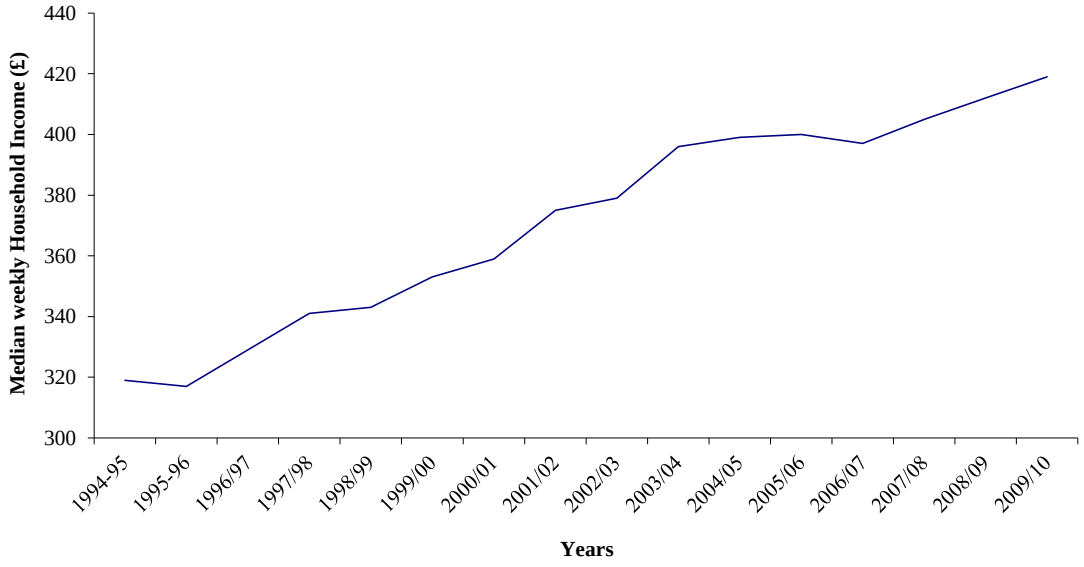


N.B. before housing costs

Source: Scottish Government (2011k)

Figure 8.7 shows the median equivalised weekly household income (adjusted for household size and composition) has been increasing. Based on 2009–2010 prices, income has increased by £100 per week (£319 in 1994–1995 and £419 in 2009–2010).

Figure 8.7 Median Equivalised Weekly Household Income (based on 2009–2010 prices), Scotland, 1994–1995 to 2009–2010



N.B. before housing costs

Source: Scottish Government (2011k)

It is reasonable to assume that households in Scotland are becoming increasingly positive about their financial status. Further, the number of people in poverty is decreasing and the income of the Scottish population is increasing. The assumption is these trends will continue (Scottish Government, 2011c).

By examining the health of the Scottish population in detail (in Chapter 2), it was found that overall, life expectancy is increasing as well as healthy life expectancy (albeit not at the same rate). Overall, health is improving in Scotland and this has been confirmed by the Scottish Government (2011d); indeed, there has been a constant decline in the 'three big killers' (cancer, heart disease, and stroke) and this improvement in the health of the Scottish population is assumed to continue according to the GROS (2011). By 2033, the life expectancy at birth is projected to increase to 80.7 years for men and 85.2 years for females. For life expectancy at aged 65 years of age, the life expectancy is projected to increase to 20.8 years for men and to 23.8 years for females.

In the Scottish Health Survey (Scottish Government, 2011e), the results showed that generally, higher levels of wellbeing were associated with people in professional occupations, living in higher income households and in less deprived areas. It was

also found previously in modelling volunteer behaviour that there is a systematic relationship between higher education, higher income, and higher social-economic status with propensity to volunteer. These factors are also linked to health and wellbeing. A country that is expected to experience continued improvements in health, financial status education level, and skills is critical in ensuring a productive population and in maintaining economic growth. These factors also increase the voluntary labour supply. As the Scottish nation becomes more educated, more affluent, and healthier, it is conceivable that the volunteer participation rate will also increase.

Assumptions can be made regarding the future age-specific supply of volunteers. The supply of younger workers is projected to reduce over the projected period, causing upward pressure on the wage rate. If the younger sections of the workforce in Scotland are commanding higher real wage rates, then this might deter them from supplying as much voluntary labour. This could also cause the participation of younger volunteers to drop to zero if the real wage rate is high enough. There has been some research carried out as to whether higher real wage rates will decrease the level of voluntary labour supplied. Menchik and Weisbrod (1987) found there was a negative relationship between the wage rate and the number of hours that a person volunteered. Wolff et al (1993) suggest that 'wage earnings opportunities' are important and the higher the opportunity is, the less time the person will volunteer.

These studies suggest that if the real wage rate increases, the supply of labour by younger people will decrease as a result of their ability to command higher wages; therefore, it is assumed the current low participation rate of younger volunteers aged 16–34 and the stable rate of the 34–44 year olds will stay constant over the projection period. When the age-specific volunteer rates were examined, it was found the population of age 45–74 years is more likely to volunteer. As a result, it can be assumed that there will be a small stable flow of younger volunteers and an increase of older volunteers over the projection period. The effect on the supply of volunteer labour (assuming 2008-based ASFR, ASMR and zero migration), is that there needs to be a 6 per cent increase in the rate of volunteer participation of the 45–74 year olds if the current supply of labour is to be maintained over the projection period.

Anything above the 6 per cent would increase the volunteer labour supply. Correspondingly, anything lower would cause a reduction.

Another scenario to be considered is what the volunteer labour supply would look like in 2050 if the current population was aged on. If the current Scottish population of cohorts is aged on and the age specific volunteer rate (ASVR) is applied, there would be a reduction in the volunteer labour supply by 2050 (assuming natural change only). This can be seen in Figure 8.8, which shows that the volunteer labour supply will drop to 1,116,974 people by 2050 (decrease of 8.6% from 2008).

Figure 8.8 Volunteer Labour Supply, Natural Change, Scotland 2008–2050

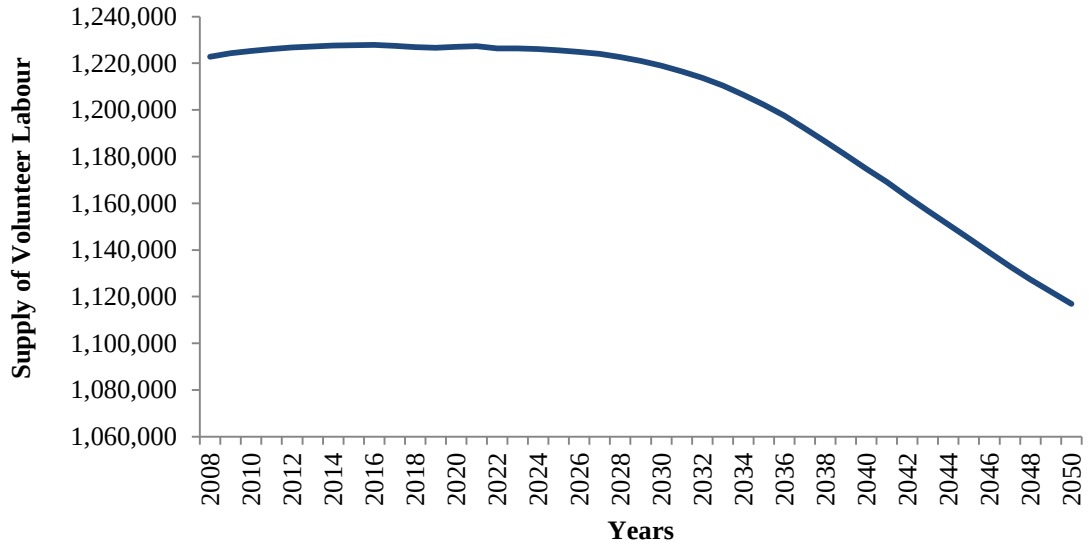
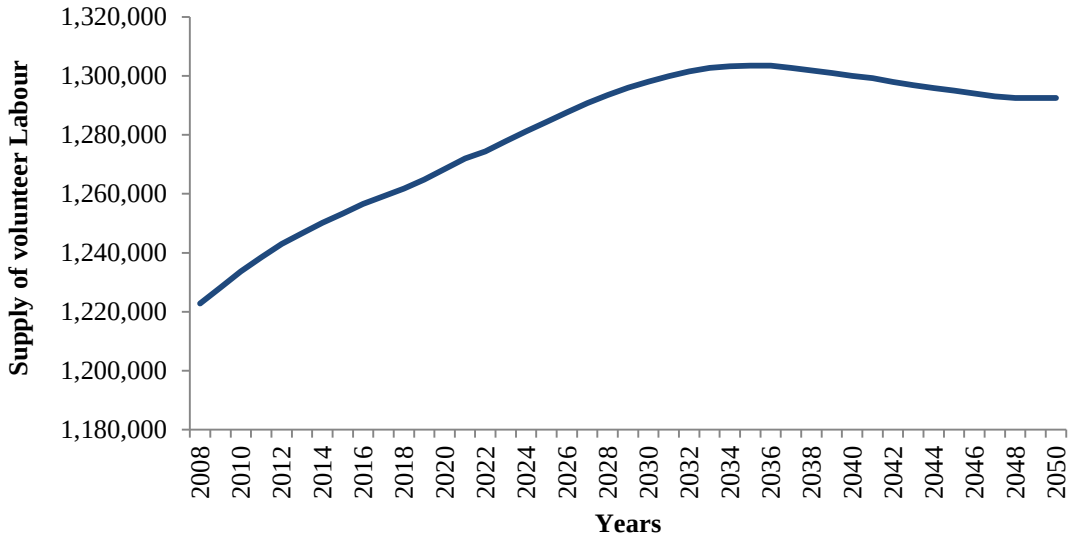


Figure 8.9 shows the effect on the supply of volunteer labour if we further assume the 2008-based principle migration figures in the population projections until 2050. By ageing on the current Scottish population and allowing for a steady flow of positive 12,000 net migrants and the ASVR, this would result in an increase in the supply of volunteer labour, reaching 1,292,524 by 2050 (increase of 5.4% from 2008).

Figure 8.9 Volunteer Labour Supply, 2008-based Principle Projections, Scotland 2008–2050



Overall, by examining these implications, it has been identified that increases in fertility and a reduction in the mortality rate would have little significant impact on the supply of volunteer labour by 2050. It was found that positive net-migration of just over 5,000 young migrants per year would be enough to maintain the current level of volunteering, with anything above this rate increasing the volunteer labour supply. In addition, given only natural change, there would need to be a 6 per cent increase in the number of 45–74 year old volunteers to maintain the current level of volunteer labour supply by 2050. Further, by ageing on the current cohorts and applying the ASVR, there would be a reduction in the supply of volunteer labour by 8.6 per cent under the natural change only assumption. By taking account of the 2008-based migration principle projections, this would facilitate an increase in the supply of volunteer labour by 5.4 per cent.

8.3 Summary

This dissertation has been investigating the effect of the changing demographic profile of Scotland and the possible effects on the supply of volunteer labour, and particularly how volunteer labour could affect the future public provisions for a society with a declining and ageing population. During this investigation, a number of areas have been examined. In Chapter 2, the past to the present demography of

Scotland was examined in order to understand how Scotland's trend in fertility, migration, and mortality has brought the country to its current position.

By examining mortality in Scotland, it was found the country had experienced significantly high levels of mortality historically. The mortality rate has been declining in recent decades but is still higher than elsewhere in the UK. The life expectancy in Scotland has been increasing along with healthy life expectancy (although not at the same rate).

The birth rate in Scotland has been declining sharply since mid-1960; however, it has, increased over the last decade, reaching a high of 58,791 births in 2010. This increase is still not adequate for the country to replace itself. Historically, in Scotland, there has been negative net-migration from the country. This trend appears to have reversed itself since 2003. The main driver of the positive net-migration has been attributed to the A8 countries joining the EU in 2004. The migrants coming to Scotland are typically young and split evenly between males and females. Overall, this chapter demonstrates Scotland is a country with below replacement level of fertility in the long term, experiencing a decreasing mortality rate in the longer term and positive net-migration over the shorter term. Short-term increase in fertility and net-migration, in addition to decreasing mortality rates, has caused the Scottish population to grow in recent years.

Having established the current demography of Scotland, the next step was to analyse possible future population trend. This analysis was the subject of Chapter 3 and used the GROS 2008-based population projections for the period 2008–2033. The results showed that, over the period, the mortality rate is expected to decline, the fertility rate is expected to remain steady at a long-term replacement rate of 1.70, and the long-term migration rate is expected to be a positive net-migration of 12,000. The projections lead to the expectation that the change in age structure would shift significantly by 2033. Changes included a decrease in the number of younger people in the population (-2% change for 0–15 year olds and -7% change for the 16–29 year olds) to a significantly larger share of older people in the population (+33% change for the 60–74 year olds and +84% change for the 75+ year olds).

The important economic group made up of the people of working age is also expected to drop over the period, from its current level of 62.6 per cent of the total population to 59.7 per cent of the total population in 2033. This economic group was investigated further as the GROS population projections were replicated. Then, varying levels of the components of population change, fertility, migration and mortality rates were examined. This resulted in a number of different scenarios for the number of people of working age over the period, given the current retirement age.

When various levels of fertility rates were examined, it was found that, given a twenty-year lag, there would be a sharp decrease in the working-age population by 2050, even with an increase of 30 per cent in the current fertility rate. In addition, for the mortality rate to decrease and match that of the UK average, it was found to have little significant effect on the number of working-age population. When varying effects of net-migration levels were examined, it was found that this component of population change was important. Scotland would require a positive net-migration of around 20,000 (young migrant) per year in order to maintain the current level of people of working age. Anything above this figure would increase the working-age population. The GROS principle projections used in Chapter 3 are derived from the 2008-based population projections for Scotland (latest available in spring 2011). At the end of October 2011 a further set of population projections were released by the GROS (2010-based projections). The difference between the updated population projections and the 2008-based projections used in this research can be found in Appendix D. For the purpose of modelling, the data does not differ from 2008-based.

In Chapter 4, the concept of volunteering was examined. It was found there were several leading theories put forward as to how the voluntary sector evolved. One theory suggests that it evolved because of demand-side reasons, as a result of market failures of both public and private sectors, creating a need for the voluntary sector. Another theory suggests it evolved because of supply-side reasons, whereby a supply of opportunists (or entrepreneurs) created voluntary organisations in order to provide for the demand. The social origins theory suggests the voluntary sector evolved through experiencing critical moments in history, which then sets a course that

society will follow, including communal problem-solving in collaboration with the other. It has also been suggested the voluntary sector evolved by creating partnerships to work alongside public and private sectors and not because of the failure of them. The transaction cost theory suggested that the voluntary profit sector is in existence because it can solve better the problems associated with the private and public sectors and that the non-rivalry or non-excludability attributes of the voluntary sector were improvements on the other sectors.

In Chapter 4, a number of the main theories of why individuals volunteer were examined. Several influential theories were found. The functional approach found that people get involved in volunteering in order to satisfy their own social and psychological goals. Another theory found was relational motives, where people volunteer in order to make friends. In the consumption model, under the public goods (or pure altruism), a volunteer was found to give up time if it increased the amount of public good or to satisfy someone else's desires. In a private goods model, the volunteer is willing to carry out the volunteering activity if the performing of the activity is in itself the motivator (receives a warm glow inside). A mixture of both public and private motives was also found, known as impure altruism, as to the reason why individuals volunteer. The investment model was also suggested, whereby the person will invest their time in the voluntary activity in order to influence future monetary and psychic income. There was a theory that suggested that individuals volunteer because of both a consumption and investment motive. To a lesser extent, the life satisfaction theory has been proposed as a reason why people volunteer, where individuals receive feelings of wellbeing and life satisfaction from the volunteering activity.

In Chapter 4, the moonlighting theory was investigated in order to represent the supply of volunteer labour. Both workers who have constrained and unconstrained hours in their main (paid) jobs were examined. The results for the constrained worker found the decision to volunteer depended on whether the benefit received on the voluntary work exceeds its marginal disutility, given that H hours has been performed in the paid job already. An unconstrained worker was found to supply voluntary labour if enough benefit could be gained. If the benefit from volunteering

exceeded the benefit in that person's main job, then that person would aim to supply more hours in the voluntary sector.

Chapter 5 examined the theory of volunteering with specific regards to the older population. Older people are an important demographic group because of their expediential rise in both population size and volunteer participation. It was found that older people are more educated, affluent, and healthier than in previous generations; consequently, this has made older volunteers more demanding, in terms of roles within the sector, and how they are managed. It has been found that older people devote more time to the volunteer activity than younger volunteers and that participation rates sharply decline by 75+ years of age. This decline in volunteering at 75+ years could be because of a variety of reasons such as health issues or the difficulty in the sector to secure adequate employer's insurance for these people.

The motivations for older people to volunteer are found to be similar to other adult volunteers. Older people are less interested in the investment motive. The older volunteers are more likely to volunteer in order to put some structure on their free time and for altruistic reasons when they see a need to help. There were several suggestions on when was the best time to approach older people in order to encourage them to volunteer. It was suggested the best time is when the older people are still in paid work. It was found they are more likely to volunteer if they have a history of volunteering during their working age. A number of barriers to older people volunteering were identified in Chapter 5, such as ageism within society, government policies (e.g. extending the retirement age), low income, health issues, lack of information and lack of choice.

The Scottish voluntary sector and volunteers were the focus of Chapter 6. It was found the sector has experienced increasing levels of income over the last decade and has currently around 45,000 varying sizes of voluntary organisations. The larger voluntary organisations were found to be few in numbers but to command a large amount of resources and fundings (62% of resources go to the top 5% of the sector). The larger organisations were also found to employ the largest number of paid employees. By contrast, there is a high number of small voluntary organisations. Smaller organisations receive little or no resources or funding and usually have a

small number of paid staff, if any. The Scottish volunteering rate over the last decade has seen the largest increase in the older age groups. The Scottish volunteers tend to be highly educated, have high income, do not live in one of the 15 per cent most deprived areas, tend to be employed, and are from a higher social-economic status.

In Chapter 6, it was also found there has been a history of the voluntary sector partnering with the Scottish Government in order to provide public service. This has raised questions on the meaning of the voluntary sector. It was found that in order to secure tenders and funding, some voluntary organisations have had to execute their operations as a for-profit business would. It has been suggested that volunteer organisations behaving in a more business-like manner do not conform to what the voluntary sector is about. It was noted the consequence of this shift in strategy could deter existing and potential volunteers from volunteering, as it would be similar to having a job. There were numerous theories on how to calculate the benefit volunteering brings to society. One of the favoured methods by the Scottish Government is to use the average national wage for measuring the value of large-scale voluntary organisations and the sector as a whole. This method, along with several others, was illustrated in Chapter 6. The result, using the average national wage rate, was an economic value of £2.1bn being placed on Scottish volunteering in 2009 (or in the labour force terms, an equivalent of 77,976 full-time jobs).

In Chapter 7, a logit regression model of volunteer behaviour was estimated with data from the 2009 Scottish Household Survey. This model represented a simplification of the reality of volunteer behaviour. This parsimonious model allowed salient features and important inference to be drawn from the results. The analysis showed that within the full model, there were sub groups that could not be explained by the one model. As a result, separate models for young and old, urban and rural, no qualifications and high qualifications, were estimated.

The findings suggested there is increased probability of both male and female participation in volunteer activities, if they have a higher education level and a higher annual income, or if the person lives in a remote rural area and is not in the 15 per cent most deprived areas. People from top social-economic groupings are more likely to volunteer and especially so if they are in good health. The highest probability of

volunteering comes from people who are retired or not working full-time. The 45–54 and 65–74 year-olds age groups were highlighted as groups that needs to be paid particular attention to as they are the most likely to volunteer. This chapter showed that social-economic and demographic characteristics have an influential role in determining volunteer participation. It also showed there are larger variations in volunteering participation found geographically between the 32 Local Authorities in Scotland.

In this chapter, the implication of the volunteer behaviour and the population projections produced in Chapter 3 were brought together. Forecasts of the future voluntary labour supply in Scotland were made. It was found that, by examining zero net-migration, the supply of volunteer labour would be reduced from its current level by 2050. Higher fertility and reductions in the Scottish mortality also appear to have no significant effect on the volunteer labour supply. The results showed that for the supply of volunteer labour to remain steady, there would need to be a positive net-migration flow of just over 5,000 per year, and anything above this figure would increase the volunteer labour supply.

It was also found in this chapter that Scotland is becoming more affluent, healthier, and more educated. These three events are also influential determinates of volunteer participation. It was assumed there would be an increase in the number of people who volunteered in the future. When examining changes in the age-specific volunteering rate, given zero net-migration, there would need to be a 6 per cent increase in the number of 45–74 year old volunteers to maintain the current level of volunteer labour supply by 2050. Also found in this chapter was that by ageing on the current cohorts and applying the ASVR, this would bring about a decrease in the supply of volunteer labour by 8.6 per cent under the natural change only assumption. Finally, by further assuming the 2008-based migration principle projections, this would bring about an increase in the supply of volunteer labour by 5.4 per cent.

This research found that social and economic welfare can be affected by population ageing and population decline in Scotland, in terms of the age structure of the working-age population and the age structure of the population as a whole. Increasing the number of young migrants to Scotland in order to increase the

working-age population is a medium-term solution. In the long run, these people themselves will age if indeed they choose to live in Scotland over their lifetime. This may not be the case; therefore, positive net-migration would then become a short-term solution. Further, large amounts of migration into Scotland will have a congestion cost placing strains on housing stocks, public services and social cohesiveness (Hickman et al, 2008). It has been suggested that greater migration will have further economic costs, for instance, placing downward pressure on wages. This research also found that increasing the fertility rate may not be a short-term solution to population ageing and population decline, rather, it can be a long-term solution.

8.4 Research Weaknesses

One of the main weaknesses of this dissertation is found in the modelling of volunteer behaviour in Chapter 7. This is the result of a lack of preferred longitudinal data on volunteering for Scotland and the countries making up the UK. The reason why this longitudinal data is preferred over cross-sectional data is because of its ability to identify more complex patterns, life events, and characteristics of the population over time. This data allows social economic events to be reflected, e.g., times of economic recession, and usually exhibits observations that do not suffer from cultural differences inter and intra-generationally. It is easier to draw out cause-and-effect relationships with longitudinal data. The Scottish Household Survey data compares the volunteer population at a point in time (a snapshot) in the volunteering environment; therefore, the resulting inferences are drawn from within this framed snapshot. Ideally, a longitudinal database would exist, but in reality, the Scottish Household Survey dataset resource was the next preferred choice found. The Scottish Household Survey resource was sufficient in allowing important variables to be analysed by a logit model.

Another weakness in this research is found in forecasting the supply of volunteer labour. The science of futurology is far from being exact. The behaviour of Scottish volunteers is an under-researched area and combining this with population forecasts has not been carried out previously. This prevents a comparison with other Scottish researches. As a result, it was necessary to model a variety of scenarios to provide an overall perspective on possible outcomes and allow for inferences to be drawn. For

the volunteer numbers to remain at their current level, without higher levels of age-specific volunteer participation, either the current birth rate would need to increase by 20 per cent or the net-migration would need to reach a level of 5,000 young migrants per year. One of the main weaknesses in forecasting this supply of volunteer labour and specific human behaviour, such as the choice to volunteer, is the inherent uncertainty that exists. This uncertainty exists due to the many combinations of fertility, mortality, and net-migration that can occur in the real world, given the dynamics of a country's current demography.

Forecasting the future supply of volunteer labour for Scotland required a number of assumptions, some of which may not reflect real life events. To examine the impact that fertility may have, it was necessary to allow for only natural change, i.e., modelling zero migration only. This can be viewed as an unrealistic assumption in the real world, resulting in an unattainable figure of a 20 per cent increase on the current fertility level, if the supply of volunteer labour is to be maintained at current levels over the projection period. The migration model examining the impact that net-migration levels may have on the supply of volunteer labour, illustrated a variety of net-migration levels in the absence of significant changes in both the level of fertility or mortality. This reflects real life events more accurately, but again, there is the potential for significant changes in both fertility and mortality components to take place, which could affect the accuracy of the migration modelling forecasting the supply of volunteer labour. There is a considerable global movement of people between countries causing both positive and negative net-migration.

A further issue in this research is that both the GROS population forecasts and the Popgroup forecasts assume that, in producing these forecasts, migrates arriving in Scotland will stay permanently, and that people who leave Scotland will stay in the host country permanently. This is not always the case and can affect the reliability of the forecasts. Dobson et al (2001, p.274) suggest that many migrants do not stay long-term, "A lot of the movement of labour in and out of the country is medium-short term. This is not something new and it is certainly not going to cease or decline significantly". As a result, how realistic the assumption that the young migrants will

stay in Scotland is open to debate and can affect the accuracy of the forecasts of the supply of volunteer labour.

Further, it is highly probable that natural change will only bring about a decrease in the supply of volunteer labour in Scotland from its current level to the 2050 level. The model's results showed that, given natural change, there would need to be an increase in the number of volunteers for the supply of volunteer labour to be maintained over the projection period. The assumption in this research, given the dynamics of current volunteer behaviour investigated in Chapter 7, was that this increase would be driven by a 6 per cent increase in the 45–74 year old age group. A number of underlying assumptions have been made in order to produce these forecasts. One such assumption is there will be a constant positive motivational effect on the current and future population to participate in volunteering; however, as it has been highlighted in Chapter 4 and 5, the motivation to volunteer depends on numerous conditions relating to demographic and social-economic characteristics, which can cause considerable ambiguities. Facilitating the desires of some groups to encourage the propensity to volunteer can be at the detriment of other groups; therefore, it may be inappropriate to assume a constant positive motivational effect on the potential future volunteers.

There has been conflicting results regarding the altruistic behaviour of current retirees compared to previous generations. Esmond (2001) found they exhibit the same level of altruism and Findlay and Findlay (2005) found they have a greater level of altruism. Further, the Harvard School of Public Health (2004) have found that older people have a lower propensity to volunteer than previous generations. If the latter is true and they are exhibiting a lower propensity to volunteer than previous generations, this could cause a decline in the participation in volunteer activity in the future. Given the number of older people in the population that will be retiring, the assumption is that there will be a null effect of any reduction in participation by the less altruistic retirees, which may not be realistic. If a successive less altruistic trend in future generation of retirees is evident, this could lead to a constant decline in numbers of older people who participate in volunteering, and there may not be a

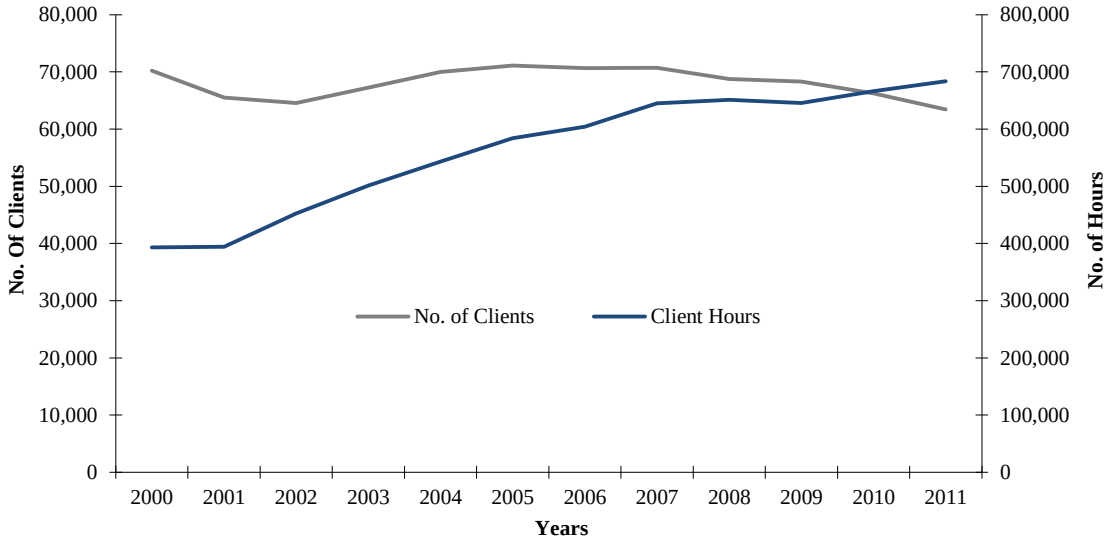
cancelling out effect by the number of future retirees. As a result, the model is overestimating the number of 65+ year olds.

Another assumption is that the voluntary sector will be mobilised efficiently to cope with the expanding volunteer labour. There is a reasonable period of grace and it is expected that structures will be in place to allow the voluntary organisations to be responsive to the needs of the expanding volunteers, and that there will be appropriate opportunities available that will allow the volunteers to realise their motivation. This is especially important for older people, who are susceptible to having limiting and uninteresting roles in the voluntary sector (Volunteer Match, 2007), at a time where older people are said to be more demanding in their role as volunteers (Greising, 1998; Esmond, 2001; Graham, 2003). As a result, in the model, the assumption that the voluntary sector will be mobilised efficiently and effectively to absorb the expected increase in the number of volunteers may perhaps not be realised.

8.5 Policy Implication

The proposed policy relates to the provision of home care services. Home care services, provided or purchased by Local Authorities, has shown a significant increasing trend in the number of service hours provided since 2000, as shown in Figure 8.10. The number of people receiving the service (or clients) has overall reduced over the same period. In 2000, there were 70,210 people receiving 393,071 hours of home care service and, by 2011, there were 63,458 people receiving 683,848 hours of home care service (Scottish Government, 2012b)

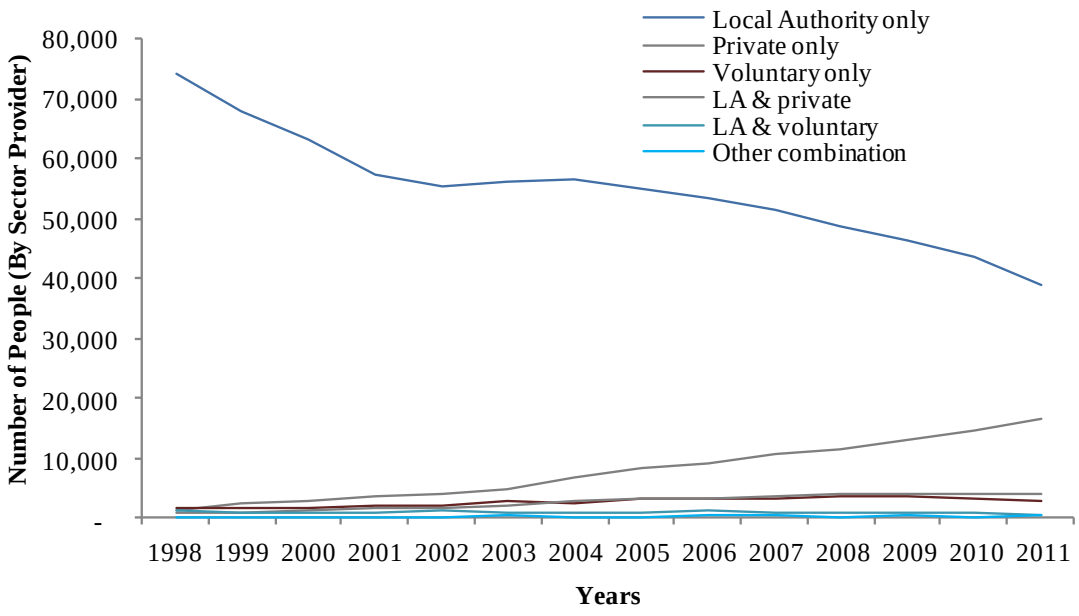
Figure 8.10 Number of People and Hours Received, Home Care Service, Scotland, 2000–2011



Source: Scottish Government (2012b)

A breakdown of all the sectors involved in providing home care services (all financed by the Local Authorities) can be seen in Figure 8.11 from 1998 to present. Over this period, the number of 65+ year olds have accounted for over 80 per cent of the service users of home care from all sectors (Scottish Government, 2012b). There has been a significant decline by Local Authority solely providing this home care service. While, there has been an increase in the private sector provision. There has also been a slight increase in the voluntary sector and the Local Authority/ private partnerships providing these services. Further, the voluntary sector/Local Authority partnerships have had little change in providing these services over the period.

Figure 8.11 Number of People Receiving Home Care by Sector of Provider, Scotland, 1998–2011



Source: Scottish Government (2012b)

Given that the largest proportion of the homecare-service users is found in the 65+ year age group, it is important to understand the demands this group are placing on the home care service. Within this group, those requiring 10+ hours per week (intensive needs) has been steadily increasing since 2003, as shown in Table 8.2.

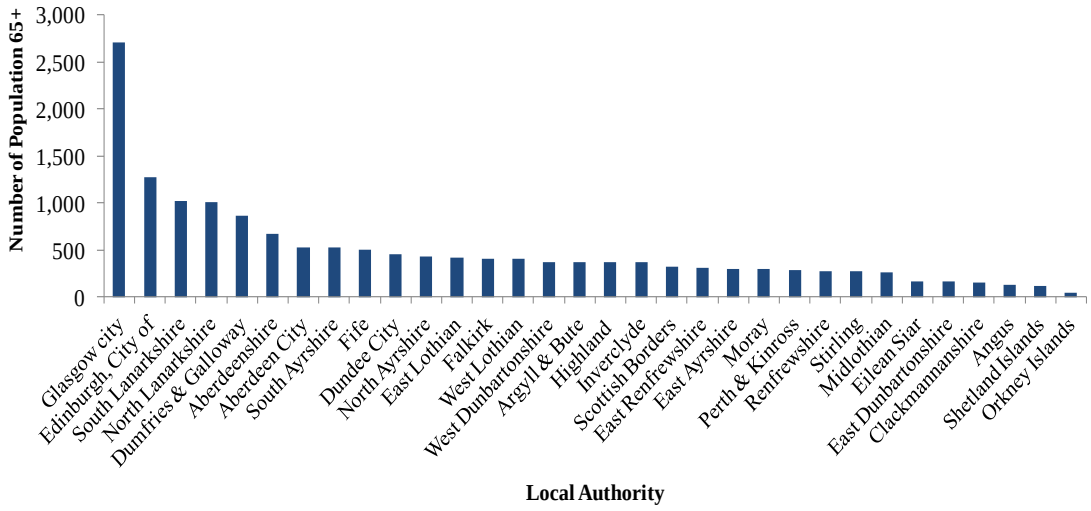
Table 8.2 People 65+ with Intensive Needs Receiving Care at Home, Scotland, 2003–2011

	Number of 65+ Year Olds Requiring 10+Hours	***Total Population Aged 65+ Years***	***Rate per 1,000 65+ Year Old Population***
2003	11,998	819,063	14.7
2004	13,255	826,554	16.1
2005	14,180	833,094	17
2006	14,082	837,968	16.8
2007	14,629	845,613	17.2
2008	15,332	856,543	17.8
2009	15,223	868,512	17.5
2010	15,737	879,492	17.8
2011	15,558	879,492	17.6

Source: Scottish Government (2012c)

Figure 8.12 shows the 65+ year olds receiving 10+ hours of care at home, broken down by Local Authority. Glasgow has the highest number of the 65+ population receiving this intense care by a large margin, followed by Edinburgh. While the more remote areas of the Orkney Islands and Shetland Islands have less of their 65+ year old population receiving an intensive care service. This shows a geographic impact in the demand for home care and its intensity.

Figure 8.12 65+Year Olds Receiving 10+ Hours of Home Care per Week, Local Authority, 2011

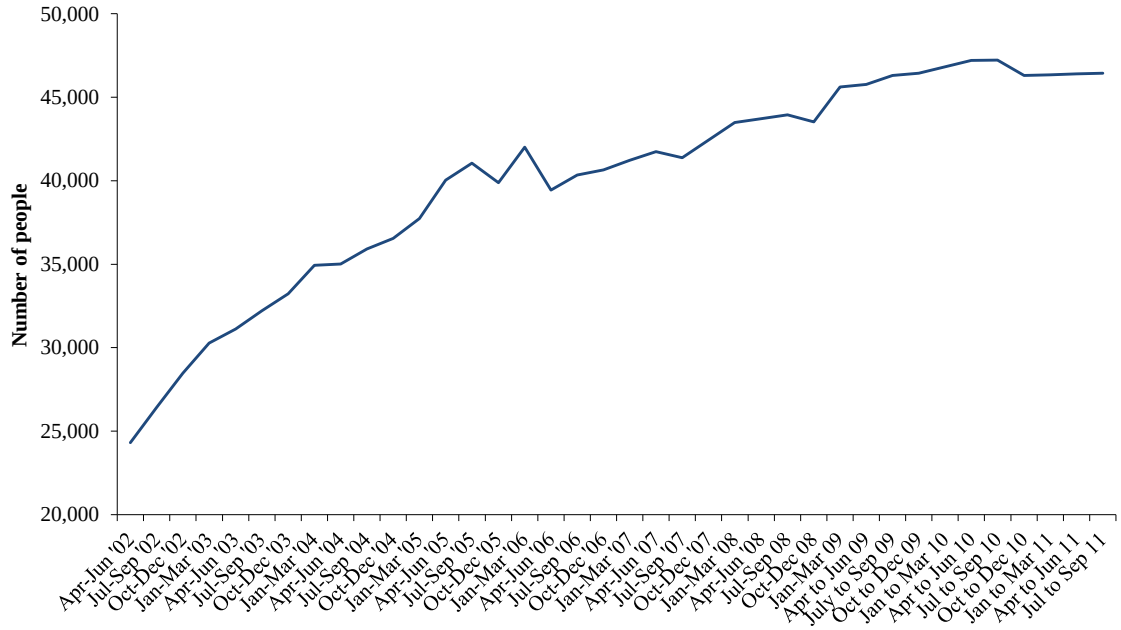


Scottish Government (2012a)

In 2011, from the total number of people receiving home care services, 63,458 were provided or purchased by Local Authorities and 46,959 were in receipt of free personal care (personal care is received without payment to all people aged 65+ years in Scotland, which Local Authorities have deemed worthy of it). The number of free personal care total included 8,153 of 65–74 year olds, 19,099 of 75–84 year olds, and 19,707 of 85+ year olds. The Scottish Government (2012a) state that personal care service includes help with food and diet, personal hygiene, problems with immobility, counselling and support, continence management, simple treatments, and personal assistance. These activities do not usually required trained professionals, unlike nursing care, which does require trained qualified people to perform the activities including injections and medical procedures. In Figure 8.13, the increasing pressure on the Scottish Government relating to free personal care at home is shown

over recent years. The number of people receiving free personal care at home has increased significantly since mid-2002, almost double the amount, from 24,313 to 46,959 by mid-2011 (Scottish Government, 2012a).

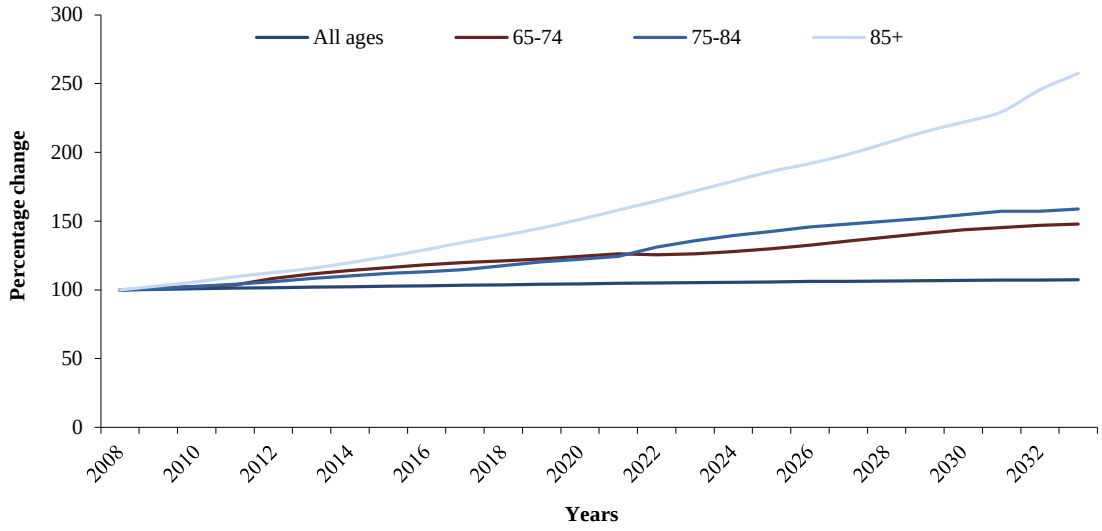
Figure 8.13 People Receiving Free Personal Care at Home in Scotland



Source: Scottish Government (2012a)

In the future, as Figure 8.14 illustrates, the projected population percentage change (discussed in detail in Chapter 3) shows that the number of people in the population of 65+ years is projected to increase rapidly until 2033. The Scottish Government (2010b, p.28) points out that "The increasing numbers of older people have implications across a range of policy areas, but a key area (particularly given the increasing number of years that people spend in poor health) is that of health and social care". If the current trend of increasing demand for care is to continue and indeed intensifies in the future, it is important to ascertain what the expected financial pressure of the public spending could be.

Figure 8.14 Projected Population Percentage Change, Scotland, 2008–2033



Source: GROS (2009a)

Jeannet (2010) produced a report on behalf of the Scottish Parliament, which looked at the three main areas affected by the ageing population in terms of public spending, which was identified as health, public pensions, and free personal and nursing care. Jeannet finds these three areas make up almost 50 per cent of the current Scottish governments budget spending. In examining Jeannet findings on health and free personal and nursing care, specifically under health care and primary care (local GPs, nurses, midwives, pharmacists and dentists, etc.), it was found that, as people get older, this places more demands on the health care service, resulting in an increase in the three main drivers of costs, i.e., the volume of ageing patients, the cost of consultation and the frequency of consultation. In their scenario of future costs, Jeannet (2010) states that the assumptions are the frequency of consultations per age group does not change over time, prices per consultation stay at current levels, the population changes according to GROS principle population projections and the length of a primary care consultation remains at a length of 15 minutes (with all spending estimates adjusted to show 2010–2011 prices), Jeannet results show that spending on primary care for people aged 65+ could increase by 23 per cent by 2018 (£150,000,000 in 2008 increasing to £184,000,000 by 2018) and 70 per cent by 2033 in real terms (£255,000,000 in 2033).

Free personal and nursing care are not means tested services and free nursing is available to all ages. The three main costs associated with free personal and nursing care are of course any demographic change, the average cost per person per year for a service and the eligibility criterion. Jeannet (2010) assumes that the number of eligible people will grow at the rate projected by the GROS 2008-based projections, that the percentage of people who enlist the help of a services, from the amount of people eligible, will increase at a steady rate (Jeannet (2012) determined this rate to be the average rate of increase during 2003–2008), and finally, that the proportion of total expenditure to the total people enrolled in the benefit will remain constant (this proportion is set at the average proportion during 2003–2008). Jeannet results show that adjusted to 2010–2011 prices, yearly spend on free personal and nursing care could go up by around 96 per cent by 2018 (£400,000,000 in 2008 and £784,000,000 by 2018) and 212 per cent by 2033 (£1,248,000,000 by 2033). The implications of the result of the Jeannet (2010) report are extremely concerning.

Further, examining the ageing population, Dobson et al (2001) found there will be a labour shortage for services including healthcare, to an ageing population and the labour supply may prove difficult to fill by traditional methods.

> This is likely to mean an increase in relatively low-paid, low-skilled jobs which may be difficult to fill...The more elderly will also require increased attention, from a caring sector again characterised by labour intensity and low pay rates. This ageing population is likely to be segmented by income, health and participation in the economy (through savings and ownership of stocks and shares), with a growing number of poorer, less healthy and technologically disadvantaged individuals...Overall, the combination of demographic ageing and the consumption demands of the grey population seems likely to increase the demand for low skilled labour.

This leads us to find other non-traditional ways. Leisure time increases when people retire from the labour market, allowing them to spend their time as they wish. This is depending on different factors, e.g., their state of health, mobility, where they live, financial situation, and family commitments. The older people could utilise their leisure time in an economic and socially enhancing way through the mechanism of volunteering, creating an increased supply of older volunteers. The Scottish Government's (2010, p.1) policy considerations relating to an ageing population are

"...how the labour market participation rate can be increased for older age groups...how age-related public services in particular can be funded as the proportion of the population of working age continues to fall". A partial solution to these policy considerations can be found by utilising the increasing supply of older volunteer labour. This supply of volunteer labour can complement the traditional labour market, while easing some of the financial burden in supplying public services, particularly age-related services.

By examining what policy implications this increase in volunteer labour supply may potentially have, several assumptions have been made. Life expectancy, healthy life expectancy and the level of positive net-migration will continue to increase. The fertility rate will decrease over the coming decades. Finally, there will be continual improvements in education level, income level, and health status, pushing up the supply of volunteer labour and, according to Adams et al (2004), the link between health, wealth, and education, which is associated with better health and longer life.

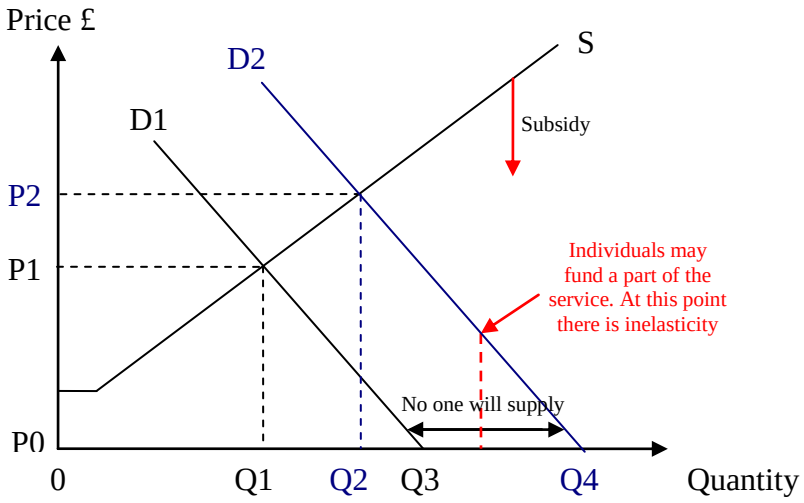
All these assumptions infer that, given all these dynamic changes in the Scottish demography, the supply of volunteer labour will increase significantly by 2050. Given the last 10-year trend, the number of 65+ volunteers is expected to increase significantly (Wandersman et al, 1987; Fischer and Schaffer, 1993 and Findlay and Findlay, 2005). This expanding volunteer labour pool, consisting mainly from older people, could have the ability to increase social and economic welfare in Scotland. The policy implications for this expanding labour supply are substantial. It has been discussed previously the ageing and long-term declining population of Scotland population will place a greater amount of pressure on the future demand for health and social care.

Further, Age Concern Scotland's (2009, p.2) vision for older people living in Scotland is where they are treated as a valuable part of the Scottish society, "Where all older people are valued, respected and participate in society as active and equal citizens". Government policy as such should facilitate older people to be valued, have choices available to them, and live an independent life as long as possible. An example could be enabling older people to live in their own homes for as long as they possibly can. This entails adequate housing infrastructure, maintenance and

repairs being dealt with (the UK Government is currently in the process of drafting new policies regarding care reform due in April 2012. One such policy is to make available government–subsidised loans for older people, to help them stay in their own home for longer and delay older people going into care homes. These loans are for home improvements, which enable older people to function better in their own homes (Age UK, 2012)). Also of importance are both short and long-term plans for primary and secondary health and social care. The Scottish voluntary sector can assist the government in enabling older people living longer in their own homes by providing these services where possible. Fischer and Schaffer (1993) recommend that government should use older volunteers in particular areas of policy and provision. The areas suggested were ones being used to provide services that are aimed at helping other older people including those who are frail and isolated.

In the free market, with the increase in demand for age-related care and the lack of future labour supply (given a decreasing working population), is an unsustainable situation. Figure 8.15 shows the demand for elderly care under free market conditions and under an ageing society. As the population declines and ages, issues appear within the free market. Demand may shift from D1 to D2, resulting in an increase in the cost of care and amount required. In such a case, as in Scotland, no one will provide care for free from Q3 to Q4 as a result of high costs. The government would have to provide a subsidy in order for the last consumer to receive a service. Given the future demography, the cost and amount of care will rise and become unaffordable to provide for free (Q4, zero price).

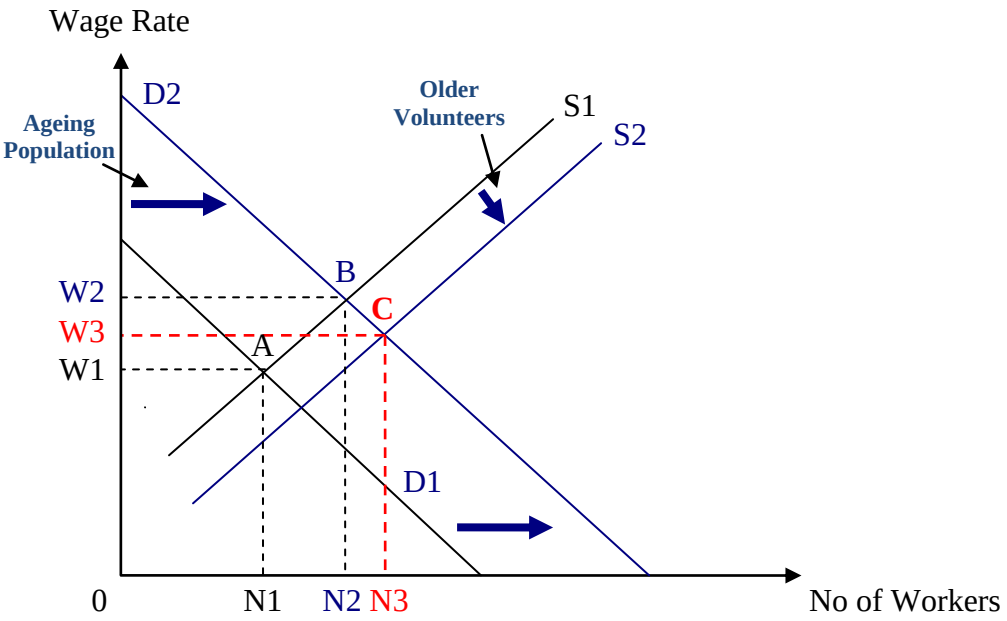
Figure 8.15 Free Market, Demand for Older Care Provisions



The next step is to examine how the supply of labour, contributed by the older volunteers, can help ease the demand for provisions by the older population, assuming the free market is an inferior choice. Scotland has an increasing number of retirees who volunteer and who are healthier, more affluent, and more educated, than previous generations of retirees, which creates value added for the voluntary sector. This can enable the voluntary sector to extend greatly its activities in care provision, for example, to the elderly population (as noted in Chapter 5, older volunteers tend to favour voluntary activities that help fellow older people). This would reduce some of the pressure on the public purse for the future costs of providing age-related public services, one of the Scottish government's main policy considerations of the future.

Figure 8.16 shows a section consisting of the increasing retirees in the Scottish voluntary sector, which is enabled to provide direct care for the older people requiring care in their homes. Older people already provide a substantial amount of care to fellow older people, "Not only do older people represent a significant proportion of those in receipt of care, but they are also important providers of unpaid care" Scottish Government (2010a, p.30). A homogenous volunteer labour market is assumed, in which 65+ year olds and all other ages can carry out the same activity. The activities performed require no particular qualifications or training (therefore, nursing activities are excluded) and come under general home care services, including the activities listed under the personal care provision. By examining the demand for older people's care in their own homes and labour supply (as a result of the ageing population), it can be seen there is an increase in the cost of wages and the quantity of labour demanded. There is a shift from point A to B and, consequently, a shift from W1 to W2, where the wage rate increases. Increasing the labour supply by utilising the 65+ volunteers to partially meet demand can result in a pressure on the wage rate to be lower, which shifts from point B to C. By utilising the 65+ year old volunteers, the rise in labour supply aids in keeping the wage rate down.

Figure 8.16 Supply and Demand for Labour, Older Peoples Care



A further step could be to target people before they retire, who are still economically active in paid employment, and socialising them into volunteering (Fischer and Schaffer, 1993) or nudge them. Nudging people to choose the right decision is a theory that was developed by Thaler and Sunstein (2008, p.6), where "A nudge...is any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives". The government could provide this group with information on the options and availability of different activities within the voluntary sector. They could highlight the benefits for the volunteer and for the recipient of the volunteer activity.

Thaler and Sunstein also introduced the idea of 'libertarian paternalism', which is made up of seemly contradictory concepts where people are free to behave in self-defeating ways or ordered to behave in a particular way. The idea of libertarian paternalism is that the government does not order people to behave in a certain way or leave them to do as they wish, but nudges people into doing the right thing. Thaler and Sunstein (2008, p.5) suggest "...both concepts reflect common sense and are far more attractive together than alone". They suggest nudging can be done through 'choice architecture' by arranging individual choice in such a way people will choose the most sensible option. They state that public choice architects are not simply attempting to track or implement people's anticipated choice, rather, they suggest the

public choice architects are self-consciously attempting to move people in directions that will make their lives better, in this case, nudging them to give up their time to help others in society.

The theory contends by using the choice architecture theory and allowing for the idea that people are not particularly homo economicus (rational), but more in keeping with homo sapiens (irrational). People's decisions are influenced by the way the choice is presented and arranged. This will determine in what direction people are nudged while maintaining their 'freedom of choice'. They also suggest that by informing people about what their peers are doing, it can influence people into following the same direction.

Older people need to know their options in volunteering roles that exist in Scotland and need to be informed as to the extent of volunteering already being done in their area. Correspondingly, given the greater number of choices that are available, there needs to be adequate government structure in place to nudge people into volunteering, and if this is properly done, the outcome will be positive. Thaler and Sunstein (2008, pp.92–95) refer to the relation between choice and welfare as 'mapping' where:

> A system of choice architecture helps people to improve their ability to map and hence to select options that will make them better off. One way of doing this is to make the information about various options more comprehensible...As choices become more numerous though, choice architecture will provide structure, and structure will affect outcome.

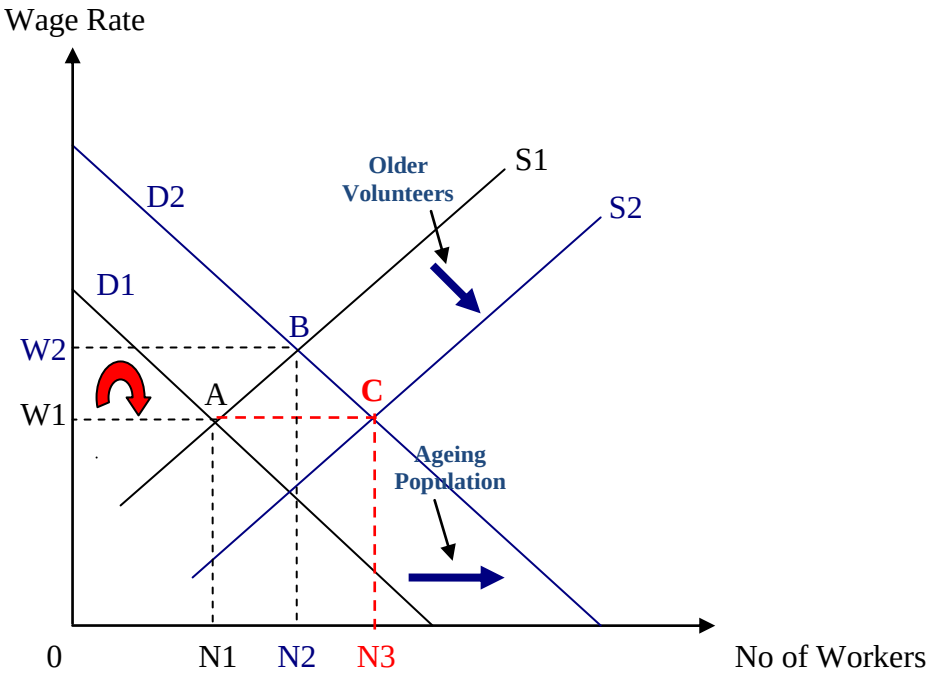
The use of the nudge theory means the Scottish Government can use its influence in such a way as to avoid the two extremes of doing nothing about increasing volunteer participation among the older population or forcing older people to volunteer in some way. There is already some work being carried out around the nudge theory in both the USA and England. The UK Government created a Behavioural Insight Team (sometimes referred to as the 'nudge unit') in 2010, which brings together behavioural economics and behavioural science in order to influence the population to behave in a more 'socially integrated' way. O'Donnell (2011) states the aim of the team is to help the UK Coalition Government develop and apply the lessons from

behavioural economics and behavioural science in creating public policies. In addition, the team helps government departments to design policies that better reflect how people really behave instead of how they are assumed to behave.

Before the government can influence older people to participate in volunteering, they have to understand the older population, both as individuals and potential volunteers. In Chapter 5, a detailed analysis of older people was carried out that highlighted the fact that older people are not a homogenous group. It was identified that certain groups within the older population have different rationales when considering volunteer participation, because of the numerous underlying motivations. There were also a number of theories noted on how best to attract and retain older volunteers within an organisation. The barriers preventing older people from volunteering were also discussed in this chapter.

In Chapter 5, a profile of older people was built, allowing a choice of architecture to be derived. An appropriate choice architecture for the current older working population would highlight both the benefits from volunteering and the choice of inactivity after retirement with the negative aspects associated (i.e., lower self esteem, lower levels of life satisfaction and lower levels of health). By influencing the older population to volunteer upon retirement, the labour demand and supply for age-related elderly care could reach equilibrium without the need to increase the initial wage rate; therefore, as illustrated in Figure 8.17, there would be added workers with the wage rate unaffected (going directly from point A to C). Point B can be avoided by preparing current pre-retirees.

Figure 8.17 Supply and Demand for Labour, Older Peoples Care



The policy could help reduce government spending on age-related provisions, which currently is around £5.1bn per year (Jeannet, 2010). The positive implication of this could be that the voluntary labour supply provided by the older volunteers can replace working-age family members who currently are providing age-related service to older relatives. This would transfer home production to the paid labour market, increasing labour participation. In addition, over time, the country may have to shift a large number of its labour towards alternative industries, rather than providing age-related services and provisions, particularly where the work is more suited to the abilities of the younger labour force, e.g., demands greater physical strength. This younger labour force, which will be in short supply given the future demography, could be freed by the older volunteers to be used more efficiently in the Scottish labour market.

The negative implications involved with this policy of using voluntary labour to provide elderly care could be where an individual of working age, who previously provided home care for a relative, chooses not to supply their time in the labour market, which would not add any economic value. Overall, this voluntary labour

supply has the potential to free up future labour market restriction by using non-remunerated labour as a complement to remunerated labour.

If the older generation of social capital is to be used as part of the solution for the ageing population, then Scotland must shore up its community networks in order to bring about the future desired results. It is important for the government to be properly equipped to encourage volunteer participation. Lowndes et al (2006) developed a model known as CLEAR as a diagnostic tool to enable policy makers to examine their population and ask find out more about their population's capacities, including their feelings of community as well as their community organisations.

At the same time, this framework asks the policy makers themselves to analyse their own decision-making and organisational structures. This will help the government to ascertain if they have the qualities that enable them to listen to volunteers and take account of their messages. Lowndes et al (2006, pp. 286–290) found that policy makers have an important role to play in increasing the level of volunteer participation. The model shows that, when certain conditions are met, there will be greater volunteer participation:

> ...where citizens: Can do – that is, have the resources and knowledge to participate; Like to – that is, have a sense of attachment that reinforces participation; Enabled to – that is, are provided with the opportunity for participation; Asked to – that is, are mobilised by official bodies or voluntary groups; Responded to – that is, see evidence that their views have been considered...To apply the tool requires three stages of activity. The first involves refining the questions and challenges to be addressed in any particular setting. The second rests on a commitment to a multi-perspective evaluation of the state of citizen participation in the municipality (involving activist and non-activist citizens, community groups, politicians and public officials). The third involves coming to a judgement about priorities in terms of the factors that need to be addressed, and how.

8.6 Future Research

Future research could be to develop the idea of providing monetary rewards for individuals who carry out volunteer activities in desired areas where there is a shortage of labour.

In the small survey of current older volunteers carried out for this dissertation, one of the questions asked was 'Do you receive financial compensation for volunteering?' and 12.8 per cent of volunteers replied they had received small amounts of financial compensation in the form of expenses, which was in order to cover travel and postage costs.

Another question asked was 'Do you feel voluntary work should be financially rewarded?'. The results showed that 93.6 per cent of current volunteers did not agree that volunteering activity should be financially rewarded, with one participant commenting that "It would not be voluntary work if you were paid for it!". Further, as noted in Chapter 5, in a focus group meeting (2011), participants were also against the idea of financial rewards for volunteering.

This research has only examined financial compensation for people who currently volunteer and it was found that it has different impacts depending on what their motivation are for volunteering (Deci and Ryan, 2000, Fischer and Schaffer, 1993, Frey and Götte, 1999 and Carpenter and Knowles Myers, 2008). The financial aspect associated with volunteering could be elaborated on. In addition, an important element to future research would be how non-volunteers from different age groups and social-economic backgrounds would respond to financial compensation, for instance older people on a low fixed income (e.g., minimum state pension). The financial compensation could be a rate below the minimum wage rate or a payment for expenses to deal with the cost of volunteering. The implications of such incentives on the supply of volunteer labour would need to be estimated. The effects on the dynamics of the voluntary sector, given a mix of unpaid volunteers and paid volunteers, would need to be investigated. A way forward could be to employ behavioural (or dynamic) microsimulation (or ex-ante) modelling, a method used to evaluate what the effects of proposed intervention could be prior to implementation in the 'real world'.

There are limited examples of other countries where financially rewarding volunteer participation has been established. In the summer of 2010, one city in East China, Suqian, in the Jiangsu Province, began an incentive to reward volunteer participation in maintaining law and order. The use of a points system collected for 'doing good

deeds' was employed. Among other incentives, the volunteers receive points if they help the police catch a criminal or help solve local disputes. The points collected can then be exchanged for money, education for their family, or health services. The financial incentive is reported by the Beijing Review (2010) to have resulted in an expediential rise in the number of volunteers helping to maintain law and order, and a reduction in the crime rate in the province. Further information regarding the impact on the voluntary sector in the province is not available.

On September 2011, an initiative known as the CareBank Project (part of the UK Coalition Government's 'Big Society' campaign and backed by the Behavioural Insight Team) was launched in the Royal Borough of Winsor and Maidenhead (RBWM) in England. This project was set up to encourage greater participation in volunteering in the borough and is organised as a social enterprise. The project operates a time-credit system where volunteers are rewarded for volunteering in their community by giving credits. One hour of volunteering is equal to one credit, which can be exchanged for services and activities within the local area, e.g., free swimming and discounts on memberships. The credits can also be donated to a central pool or used in exchange of other people's help, for themselves or other family members. These credits can also be saved (or banked) for later use in later life. According to the RBWM (2011), the project is designed to establish a reciprocal time-credit peer-to-peer provision of social care. They state the main motivation of the project is the idea that people are able to help older people with any aspect of their care. The credits are available to current and new volunteers who join the scheme.

Hall (2011, p.1) stated the project will persuade individuals to volunteer their time to support vulnerable people and the older people in their community to stay in their own homes instead of going into residential or nursing care. This scheme brings together supply and demand, "People ageing is a big issue and will become a bigger issue in the UK so we can guarantee the demand for a service like this will be there. In the UK there is a culture of giving so this scheme will be bringing together supply and demand". As the project is still in its infancy stage, no data on the impact it is having is available.

The project is based on the same system created in Japan almost two decades ago, called 'Hureai Kippu' (or caring relationship ticket scheme), as a way to help cope with Japan's rapidly ageing population. According to Nakagawa et al (2011), the Hureai Kippu system has not been as successful as it was originally expected. They found evidence that it is usually managed ineffectively, preventing it from expanding countrywide. Further, that it is regarded as one of the most unsuccessful schemes introduced in Japan in the field of elderly care. The main difference between the Japanese's system and the UK system is the Japanese credits also have a cash value. Nakagawa et al (2011, p.8) concluded that this was one of the disadvantages of the system "...once 'volunteers' are being paid, the arrangement becomes a market transaction, not social co-production". The incentives in RBWM are not in monetary terms. The results of this project would be of interest in researching financial incentives aimed at encouraging Scottish people to volunteer.

This dissertation has already demonstrated the importance of migrants in sustaining the working-age population and the volunteer labour supply over the coming decades. Another interesting area for future research is the potential for the volunteer labour supply to increase using migrants. This pool of migrant volunteer labour could be utilised in order to make up the labour shortfall in age-related services. Cangiano et al (2009) found that it is reasonable for migration labour to be used as a way to fill the labour shortages. Of particular interest would be the impact of the use of volunteering activity as an accelerated route to permanent residency for migrants wishing to gain citizenship. This 'Active Citizenship' criterion is part of the Borders, Citizenship and Immigration Act (BCIA) 2009, which is part of four ways in which migrants can become British citizens. This is listed under the heading 'joining in the British way of life by demonstrating active citizenship' for migrant participation in certain forms of volunteering, which could result in progressing faster through the citizenship process by 2 years. This part of the law was scheduled to come into force by summer of 2011; however, the UK Collation Government has currently delayed this route.

According to Magrath (2010), this active citizenship activity requires the migrant to demonstrate they are helping to improve areas, e.g., education, health, social and

community welfare, heritage, arts, culture, sport and the natural environment. These activities will also include improving the welfare of the young, elderly, disabled, and other vulnerable groups. As this part of the law is currently not in force, there is not much in the realm of information; therefore, the impact this will have on the voluntary labour supply, the voluntary organisations, and the recipients of the voluntary service, cannot be ascertained. Further research in this area could benefit Scotland prior to the implementation of this route. This research would require investigating and identifying the key determinants of a migrant's decision to stay in Scotland for varying periods, and to determine what can be done in the way of enhancing the probability of a migrant's long-term stay.

There are conflicting views on migrants' motivations to volunteer. According to Handy and Greenspan (2009), migrants' motivation to volunteer can be embedded in their wish for making social connections and accessing the labour market. In addition, they suggest the need for the migrants' to search for information and assistance in learning the country's language, its culture, and the general daily-life practicalities of the country. Handy and Greenspan (2009, pp.977–979) found that "...immigrants were able to build new social connections and gain useful skills, information, and experiences while simultaneously maintaining a cultural identity and satisfying religious beliefs...These are positive indications that volunteering may ease the effects of immigrant relocation".

There are instances where volunteering can be as described by Cnaan et al (1996, p.369) "...obligated volunteering" or by Johnson-Coffey (1997, p.2) "...involuntary volunteering". This is where the person volunteers as a result of legal reasons or policy reasons. A policy reason would be an individual reducing their qualifying time for citizenship if they are involved in a voluntary organisation. It has been suggested that this may undermine the principles that have been the 'cornerstone' of the voluntary sector. This cornerstone is people supply their labour because they want to. Instead, people could be supplying labour because they are trying to get round the immigration rules. Mc Ternan (2009, p.1) states, "Voluntary organisations in Scotland gain wonderful benefits from millions of enthusiastic and committed volunteers every year. But volunteering as a compulsory element to becoming a

British citizen threatens those principles and benefits". Using migrants in order to increase the volunteer pool to provide age-related provisions draws out a number of important issues that require further investigations.

References

Abraham, I. L., Arrington, D. T. and Wasserbauer, L. I. (1996). Using Elderly Volunteers to Care for the Elderly: Opportunities for Nursing. *Nursing Economics*, *14*,(4), pp.232-238. Retrieved June 30, 2009, from http://findarticles.com/p/articles/mi_m0FSW/is_n4_v14/ai_n18607059/

Abrams, B. and Schmitz, M. (1978). The Crowding-Out Effect of Governmental Transfers on Private Charitable Contributions: Cross-Section Evidence. *Public Choice, Vol. 33,* (1), pp.29-39. Retrieved January 19, 2008, from http://www.jstor.org/stable/pdfplus/30023017.pdf?acceptTC=true

Adams, M. (1998). Sex in the Snow. *Penguin Books*

Adams, P. Hurd, M. D. McFadden, D. 2004. Healthy, Wealthy, and Wise? Chapter 11, Edited by Wise, D. A. 2004. *Perspectives on the Economics of Ageing,* pp. 415-526

Age Concern Scotland (2009). Age Concern Scotland Impact Review 2007/2008. www.ageconcernandhelptheagedscotland.org.uk/documents/397

Age Concern Scotland. 2010. At Home with Scotland's Older People; Facts and Figures 2009-2010. *Edinburgh Age Concern Scotland*

Age Platform Europe (2009). Promoting Volunteering for Europe's Seniors. Retrieved September 11, 2009 from http://www.age-platform.org/EN/IMG/pdf_AGE_leaflet__Volunteering__internet.pdf

Age UK (2011). Later Life in the UK. Retrieved August 18, 2011, from http://www.ageuk.org.uk/Documents/EN-GB/Later%20Life%20factsheet/Later%20Life%20in%20UK%20fact%20sheet.pdf?dtrk=

Age UK (2012). Care is in Crisis. Retrieved January 10, 2012, from http://www.ageuk.org.uk/get-involved/campaign/poor-quality-care-services-big-q/

Alexis de Tocqueville (1805- 1859). Retrieved November 17, 2011, from http://www.motivateus.com/thou-48.htm

Allen, J. (2008). Older People and Wellbeing. *Institute for Public Policy Research: The European Older People's Platform, 2009: Promoting Volunteering for Europe's Seniors*. Retrieved September 10, 2009 from http://www.age-platform.org/EN/IMG/pdf_AGE_leaflet__Volunteering__internet.pdf

Allen, W. D. (1998). The Moonlighting Decision of Unmarried Men and Women: Family and Labor Market Influences. *Atlantic Economic Journal: JUNE 1998, VOL. 26*, NO. 2, pp.190-205 Retrieved June 24, 2009 from https://springerlink3.metapress.com/content/l5579x0l8333811l/resource-secured/?target=fulltext.pdf&sid=3r2zrjbdikpbcg3y4gub15o5&sh=www.springerlink.com

Andelin, J and Simpson, L. (2007). POPGROUP: Population Estimation and Forecasting System Reference Manual. Retrieved July 18, 2009, from http://www.ccsr.ac.uk/popgroup/useful/pg3RefManual%20Feb07.pdf

Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal, Vol. 100,* No. 401. June, pp. 464-477. Retrieved October 31, 2008, from http://www.jstor.org/view/00130133/di983505/98p0025p/0

Arella, L. R. (1984). The Greene County RSVP: A Case Study. *Nonprofit and Voluntary Sector Quarterly 1984; 13*; pp.53-64. Retrieved May 24, 2009, from http://nvs.sagepub.com/cgi/reprint/13/3/53

Attwood, C., Singh, G., Prime, D. and Creasey, R. (2003). Home Office Research Study 270: 2001 Home Office Citizenship Survey: people, families and communities. *Home Office Research, Development and Statistics Directorate.* Retrieved September 1, 2008, from http://www.homeoffice.gov.uk/rds/pdfs2/hors270.pdf

Audit Scotland (2010). Summary of Proposed Performance Audits. Retrieved October 29, 2010, from http://www.audit-scotland.gov.uk/work/forwardwork_summary.php#voluntary

Australian Bureau of Statistics (2008). Australian Social Trends 2008. Retrieved November 5, 2009, from http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Chapter4102008

Bacchiega, A. and Borzaga, C. (2003). The Economics of the Third Sector: A More Comprehensive Approach. *In H. K. Anheier and A. Ben Ner eds, The Study of Non Profit Enterprises: Theories and Approaches, Routledge, London and New York*. Retrieved January 11, 2009, from http://www.istr.org/networks/europe/borzaga.pdf

Baker, B. J. and Murawski, K. (1986). A Method for Measuring Paid Staff Support for Volunteer Involvement. *Nonprofit and Voluntary Sector Quarterly, 1986; 15*; pp.60-64. Retrieved September 16, 2010, from http://nvs.sagepub.com/cgi/reprint/15/3/60

Baker, M., Gruber, J. and Milligan, K. (2010). The Interaction of Youth and Elderly labour Markets in Canada. *Chapter 2, Edited by Gruber, J. Wise, D. A. 2010. Social Security Programs and Retirement Around the World.* pp.77-117

Banks, J., Blundell, R., Bozio, A. and Emmerson, C. (2008). Releasing Jobs for the Young? Early Retirement and Youth Unemployment in the UK. IFS Working Paper W10/02. Retrieved February 8, 2009, from http://www.ifs.org.uk/wps/wp1002.pdf

Barlow, J. and Hainsworth, J. (2001). Volunteerism Among Older People with Arthritis. Ageing *and Society, 21*, pp.203-217. Retrieved January 19, 2009, from http://journals.cambridge.org/download.php?file=%2FASO%2FASO21_02%2FS0144686X01008145a.pdf&code=d5167400e7ff83d9589a28152cc6112a

Barns, E. (2006). Mothers Should get Tax Breaks to Boost Birth Rate", *Scotland on Sunday, 12th February 2006*. Retrieved February 9, 2010, from http://scotlandonsunday.scotsman.com/index.cfm?id=221242006

Barnes, H. and Parry, J. (2004). Renegotiating Identity and Relationships: Men and Women's Adjustments to Retirement. *Ageing and Society, 24*: pp. 213-233. Retrieved January 8, 2009, from http://www.psi.org.uk/pdf/rdp/rdp14-renegotiating-identity-and-relationships.pdf

BBC (2009). Recession Moves Migration Patterns. Retrieved February 28, 2009, from http://news.bbc.co.uk/1/hi/uk/8243225.stm

Becker, G. S. (1964). Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. *2nd edition, NBER publishing*. Retrieved March 12, 2009, from http://www.nber.org/chapters/c3732.pdf

Bell, D.N., Hart, R.A. and Wright, R. E. (1997). Multiple Job-Holding as a 'Hedge' Against Unemployment. *CEPR Discussion Paper No. 1626.* Retrieved January 21, 2009, from http://econpapers.repec.org/paper/cprceprdp/1626.htm

Beijing Review. (2010). Should Voluntary Services Be Financially Rewarded? Retrieved October 13, 2011, from http://www.bjreview.com.cn/quotes/txt/2010-09/10/content_297285.htm

Bénabou, R. and Tirole, J. (2005). Incentives and Prosocial Behaviour. *IZA Discussion Paper No. 1695.* Retrieved March 12, 2009, from http://ftp.iza.org/dp1695.pdf

Ben-Ner, A. (2001). The Shifting Boundaries of the Mixed Economy and the Future of the Non-profit Sector. Retrieved March 23, 2009, from http://www.nationalcne.org/index.cfm?fuseaction=feature.display&feature_id=35

Berkson, J. (1944). Application of the Logistic Function to Bio-Assay. Journal of the American Statistical Association, Vol. 39, No. 227, pp. 357-365. Retrieved March 18, 2011, from http://www.jstor.org/stable/pdfplus/2280041.pdf?acceptTC=true

Bernard, M. (2000). Promoting Health in Old Age: Critical Issues in Self-health Care. *Open University Press, Buckingham.*

Black, R. (2010). Cuts will be Ugly Says Watchdog. Interview – BBC 29th September 2010. Retrieved October 1, 2010, from http://www.bbc.co.uk/news/uk-scotland-11437600

Blanchflower, D.G., Saleheen, J. and Shadforth, C. (2007). The Impact of the Recent Migration from Eastern Europe on the UK Economy. *Bank of England Working Paper.* Retrieved May 18, 2009, from http://www.bankofengland.co.uk/publications/speeches/2007/speech297.pdf

Böheim, R. and Taylor, M. P. (2004). And in the Evening She's a Singer with the Band - Second Jobs, Plight or Pleasure? *IZA Discussion Paper No. 1081.* Retrieved April 11, 2009, from http://ftp.iza.org/dp1081.pdf

Bowman, W. (2004). Confidence in Charitable Institutions and Volunteering. *Nonprofit and Voluntary Sector Quarterly, 33;* 247. Retrieved April 22, 2009, from http://nvs.sagepub.com/cgi/reprint/33/2/247

Boyle, P., Feng, Z. and Raab, G. (2009). Does Widowhood Increase Mortality Risk? Comparing Different Causes of Spousal Death to Test for Selection Effects. *University of St. Andrews.* Retrieved October 18, 2010, from http://www.lscs.ac.uk/sls/working%20papers/WP4%20Boyle.pdf

British Quality Foundation (2010). EFQM Transition Guide. Retrieved September 19, 2010, from http://www.bqf.org.uk/pdf/Transition_Guide_2010.pdf

Brown, E. P. and Zahrly, J. (1989). Nonmonetary Rewards for Skilled Volunteer Labor: A Look at Crisis Intervention Volunteers. *Nonprofit and Voluntary Sector Quarterly*, *16* (2), pp.167–172. Retrieved November 22, 2009, from http://nvs.sagepub.com/content/18/2/167.full.pdf+html

Brown, E. and Lankford H. (1992). Gifts of Money and Gifts of Time; Estimating the Effects of Tax, Prices and Available Time. *Journal of Public Economics*, *47,* pp.321-341. Retrieved December 15, 2008 http://www.sciencedirect.com/science?_ob=MiamiImageURL&_cid=271705&_user=7427071&_pii=004727279290032B&_check=y&_origin=&_coverDate=30-Apr-1992&view=c&wchp=dGLbVlB-zSkzV&md5=fcfdedbbc865b428d3148f95e4fed30d/1-s2.0-004727279290032B-main.pdf

Bruce, I. (1994). Meeting Need: Successful Charity Marketing. ICSA Publishing Limited

Bruce, I. (2009). Branding and Positioning. *Know How Non-Profit*. Retrieved December 3, 2010, from http://www.knowhownonprofit.org/campaigns/brand/positioning

Brueckner, J. K. and Largey, A. G. (2006). Social Interaction and Urban Sprawl. *CESIFO Working Paper no. 1843 Category 8: Resoursces and Environment.* Retrieved April 22, 2009, from http://www.ifo.de/pls/guestci/download/CESifo%20Working%20Papers%202006/CESifo%20Working%20Papers%20November%202006/cesifo1_wp1843.pdf

Bruno, B. and Fiorillo, D. (2009). Why Without Pay? The Intrinsic Motivation between Investment and Consumption in Unpaid Labour Supply. *Discussion Paper 111*. Retrieved December 13, 2009, from http://www.unisa.it//download/75_359_1243443882_111_DP.pdf

BSI (2009). Third Sector Skills – Real Help Now. Retrieved September 8, 2010, from http://www.researchonline.org.uk/fskills/search/download.do?ref=B13253

Business Know How and Social Change (2011). Business Know How North East. Retrieved July 29, 2011, from **http://www.aberdeenccn.info/BKH/txt_BKHHome.asp**

Bussell, H. and Forbes, D. (2002). Understanding the Volunteer Market: The What, Where, Who and Why of Volunteering. *International Journal of Nonprofit and Voluntary Sector Marketing, 7* (3), pp.244-257. Retrieved January 20, 2009, from http://tees.openrepository.com/tees/bitstream/10149/58387/5/58387.pdf

Cabinet Office (2009). A Guide to Social Return on Investment. Retrieved September 17, 2010, from http://www.neweconomics.org/sites/neweconomics.org/files/A_guide_to_Social_Return_on_Investment_1.pdf

Cabinet Office (2010). Building a Big Society. Retrieved March 24, 2011, from http://www.cabinetoffice.gov.uk/media/407789/building-big-society.pdf

Cameron, D. (2010). Big Society Speech. *Number 10 Downing Street Monday 19th July*. Retrieved March 24, 2010, from http://www.number10.gov.uk/news/speeches-and-transcripts/2010/07/big-society-speech-53572

Cameron, J. and Pierce, W.D. (1994). Reinforcement, Reward, and Intrinsic Motivation: A meta-analysis. *Review of Educational Research, 64*, pp.363-423. Retrieved September 11, 2010, from http://rer.sagepub.com/content/64/3/363.full.pdf+html

Cangiano, A., Shutes, I., Spencer, S. and Leeson, G. (2009). Migrant Care Workers In Ageing Societies. *University of Oxford*. Retrieved September 29, 2011, from http://www.icsg.ie/Library/documents/Published%20Research/UK%20MCW%20Report.pdf

Cappellari L. and Turati G. (2004). Volunteer Labour Supply: The Role of Workers Motivations. Retrieved May 24, 2009, from http://www.unicatt.it/Istituti/EconomiaFinanza/Quaderni/40Luglio2001.pdf

Carson, E. and Kerr, L. (2008). Barriers to Industry-Wide Strategies in the Community Services in Australia. *Paper submitted to 14th VSSN/NCVO Researching the Voluntary Sector Conference, Warwick University, 9-10 September 2008.* Retrieved May 5, 2009, from http://www.ncvo-vol.org.uk/uploadedFiles/NCVO/Events/Events_Archive/2008/Carson%20and%20Kerr.pdf

Carpenter, J. and Myers, C. K. (2008). Why Volunteer? Evidence on the role of altruism, reputation, and Incentives. *IZA Discussion Paper 3021.* Retrieved November 14, 2009, from ftp://repec.iza.org/RePEc/Discussionpaper/dp3021.pdf

Carstairs, V. and Morris, R. (1989). Deprivation: Explaining Differences in Mortality between Scotland and England and Wales", *British Medical Journal, 299,* pp.886-889. Retrieved March 10, 2010, from http://www.bmj.com/cgi/content/abstract/299/6704/886

Casiday, R., Kinsman, E. and Bambra, C. (2008). Volunteering and Health: What Impact Does It Really Have?. *Commissioned by Volunteering England and carried out by the University of Wales Lampeter.* Retrieved September 18, 2009, from http://www.volunteering.org.uk/NR/rdonlyres/AB46F9EC-CADB-4ABB-AEFE-8A850F09AE32/0/FullReportLampeter2ndJuly2008.pdf

Champion, A. G. (1994). International Migration and Demographic Change in the Developed World. *Urban Studies, Vol. 31,* No. 4/5, pp.653-677. Retrieved April 4, 2010, from http://usj.sagepub.com/content/31/4-5/653.full.pdf+html

Chew, C. (2009). Strategic Positioning in Voluntary and Charitable Organisations. Routledge

Chew, C. and Osborne, S. P. (2009). Identifying the Factor That Influence Positioning Strategy in UK Charitable Organisations That Provide Public Service. *Nonprofit and Voluntary Sector Quarterly, Volume 38,* No 1, pp.29-50. Retrieved August 20, 2010, from http://www.mackcenter.org/swj_db/articles/2037

Chinnock, K.L. and Salamon, L. M. (2002). Determinants of Nonprofit Impact: A Preliminary Analysis. *The Johns Hopkins University*. Retrieved April 7, 2009, from http://www.istr.org/conferences/capetown/volume/chinnock.pdf

Cho, S. and Gillespie, D. F. (2006). A Conceptual Model Exploring the Dynamics of Government – Nonprofit Service Delivery. *Nonprofit and Voluntary Sector Quarterly, vol.35*, no3, pp.493-509, Retrieved October 9, 2009, from http://nvs.sagepub.com/content/35/3/493.full.pdf+html

Choi, L.H. (2003). Factors Affecting Volunteerism Among Older Adults. *The Journal of Applied Gerontology, 22* (2), pp.179-196. Retrieved March 10, 2009, from http://jag.sagepub.com/content/22/2/179.full.pdf+html

Choi, N. G., Burr, J. A., Mutchler, J. E. and Caro, F.G. (2007). Formal and Informal Volunteer Activity and Spousal Caregiving Among Older Adults. *Research on Aging; 29*; pp.99-124, Retrieved March 14, 2009, from http://roa.sagepub.com/content/29/2/99.full.pdf+html

CIA (2011). World Facts. Retrieved April 19, 2011, from https://www.cia.gov/library/publications/the-world-factbook/rankorder/2102rank.html

Clark, J., Kane, D., Wilding, K. and Wilton, J. (2010). UK Civil Society Almanac 2010. Retrieved August 22, 2011, from http://www.ncvo-vol.org.uk/policy-research-analysis/research/voluntary-sector-workforce/key-findings

Clary, E. G. and Orenstein, L. (1991). The Amount and Effectiveness of Help: The Relationship of Motives and Abilities to Helping Behavior. *Personality and Social Psychology Bulletin, 1991; 17*; pp.58-64, Retrieved December 15, 2009, from http://psp.sagepub.com/content/17/1/58.full.pdf+html

Clary, E., G. Ridge, R. D., Stukas, A. A., Snyder, M. and Copeland, J. (1998). Understanding and Assessing the Motivations of Volunteers: A Functional Approach. *Journal of Personality and Social Psychology, 1998, Vol. 74,* No. 6, pp.1516-1530 Retrieved November 22, 2009, from http://psycnet.apa.org/psycinfo/1998-02892-008

Cnaan, R. A. and Goldberg-Glen, R. S. (1991). Measuring Motivation to Volunteer in Human Services. *Journal of Applied Behavioural Sciences, Vol. 27,* No. 3, pp.269-284. Retrieved November 18, 2009, from http://jab.sagepub.com/content/27/3/269.full.pdf+html

Cohen-Mansfield, J. (1989). Employment and Volunteering Roles for the Elderly: Characteristics, Attributes and Strategies. *Journal of Leisure Research, 21*(2), pp.214-227. Retrieved December 6, 2009, from http://psycnet.apa.org/?&fa=main.doiLanding&uid=1990-14486-001

Community Care Providers Scotland (2007). Social Care and the Voluntary Sector in Scotland: Issues for Members of the Scottish Parliament Summer 2007. Retrieved March 11, 2010, from www.ccpscotland.org

Community Care Providers Scotland (2010). About CCPS. Retrieved November 15, 2010, from http://www.ccpscotland.org/about-ccps

Community Care Providers Scotland (2011).Hot Topic: Funding Cuts. Retrieved November 1, 2011, from http://ccpscotland.org/policy/Hot-Topic-Funding-Cuts

Corporate Citizenship (2010). Volunteering: The Business Case. Retrieved September 28, 2010, from http://www.corporate-citizenship.com/wp-content/uploads/2010/09/Corporate-Citizenship-Employee-Volunteering-The-Business-Case-Webinar-Final.pdf

Craig, G. (2004). Citizenship, Exclusion and Older People. *Journal of Social Policy, 33,* (1), pp.95–114. Retrieved November 22, 2009, from http://journals.cambridge.org/download.php?file=%2FJSP%2FJSP33_01%2FS0047279403007207a.pdf&code=3f52efca64aad2c4d298f403f4d38dc7

CROW (2004). Do employers Need Older Workers?. *University of Surrey. October, Briefing paper No5*. Retrieved November 3, 2009, from http://www.niace.org.uk/crow/docs/DC21703-CROW-Paper-No5.pdf

Crown Office (2007). Pensions Act 2007: Chapter 22. Retrieved November 14, 2009, from http://nestpensions.org.uk/documents/pensions_act_2007.pdf

Czerwinska, K. (2008). International Volunteer Day: Imagine a World Without Volunteers. *Cafebabel.com, The European Magazine*. Retrieved November 16, 2009, from http://www.cafebabel.com/eng/article/27518/focus-volunteering-three-out-of-ten-europeans.html

Dacombe, R. and Bach, S. (2009). The Evidence Base for Third Sector Policy in Scotland: A Review of Selected Recent Literature. *Scottish Government Social Research.* Retrieved August 15, 2010, from http://www.scotland.gov.uk/Resource/Doc/288502/0088238.pdf

Daly, H. E. and Cobb, J. B. Jr. (1994). For the Common Good. *Beacon Press. Boston*

Darley, J. M. and Latane, B. (1968). Bystander Intervention in Emergencies: Diffusion of Responsibility. *Journal of Personality and Social Psychology. Vol 8*, No 4, pp.377-383. Retrieved August 18, 2010, from http://psychology.okstate.edu/faculty/jgrice/psyc3214/Darley_Latane_1968.pdf

Davis, C., Leveille, S., Favaro, S. and LoGerfo, M. (1998). Benefits to Volunteers in a Community-Based Health Promotion and Chronic Illness Self-Management Program for the Elderly – Trained. *Journal of Gerontological Nursing 24*(10), pp.16-23, Retrieved November 14, 2009, from http://www.ncbi.nlm.nih.gov/pubmed/9923237

Davis Smith, J. and Gay, P. (2005). Active Ageing in Active Communities: Volunteering and the Transition to Retirement. *Joseph Rowntree Foundation, Policy Press*

Day K. M. and Devlin R. A. (1996). Volunteerism and Crowding Out; Canadian Econometrics Evidence. *Canadian Journal of Economics, 29*, pp.37-53 Retrieved October 17, 2010, from http://www.jstor.org/stable/pdfplus/136150.pdf?acceptTC=true

Day K. M. and Devlin R. A. (1997). Can Volunteer Work Help Explain the Male-Female Earnings Gap?. *Applied Economics 29*(6), pp.707-721 Retrieved October 17, 2010, from http://www.tandfonline.com/doi/pdf/10.1080/000368497326642

Day K. M. and Devlin R. A. (1998). The Pay-Off to Work Without Pay: Volunteer Work as an Investment in Human Capital. *Canadian Journal of Economics, 31* (5), pp.1179-1191. Retrieved October 17, 2010, from http://www.jstor.org/stable/pdfplus/136465.pdf?acceptTC=true

Deci, E. L.and Ryan, R. M. (1985). Intrinsic Motivation and Self-Determination in Human Behaviour. *New York: Plenum Press*

Deci, E. L. and Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behaviour. *Psychological Inquiry, Vol. 11*, No. 4, pp.227–268 Retrieved August 1, 2009, from http://www.updatenet.net/images/7/75/Selbstbestimmung_Deci_Ryan_2000.pdf

de Lima, P. (2009). Impact of theEconomic Downturn on the Rural Voluntary Sector. *ESRC/SCVO Public Policy Seminar, 13th February, Edinburgh* Retrieved March 10, 2009, from http://www.esrc.ac.uk/_images/Lima_13_Feb_09_tcm8-2457.pdf

Department for Work and Pension (2010). Welfare for the 21st Century. Retrieved June 19, 2010, from http://www.dwp.gov.uk/newsroom/ministers-speeches/2010/27-05-10.shtml

Department of Social Responsibility (2003). Key Volunteering Statistics. *Home Office.* Retrieved April 4, 2010, from http://www.cofeguildford.org.uk/downloads/departments/socialresponsibility/resources/keyvolunteeringstatisticsmarch08.pdf

Devlin R. A. (2001). Regional differences in Labour Market Responses to Volunteering – Evidence from the 1997 SGVP. *Working Paper R-00-5-1E, Human Resources Development Canada, Strategic Policy, Applied Research Branch, Ottawa* Retrieved November 12, 2009, from http://www.questia.com/googleScholar.qst?docId=5002438687

Dickey, H. and Theodossiou, I. (2004). Who are the Moonlighters and why they Moonlight: Evidence for Rural Communities. *Centre for European labour Market* Retrieved January 22, 2009, from http://aura.abdn.ac.uk/bitstream/2164/22/1/ISSN%200143-04-12.pdf

Dingle, A. (2001). Measuring Volunteering: A Practical Toolkit. *A joint project of Independent Sector and United Nations Volunteers*, Retrieved August 8, 2010, from http://www.unv.org/index.php?eID=tx_nawsecuredl&u=0&file=fileadmin/kp/RandD/GLOBAL_Tool_Measuring_Volunteerism.pdf&t=1263983322&hash=a788e805e2e066c87661e8c7ec4a598f

Direct Gov (2011). National Minimum Wage Rate. Retrieved July 9, 2011, from http://www.direct.gov.uk/en/Employment/Employees/TheNationalMinimumWage/DG_10027201

Dixon, S. (2003).Implications of Population Ageing for the Labour Market. *Office for National Statistics*. Retrieved February 19, 2009, from http://www.re-integrate.eu/resources/webre--implications-of-population-ageing-for-the-labour-market.pdf

Dobson, J., Koser, K., Mclaughlan G. and Salt, J. (2001). International Migration and the United Kingdom: Recent Patterns and Trends. *RDS Occasional Paper No 75*. Retrieved August 22, 2010, from http://www.geog.ucl.ac.uk/research/mobility-identity-and-security/migration-research-unit/pdfs/UK_patterns_and_trends.pdf

Drever, E. (2010). 2008-09 Citizenship Survey: Volunteering and Charitable Giving Topic Report. *Department for Communities and Local Government.* Retrieved July 24, 2010, from http://www.communities.gov.uk/documents/statistics/pdf/1547056.pdf

Eisenberger, R. Cameron, J. (1996). Detrimental Effects of Reward; Reality or Myth? *American Psychological Association, Vol. 51*, No. 11, pp.1153-1166. Retrieved August 17, 2009, from http://www.psychology.uh.edu/faculty/Eisenberger/files/16_Detrimental_Effects_of_Reward_Reality_or_Myth.pdf

Ekerdt, D. J. (2009). Population Retirement Patterns. *International Handbook of Population. Vol 1*, part IV, pp.471-491. Retrieved June 29, 2010, from http://www.springerlink.com/content/g62u6575330wn118/fulltext.pdf

Ellis, S. J. (2008). Replacing Volunteers with Paid Staff. Retrieved August 22, 2010, from http://www.energizeinc.com/hot/2008/08sep.html

Ellis, S. W. (2003). Changing the Lives of Children and Older People: Intergenerational Mentoring in Secondary Schools. *Intergenerational Mentoring Project: Phase 3 Evaluation Report, The Beth Johnson*

Foundation. Retrieved August 1, 2009, from http://cip2.cswebsites.org/Libraries/Local/949/Docs/Changing%20the%20Lives%20of%20Children%20and%20Older%20People.pdf

Emanuele, R.(1996). Is there a (Downward Slopping) Demand Curve for Volunteer Labour? 1996, *Annals of Public and Cooperative Economics, Volume 67*, Issue 2, pp.193-208. Retrieved August 22, 2010, from http://onlinelibrary.wiley.com/doi/10.1111/apce.1996.67.issue-2/issuetoc

Emerson, R. W. (1803-1882). Retrieved August 4, 2010, from http://www.philosophersnotes.com/ideas/show/beautiful-compensations

Emigrate (2009). Britain to Continue Restrictions on Bulgaria and Romania. Retrieved January 29, 2010, from http://www.emigrate.co.uk/news/706342.htm

Erlinghagen, M. and Hank, K. (2006). The Participation of Older Europeans in Voluntary Work. *Ageing & Society, 26*, pp.567-584, Retrieved September 21, 2009, from http://journals.cambridge.org/download.php?file=%2FASO%2FASO26_04%2FS0144686X06004818a.pdf&code=c4dd5dc7bbf5ce7ecc1b3917051f9ad5

Esmond, J. (2001). BOOMNET: Capturing the Baby Boomer Volunteers - A Research Project into Baby Boomers and Volunteering. *MTD-Making The Difference and Team Consultants.* Retrieved August 19, 2009, from http://www.morevolunteers.com/resources/Boomnet%20Report%202001.PDF

ESRC (2004). Pensions, Pensioners and Pension Policy: Financial security in UK Retirement Savings? Retrieved August 13, 2009, from http://www.esrc.ac.uk/ESRCInfoCentre/about/CI/CP/Social_Sciences/issue57/pensions.aspx?ComponentId=2730&SourcePageId=2961

European Commission (2010). Employment in Europe 2010. Retrieved November 18, 2010, from http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=593

European Public Health Alliance (2006). Causes of Death in Europe. Retrieved August 17, 2010, from http://www.epha.org/a/2352

European Volunteer Centre (2004). Voluntary Activities in the United Kingdom: Facts and Figures. Retrieved July 10, 2010, from http://www.cev.be/data/File/UNITED_KINGDOM_updated.pdf

European Volunteer Centre (2005). Voluntary Action Spain Facts and Figures. Retrieved July 10, 2010, from http://www.cev.be/data/File/Facts_and_Figures_Spain_Final.pdf

European Volunteer Centre (2006). Voluntary Action Italy Facts and Figures Retrieved July 10, 2010, from http://www.cev.be/data/File/FactsFiguresItaly.pdf

European Volunteer Centre (2008). Putting Volunteering on the Economic Map of Europe. *CEV General Assembly Conference, Ljubljana, Slovenia, 18 April 2008.* Retrieved March 22, 2010, from http://www.cev.be/data/File/GA_Ljubljana_FINALReport.Complete.pdf

European Volunteer Centre (2009). Volunteering in Slovakia – Facts and Figure Report. Retrieved July 10, 2010, from http://www.cev.be/data/File/Facts%20and%20Figures%20SK.pdf

Eurostat (2009a). Death due to Cancer by Gender. Retrieved October 19, 2010, from http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tps00116&language=en,

Eurostat (2009b). Death due to Ischaemic Heart Diseases by Gender. Retrieved October 19, 2010, from http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tps00119&language=en.

Eurostat (2009c). Death due to Diseases of the Nervous System by Gender. Retrieved October 19, 2010, from http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tps00134&language=en

Eurostat (2011a). Healthy Life Years and Life Expectancy at Age 65, by Gender. Retrieved September 30, 2011, from http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=0&pcode=tsdph220&language=en

Eurostat (2011b). Real GDP per Capita, Growth Rate and Totals. Retrieved September 29, 2011, from http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdec100

Falkirk Council (2009). Migrant Workers 2008. Retrieved January 19, 2010, from http://www.falkirk.gov.uk/services/corporate_neighbourhood/policy_performance_review/research_information/PDFs/information_bulletins/migrant_workers_2008.pdf)

Findlay, J. and Findlay, P. (2005). Volunteering and Organisational Participation. *Chapter 18, in Ermisch, J. F. Wright, R. E. "Changing Scotland: Evidence from the British Household Panel Survey" The policy Press*.

Fischer, L. R. and Schaffer, K. B. (1993). Older Volunteers: A Guide to Research and Practice. *Sage Publications Inc.*

Fitch, R. T. (1987). Characteristics and Motivations of College Students Volunteering for Community Service. *Journal of College Student Personnel, 28*, pp.424–431. Retrieved November 30, 2010, from http://www.mendeley.com/research/characteristics-motivations-college-students-volunteering-community-service/

Fitzenberger, B. and Kohn, K.(2006). Skill Wage Premia, Employment, and Cohort Effects: Are Workers in Germany All of the Same Type. *Centre for European Economic Research (ZEW), Discussion Paper No. 06-044*. Retrieved August 18, 2009, from http://econstor.eu/bitstream/10419/24499/1/dp06044.pdf

Fix, M., Papademetriou, D. G., Batalova, J., Terrazas, A., Yi-Ying Lin, S. and Mittelstadt, M. (2009). Migration and the Global Recession. *Migration Policy Institute, Report Commissioned by the BBC World Service*. Retrieved Novemeber 24, 2010, from http://www.migrationpolicy.org/pubs/MPI-BBCreport-Sept09.pdf

Forster, J. (1997). Potential of a lifetime; The Carnegie-TSB Foundations Third Age Volunteering Report. *Carnegie Third Age Inquiry*. Retrieved April 2, 2009, from http://pathwaysthroughparticipation.org.uk/wp-content/uploads/2009/09/Pathways-literature-review-final-version.pdf

Freeman, R. B. (1997). Working for Nothing: The Supply of Volunteer Labour. *Journal of Labour Economics, 15* (1), pp.S140–S166. Retrieved September 24, 2010, from http://www.nber.org/~freeman/Papers%20on%20RBF%20website/Working%20for%20Nothing%20-%20JOLE%20v15-1-2-1997.pdf

Frey, B. S. and Götte, L. (1999). Does Pay Motivate Volunteers*?" Institute for Empirical Research in Economics, University of Zurich, Working Paper No 7*. Retrieved May 29, 2009, from http://e-collection.library.ethz.ch/eserv/eth:25512/eth-25512-01.pdf

Fyfe, N., Timbrell, H. and Smith, F. M. (2006). The Third Sector in a Devolved Scotland: From Policy to Evidence. *Critical Social Policy 26*; pp.630-641. Retrieved August 19, 2010, from http://csp.sagepub.com/content/26/3/630.full.pdf+html

Garner, C. L. and Raudenbush, S. W. (1991). Neighbourhood Effects on Educational Attainment: A Multilevel Analysis. *Sociology of Education. Vol. 64*, No. 4, pp.251-262. Retrieved May 1, 2009, from http://www.jstor.org/stable/2112706

Gazley, B. and Brudney, J. L. (2007). The Purpose (and Perils) of Government-Nonprofit Partnership. *Nonprofit and Voluntary Sector Quarterly 36*; pp.389-415. Retrieved April 29, 2010, from http://nvs.sagepub.com/content/36/3/389.full.pdf+html

Gilpin, N., Henty, M., Lemos, S., Portes, J. and Bullen, C. (2006). The Impact of Free Movement of Workers from Central and Eastern Europe on the UK Labour Market. *Department for Work and Pensions, Working Paper No 29*, Retrieved September 29, 2010, from http://research.dwp.gov.uk/asd/asd5/WP29.pdf

Goddeeris, J. H. (1988). Compensating Differentials and Self-Selection: An Application to Lawyers. *Journal of Political Economy 96*, pp.411-428. Retrieved September 1, 2009, from http://www.jstor.org/stable/pdfplus/1833117.pdf?acceptTC=true

Goulbourne, M. and Embuldeniya, D. (2002). Assigning Economic Value to the Volunteer Activity: Eight Tools for Efficient Program. *Canadian Centre for Philanthropy*, pp.1-22. Retrieved May 16, 2010, from http://nonprofitscan.imaginecanada.ca/files/nonprofitscan/en/iyv/goulbourne_man_english_web.pdf

Govekar, P. L. and Govekar, M. A. (2002). Using Economic Theory and Research to Better Understand Volunteer Behaviour. *Nonprofits Management and Leadership, 13*, No.1, pp.33-48. Retrieved November 20, 2009, from http://onlinelibrary.wiley.com/doi/10.1002/nml.13104/pdf

Graham, C. (2004). Formal Volunteering by the Elderly: Trends, Benefits, and Implications for Managers. *ServiceLeader.org: Documents*, Retrieved November 2, 2009, from http://www.serviceleader.org/new/documents/articles/2004/06/000233.php

Grant, I. Munoz-Arroyo, R. Oduro, S. Whyte, B. Fischbacher, C. 2006. Mortality amenable to Health Care in Scotland 1981-2004. Scottish Public Health Observatory Programme. Information Services Division. Retrieved February 8, 2010, from http://www.scotpho.org.uk/nmsruntime/saveasdialog.asp?lID=3751&sID=3206

Greising, D. (1998). Anyone Want to Lend a Hand?. *Business Week, July 20.* Retrieved August 14, 2010, from http://www.businessweek.com/1998/29/b3587036.htm

Greene, W. H. (2003), *Econometric Analysis*, Prentice-hall.

Greenfield, E. A. and Marks, N. F. (2004). Formal Volunteering as a Protective Factor for Older Adults Psychological Well-Being. *Journal of Gerontology: SOCIAL SCIENCES, Vol. 59B*, No. 5, pp.S258–S264. Retrieved September 5, 2009, from http://intl-psychsoc.gerontologyjournals.org/cgi/reprint/59/5/S258

GROS (2009a). Projected Population of Scotland (2008-based). Retrieved August 29, 2010, from http://www.gro-scotland.gov.uk/files2/stats/projected-population-of-scotland-2008-based/projected-population-of-scotland-2008-based-publication/projected-population-of-scotland-2008-based.pdf

GROS (2009b). Population and Household Projections for Scotland's Strategic Development Planning Areas (2006-based). Retrieved March 14, 2010, from http://www.gro-scotland.gov.uk/files2/stats/population-and-household-projections-for-scotlands-sdp-areas/population-and-household-projections-for-scotlands-sdp-areas.pdf

GROS (2009c). Estimates of Households and Dwellings in Scotland, 2008. Retrieved March 14, 2010, from http://www.gro-scotland.gov.uk/files2/stats/gros-estimates-of-households-and-dwellings-in-scotland-2008/gros-estimates-of-households-and-dwellings-in-scotland-2008.pdf

GROS (2010a). Scotland's Population 2009: The Registrar General's Annual Review of Demographic Trends: 155th Edition. Retrieved October 29, 2010, from. http://www.gro-scotland.gov.uk/files2/stats/scotlands-population-2008-the-registrar-generals-annual-review-of-demographic-trends-154th-edition/j1103013.htm

GROS (2010b). Centenarians in Scotland, 2002 – 2009. Retrieved December 19, 2010, from http://www.gro-scotland.gov.uk/files2/stats/centenarians/centenarians2002-2009.pdf

GROS (2010c). Sub-National Population Projections for Scotland: Methodology Guide. Retrieved September 8, 2010, from http://www.gro-scotland.gov.uk/files2/stats/population-projections/sub-national-pop-proj-methodology.pdf

GROS (2011a). Estimates of Households and Dwellings in Scotland, 2010. Retrieved August 20, 2011, from http://www.gro-scotland.gov.uk/files2/stats/household-estimates/he-10/households-dwellings-est-2010.pdf

GROS (2011b). Population by Country of Birth and Nationality. Retrieved November 22, 2011, from http://www.gro-scotland.gov.uk/statistics/theme/population/estimates/special-populations/country-nationality.html

GROS (2011c). Mid-2010 Population Estimates Scotland Population estimates by sex, age and administrative area. Retrieved November 22, 2011, from http://www.gro-scotland.gov.uk/files2/stats/population-estimates/mid-2010/mid-year-pop-est-2010.pdf

GROS (2011d). Life Expectancy at for Areas in Scotland. Retrieved September 29, 2011, from http://www.gro-scotland.gov.uk/files2/stats/life-expectancy-areas-in-scotland/2008-2010/le-areas-scotland-2008-2010.pdf

GROS (2011e). 2010 Births, Deaths and other Vital Events – Preliminary Annual Figures. Retrieved October 9, 2011, from http://www.gro-scotland.gov.uk/statistics/theme/vital-events/general/bmd-preliminary/2010.html

GROS (2011f). Projected Population of Scotland (2010-based). Retrieved October 30, 2011, from http://www.gro-scotland.gov.uk/files2/stats/population-projections/2010-based/proj-pop-scot-2010.pdf

GROS (2011g). Annual Report of the Registrar General of Births, Deaths and Marriages for Scotland 2010 - 156th Edition. Retrieved October 31, 2011, from http://www.gro-scotland.gov.uk/files2/stats/annual-review-2010/rgar2010.pdf

GROS (2011h). High Level Summary of Statistics – Population and Migration. Retrieved October 29, 2011, from http://www.gro-scotland.gov.uk/files2/stats/high-level-summary/j11198/j1119811.htm

Grotz, J. (2008). On Whose Authority? How is Authority Defined in the Compact and How is it Demonstrated?. *Centre for the Study of Voluntary and Community Activity, Roehampton University A paper to be presented at the 14th VSSN / NCVO "Researching the Voluntary Sector" Conference, 9th – 10th September 2008.* Retrieved April 18, 2010, from vol.org.uk/uploadedFiles/NCVO/Events/Events_Archive/2008/Grotz.pdf

Hackl, H., Halla, M. and Pruckner, G. J. (2005). The Fallacy of the Good Samaritan: Volunteering as a Weird Way of Making Money. Retrieved November 10, 2009, from http://www.econ.jku.at/papers/2004/wp0415.pdf

Hall, A. (2011). Big Society Initiative CareBank Aims to Reward Volunteers Supporting Elderly and Vulnerable. *Maidenhead Advertiser, 22nd February*. Retrieved August 14, 2011, from http://www.maidenhead-advertiser.co.uk/m/news/article-19983-big-society-initiative-carebank-aims-to-reward-volunteers-supporting-elderly-and-vulnerable/

Hamel, H.R. (1967). Moonlighting – An Economic Phenomenon. *Monthly Labour Review, 90*, pp.17 –22. Retrieved December 18, 2009, from http://heinonline.org/HOL/LandingPage?collection=journals&handle=hein.journals/month90&div=178&id=&page=

Handy, F. and Greenspan, I. (2009). Immigrant Volunteering : A Stepping Stone to Integration?. *Nonprofit and Voluntary Sector Quarterly 38*: pp.956-982. Retrieved August 20, 2011, from http://nvs.sagepub.com/content/38/6/956.full.pdf+html

Handy, F., Mook, L. and Quarter, J. (2008). The Interchangeability of Paid Staff and Volunteers in Nonprofit Organizations. *Nonprofit and Voluntary Sector Quarterly, 37*; pp.76-92. Retrieved March 1, 2010, from http://nvs.sagepub.com/cgi/reprint/37/1/76

Hanlon, P., Lawder, RS., Buchanan, D., Redpath, A., Walsh, D., Wood, R., Bain, M., Brewater, DH. and Chalmers, J. (2005). Why is Mortality Higher in Scotland than in England and Wales? *Journal of Public Health (Oxford, England), Jun; 27*, (2), pp.199-204. Retrieved June 28, 2010, from http://jpubhealth.oxfordjournals.org/content/27/2/199.long

Hanf, CH. and Muller, R. A. E. (1974). Multiple Job Holding and Leisure Time. *Oxford Journals*, Retrieved December 18, 2009, from http://erae.oxfordjournals.org/cgi/reprint/2/1/87.pdf

Hardill, I. and Baines, S. (2009). Active Citizenship in Later Life: Older Volunteers in a Deprived Community in England. *The Professional Geographer, Volume 61*, Issue 1, pp.36-45. Retrieved February 15, 2010, from http://pdfserve.informaworld.com/116094_729920305_907767345.pdf

Hardill, I. and Watson R. (2004). Career Priorities Within Dual Career Households. *Industrial Relations Journal 35* pp.19-37. Retrieved December 18, 2009, from http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2338.2004.00298.x/pdf

Harvard School of Public Health. (2004). Reinventing Aging: Baby Boomers and Civic Engagement. *Metlife Foundation.* Retrieved February 20, 2010, from http://www.hsph.harvard.edu/chc/reinventingaging/Report.pdf

Hatton-Yeo, A. (2006). Ageing and Social Policy: A Report for Volunteering in the Third Age. *Beth Johnson Foundation*, Retrieved May 19, 2010, from

http://www.volunteering.org.uk/NR/rdonlyres/BB00F98A-2B1D-46D9-926E-B79FD9BA6A70/0/R_AgeingandSocialPolicy.pdf

Hayton, K., Percy, V. and Crawford, K. (2007). Full Recovery in the Voluntary Sector – Impact Assessment. *Scottish Government Social Research.* Retrieved August 3, 2010, from http://www.scotland.gov.uk/Resource/Doc/165714/0045098.pdf

Hayutin, A. (2010). Population Age Shifts Will Reshape Global Work Force. *Stanford Center on Longevity*. Retrieved March 9, 2010, from http://longevity.stanford.edu/files/SCL_Pop%20Age%20Shifts_Work%20Force_April%202010_v2_FINALWEB_0.pdf

Heady, L. and Copps, J. (2008). Measuring Effectiveness – The Way Forward. *NCVO/VSSN Researching the Voluntary Sector Conference 2008*. Retrieved August 3, 2010, from http://www.ncvo-vol.org.uk/uploadedFiles/NCVO/Events/Events_Archive/2008/Heady%20and%20Copps.pdf

Heartbeat Trends (2001). Research into Older People & Volunteering: For the 2001 Premier's Forum on Ageing., *Heartbeat Trends September*. Retrieved December 4, 2009, from http://www.communitybuilders.nsw.gov.au/download/DADHC.pdf

Hebbink, G.E. (1993). Production Factor Substitution and Employment by Age Group. *Economic Modelling, 10*, pp.217-224. Retrieved November 22, 2010, from http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6VB1-46BHT3H-1S-1&_cdi=5913&_user=7427071&_pii=026499939390018B&_origin=gateway&_coverDate=07%2F31%2F1993&_sk=999899996&view=c&wchp=dGLbVlz-zSkzV&md5=f4cd84c6e8bab05a33690ee2ecf61d4c&ie=/sdarticle.pdf

Henderson, B. (2006). Review of Local Compacts in Scotland. *Scottish Government Social Research*. Retrieved March 17, 2010, from http://www.scotland.gov.uk/Resource/Doc/98844/0023954.pdf

Hemmings, M., (2008). Dealing with a New Orthodoxy? Modernisation and the Independence and Autonomy of Not-for-profit and Voluntary Organisations in the Delivery of Welfare Services. *NCVO*, Retrieved March 14, 2009, from http://www.ncvo-vol.org.uk/uploadedFiles/NCVO/Events/Events_Archive/2008/Hemmings.pdf

Hendricks, J. and Cutler, S. (2004). Volunteerism and Socio-emotional Selectivity in Later Life. *Journal of Gerontology: Social Sciences, 59B*, pp.S251-S257. Retrieved March 14, 2009, from http://psychsoc.gerontologyjournals.org/cgi/reprint/59/5/S251

Herzog, A.R. and Organ, J.N. (1992). Age and Gender Differences in the Value of Productive Activities. *Research on ageing, Vol 14*, pp.169-198. Retrieved August 26, 2009, from http://deepblue.lib.umich.edu/bitstream/2027.42/68486/2/10.1177_0164027592142002.pdf

Hickman, M., Crowley, H and Mai, N. (2008). Immigration and Social Cohesion in the UK: The Rhythms and Realities of Everyday Life. *Joseph Rowntree Foundation* Retrieved February 20, 2011, from http://www.jrf.org.uk/sites/files/jrf/2230-deprivation-cohesion-immigration.pdf

Hill, K. (2006). Older Volunteering: Literature Review. Retrieved November 20, 2010, from http://www.volunteering.org.uk/NR/rdonlyres/5BB10AEF-79A0-41E7-BBED-9DE79D51AC6E/0/R_Literaturereview.pdf

Hinde, A. 2007. Demographic Methods. *Hodder Arnold*

Hobson, C. J., Rominger, A., Malec, K., Hobson, C. L. and Evans, K. (1996). Volunteer-Friendliness of Nonprofit Agencies: Definition, Conceptual Model and Applications. *Journal of Nonprofit and Public Sector marketing, Vol. 4*, No. 4, pp.27-42. Retrieved May 8, 2010, from http://www.informaworld.com/smpp/content~db=all~content=a904834351~frm=titlelink

Hoffman, L. (2008). Increasing Volunteerism Among Older Adults: Benefits and Strategies for States. *NGA Center for Best Practice, Washington DC*. Retrieved December 22, 2009, from http://www.nga.org/Files/pdf/0805CIVICENGBRIEF.PDF

Home Office (2007b). The Economic and Fiscal Impact of Immigration: A Cross-Departmental Submission to the House of Lords Select Committee on Economic Affairs. Retrieved August 18, 2010, from http://www.official-documents.gov.uk/document/cm72/7237/7237.pdf

Home Office (2009a). Accession Monitoring Report: May 2004 – December 2008, A8. *UK Border Agency, Department for Work and Pensions, HM Revenue and Customs and Communities and Local Government*, Retrieved August 19, 2010, from http://www.ind.homeoffice.gov.uk/sitecontent/documents/aboutus/reports/accession_monitoring_report/report18/may04-dec08?view=Binary

Home Office (2009b). How the Points Based system Works.UK Border Agency, Retrieved November 9, 2009, from http://www.ukba.homeoffice.gov.uk/managingborders/managingmigration/apointsbasedsystem/howitworks

House of Lords (2003). Aspects of the Economics of an Aging Population. *Select Committee on Economic Affairs.* 4th Report. Retrieved January 20, 2009, from http://www.publications.parliament.uk/pa/ld200203/ldselect/ldeconaf/179/179.pdf

House of Lords (2008). Chapter 8: Conclusions and Recommendations. *Select Committee on Economic Affairs*, 1st Report. Retrieved August 18, 2010, from http://www.publications.parliament.uk/pa/ld200708/ldselect/ldeconaf/82/8211.htm

Hunter, K.I. and Linn, M.W. (1981). Psychosocial Differences between Elderly Volunteers and Non-volunteers. *International Journal of Aging and Human Development, 12*, pp.205-213. Retrieved September 5, 2009, from http://www.ncbi.nlm.nih.gov/pubmed/7216525

Iannelli, C. and Paterson, L. (2005). Does Education Promote Social Mobility? CES briefing No.35. June. Retrieved May 10, 2010, from http://www.ces.ed.ac.uk/PDF%20Files/Brief035.pdf

Institute for Health Metrics and Evaluation (2010). Adult Mortality Trends Reveal Massive Rise in Global Inequalities. Retrieved January 19, 2009, from http://www.healthmetricsandevaluation.org/news-events/news-release/adult-mortality-trends-reveal-massive-rise-global-inequalities

INCA (2004). INCA Project: Intercultural Competence Assessment. Retrieved August 29, 2010, from http://www.incaproject.org/en_downloads/24_INCA_THE_THEORY_eng_final.pdf

Institut national d'études démographiques (2009). Population of the European Population. Retrieved August 29, 2010, from http://www.ined.fr/en/everything_about_population/graph_month/population_ue/

Institute for Volunteering Research (2003). The Volunteer Investment and Value Audit: A Self-Help Guide. *Research Bulletin*. Retrieved May 17, 2010, from http://voluntaryaction.info/viva%2003.pdf

Institute for Volunteering Research (2007a). Who Gives Time Now? Patterns of Participation in Volunteering. Retrieved December 14, 2008, from,http://www.ivr.org.uk/NR/rdonlyres/1225B8F0-57AD-4830-89D6-AF6448D7AAF7/0/Final_Giving_Time.pdf

Institute for Volunteering Research (2007b). Valuing Time and Money. Retrieved December 14, 2008, from http://www.ivr.org.uk/NR/rdonlyres/2B57051D-D5EF-4D37-A8F0-E7EAEEAB490D/0/Valuing.pdf

Institute for Volunteering Research (2009). Potential of a lifetime -Research Summary: Study of Older Volunteers in 25 Organisations. Retrieved February 2, 2009, from http://www.ivr.org.uk/researchbulletins/bulletins/potential-of-a-lifetime-research-summary-study-of-older-volunteers-in-25-organisations.htm

International Labour Organization (2011a). Fact Sheet: The European Volunteer Measurement Project. Retrieved August 18, 2011, from http://www.ccss.jhu.edu/pdfs/ILO/ILO_Euro_Factsheet.pdf

International Labour Organization (2011b). Manual on the Measurement of Volunteer Work. Retrieved August 18, 2011, from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_162119.pdf

Irvine, C. and Hayward, D. (2009). Older People Volunteering Research Seminar - June 2009. *Volunteer Development Agency*. Retrieved December 2, 2009, from http://www.volunteering-ni.org/whatwedo/Unlocking_Potential/

Jagger, C., Cox, B. and Le Roy, S. (2006). Health Expectancy Calculation by the Sullivan Method: A Practical Guide. *Third edition, European Health Expectancy Monitoring Unit Technical Report.* Retrieved June 9, 2010, from http://www.ehemu.eu/pdf/Sullivan_guide_final_jun2007.pdf

James, E. (1990). Economic Theories of the Nonprofit Sector: A Comparative perspective. *In Anheier, H. K. and Seibel, W. 1990, 'The Third sector: comparative studies of nonprofit, organizations', Walter de Gruyter & Co*

Jeannet, A. (2010). The Spending Implications of Demographic Change. *SPICe.* Retrieved October 6, 2010, from http://www.scottish.parliament.uk/business/research/briefings-10/SB10-60.pdf

Johnson, O. (2010). Right People, Right Style, Right Price: Recruitment, Reward and Retention in the Voluntary Sector. Retrieved May 13, 2010, from http://www.liv.ac.uk/valuenetworkmarch2010/Documents%20for%20Website/Bibliog%20docs/NCVO%20docs/Morriss,%20Trevor%20&%20Johnson,%20Olga.pdf

Johnson-Coffey, G. C. (1997). Trends in Volunteerism. *The Bottom Line: Managing Library Finances*, *Vol.10*, No. 2, pp.60-64. Retrieved May 28, 2010, from http://www.emeraldinsight.com/journals.htm?articleid=860708&show=abstract&

Jordan, H. (2010). Future Jobs Future Communities. *SCVO*. Retrieved October 27, 2010, from http://microsites.scvo.org.uk/scvocms/images/Future%20Jobs%20Fund/FutureJobs_FutureCommunities.pdf

Joseph Rowntree Foundation (2004a). From Welfare to Well-Being - Planning for an Ageing Society: Summary Conclusions of the Joseph Rowntree Foundation Task Group on Housing, Money and Care for Older People. Retrieved December 16, 2008, from http://www.jrf.org.uk/sites/files/jrf/034.pdf

Joseph Rowntree Foundation, (2004b) "Quality of Life for Older People: From Welfare to Wellbeing", *York: Joseph Rowntree Foundation.* Retrieved December 16, 2008, from http://www.jrf.org.uk/sites/files/jrf/034.pdf

Józwiak, J., Kotowska, I. E. and Abramowsk, A. (2008). Activating Older Workers: Policies Verses Opinions and Expectations. *European Studies of Population, Vol 16*(6), Part IV, pp.221-243. Retrieved January 29, 2009, from http://www.springerlink.com/content/v64351n5x1q8lh7p/fulltext.pdf

Kalwij, A., Kapteyn, A and De Vos, K. (2009). Retirement of Older Workers and Employment of the Young. *De Economist (2010)* 158, pp.341–359. Retrieved December 20, 2010, from http://www.springerlink.com/content/d835152118r67j71/fulltext.pdf

Katz. D. (1960). The Functional Approach to the Study of Attitudes. *Public Option Quarterly, Volume 24*, Number 2, pp.163 – 204. Retrieved December 22, 2009, from http://poq.oxfordjournals.org/cgi/reprint/24/2/163

Kendall, J. (2003). The Voluntary Sector. *Routledge*

Kendall, J. (2005). The Third Sector and the Policy Process in the UK. *Third Sector European Policy Working Paper 5.*Retrieved June 10, 2010, from http://www.lse.ac.uk/collections/TSEP/Open%20access%20documents/TSEP5%20(Britain).pdf

Keynes, J. M. (1937). Some Economic Consequences of a Declining Population. *Eugenics Review*. Retrieved November 18, 2008, from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2985686/pdf/eugenrev00278-0023.pdf

King, R. (1993). European International Migration 1945-90 : A Statistical and Geographical Overview. *Chapter 2 in Mass Migration in Europe: The Legacy and the Future. Belhaven Press*

Kingma, B.(1989). An Accurate Measure of the Crowd-out Effect, Income Effect, and Price Effect for Charitable Contributions. *Journal of Political Economy 97*, pp.1197-1207. Retrieved August 7, 2010, from http://mywebspace.quinnipiac.edu/ejbrunner/classes/econ_365a/projects/kingma.pdf

Knox, T. M. 1999. The volunteer's folly and socio-economic man: some thoughts on altruism, rationality, and community. Journal of Socio- Economics 28, pp.475–492. Retrieved November 18, 2009, from http://www.sciencedirect.com/science?_ob=MiamiImageURL&_cid=272092&_user=7427071&_pii=S1053535799000451&_check=y&_origin=search&_zone=rslt_list_item&_coverDate=1999-12-31&wchp=dGLbVlt-zSkzV&md5=55f9dc28c54d9a9e6ab1f28536fa37ee/1-s2.0-S1053535799000451-main.pdf

Kornblum, S. F. (1981). Impact of a Volunteer Service Role upon Aged People. *Byrn Mawr College*

Kouri, M. K. (1990) Volunteerism and older adults: Choices and challenges. *Santa Barbara, CA: ABC-CLIO*

Krishnan, P. (1990). The Economics of Moonlighting: A Double Self-Selection Model. *The Review of Economics and Statistics, Vol. 72*, No. 2, pp.361-367. Retrieved September 17, 2009, from http://www.jstor.org/stable/pdfplus/2109729.pdf?acceptTC=true

Krugman, P. (2003). Lumps of Labour. Retrieved August 27, 2010, from http://www.pkarchive.org/column/100703.html

Kulik, L. (2002). Perceived Effects of Voluntarism on Marital Life in Late Adulthood. *Journal of Sociology & Social Welfare, Vol. 29*, No. 2, 35(17). Retrieved January 19, 2009, from http://www.lexisnexis.com/uk/nexis/search/newssubmitForm.do

Lancaster, H.O. (1990). Expectations of Life: A Study in Demography, Statistics and History of the World. *Springer-Verlag*

Lee, D. J. and Markides, K. S. (1990). Activity and Mortality Among Aged Persons Over an Eight-Year Period. *Journal of Gerontology, 45* (1), pp.S39-S42. Retrieved February 2, 2009, from http://geronj.oxfordjournals.org/content/45/1/S39.full.pdf

Leon, D. A., Morton, S., Cannegieter, S. and McKee, M. (2003). Understanding the Health of Scotland's Population in an International Context: A Review of Current Approaches, Knowledge and Recommendations for New Research Directions. *A report by the London School of Hygiene & Tropical Medicine, Commissioned and funded by the Public Health Institute of Scotland*, Retrieved May 18, 2010, from www.healthscotland.com/.../2181-David%20Leon%20Executive%20Summary.doc

Lewis, J. (2004). The State and Third Sector in Modern Welfare States: Independence, Instrumentality, Partnership. *In Evers, A and Laville, J. L. (2004). The Third Sector in Europe. pp.169–187, Edward Elgar Publishing Ltd*

Lewin, K. (1951). Frontiers in Group Dynamics: Concepts, Methods and Reality in Social Sciences; Social Equilibria and Social Change. Retrieved August 17, 2010, from http://books.google.co.uk/books?hl=en&lr=&id=Ll_1VTfKKeEC&oi=fnd&pg=PA72&dq=lewin+force+field+analysis+1951&ots=gc7yetOWtB&sig=Z1LCHgKeqN0TGi7DxWQ8AaCIAjE#v=onepage&q&f=false

Leyland, A.H., Dundas, R., McLoone, P. and Boddy, A.D. (2007). Inequalities in Mortality in Scotland, 1981-2001. MRC Social and Public Health Sciences Unit, Occasional Paper no. 16. Retrieved April 27, 2010, from http://www.sphsu.mrc.ac.uk/current_research/Inequalities/Inequalities_in_health.pdf

Lie, M. and Baines, S. (2007). Making Sense of Organizational Change: Voices of Older Volunteers. *Voluntas 18*, 225–240, Retrieved August 13, 2009, from http://www.springerlink.com/content/pn1376x5h4252280/fulltext.pdf

Lindsay, L. and Burke, R. J. (1985). Motivation and Goal Setting. *In Moore, L. F. (Ed), Motivating Volunteers, Vancouver, BC: Vancouver Volunteer Center*, p93-127

Long, J. S. and Freese, J. (2003). Regression Models for Categorical Dependent Variables Using Stata. *Rev. ed. College Station, TX: Stata Press*.

Lowndes, V., Pratchett, L. and Stoker, G.(2006). Diagnosing and Remedying the Failings of Official Participation Schemes: The CLEAR Framework. Social Policy and Society, 5, pp.281-291. Retrieved September 9, 2011, from http://journals.cambridge.org/action/displayFulltext?type=1&pdftype=1&fid=431679&jid=SPS&volumeId=5&issueId=02&aid=431678

Loretto, W. and White, P. (2006). Population Ageing and Older Workers: Employers' Perceptions, Attitudes and Policies. *Population Space and Place 12*, pp.341–352. Retrieved September 9, 2009, from http://onlinelibrary.wiley.com/doi/10.1002/psp.421/pdf

Lum, T. Y. and Lightfoot, E. (2005). The Effects of Volunteering on the Physical and Mental Health of Older People. *Research on Ageing, 27.*Retrieved August 18, 2009, from http://roa.sagepub.com/cgi/reprint/27/1/31

Lund, T. and Villadsen, E. (2005). Who Retires Early and Why? Determinants of Early Retirement Pension Among Danish Employees 57–62 Years. *European Journal of Ageing (2005) 2,* pp.275–280. Retrieved May 10, 2009, from http://www.springerlink.com/content/y725x132w1466148/fulltext.pdf

Luoh, MC. and Herzog, A. R. (2002). Individual Consequences of Volunteer and Paid Work in Older Age: Health and Mortality. *Journal of Health and Social Behaviour, Vol. 43*, No4, pp.490-509. Retrieved March 31, 2009, from http://homepage.ntu.edu.tw/~ntuperc/docs/publication/2002_31_Luoh.pdf

MacInnes J. (2005). Work-Life Balance and The Demand for Reduction in Working Hours: Evidence from the British Social Attitudes Survey 2002. *British Journal of Industrial Relations 43,* pp.273–295. Retrieved May 3, 2009, from http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8543.2005.00355.x/pdf

Magrath (2010). Changes to British citizenship following the Borders, Citizenship and Immigration Act 2009. Retrieved April 17, 2011, from http://www.inhouselawyer.co.uk/index.php/immigration/7880-changes-to-british-citizenship-following-the-borders-citizenship-and-immigration-act-2009

Marcus J. R., Rajaratnam, J. K., Levin-Rector, A., Chalupka, A. N., Wang, H., Dwyer, L., Costa, M., Lopez, A. and Murry, C. J. L. (2010). Worldwide Mortality in Men and Women Aged 15—59 Years from 1970 to 2010: A Systematic Analysis. The Lancet. *Volume 375*, Issue 9727, pp.1704 – 1720. Retrieved March 29, 2011, from http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)60517-X/fulltext#article_upsell

Mathiason, N. (2005). Business Phenomenon of the Century. *The Observer: Social Enterprise, 20th November 2005*, Retrieved May 30, 2011, from http://www.guardian.co.uk/business/2005/nov/20/politics.publicservices

Maxwell, S. (2009). Linkwide's Older Person's Advice Project (OPAP); Social Return on Investment (SROI) Analysis. Retrieved April 19, 2009, from http://www.sroiproject.org.uk/case-studies/linkwide.aspx

McBride, A. M. Lough, B. (2008) . Access to International Volunteering. *Centre for Social Development, Working Papers No. 08-30*, pp.1-16. Retrieved September 5, 2009, from http://csd.wustl.edu/Publications/Documents/WP08-30.pdf

McTernan, L. (2009). Media Comment: SCVO Voices Concerns Over Immigration Law. *SCVO* Retrieved April 26, 2011, from http://www.scvo.org/scvo/TFNPR/ViewTFNPR.aspx?al=t&pr=9515&from=PRHome&page

McTernan, L. (2010). SCVO Speech at the Holyrood Third Sector Conference. 7th of September

Meeting of the National Forum on Older Volunteers, January 2010, Glasgow City Chambers

Meier, S. and Stutzer A. (2004). Is Volunteering Rewarding in Itself? *IZA Discussion Paper No 1045, Zurich IEER Working Paper No 180.* Retrieved May 4, 2009, from http://www.politiquessociales.net/IMG/pdf/dp1045.pdf

Mellor, D., Hayashi, Y., Stokes, M., Firth, L., Lake, L., Staples, M., Chambers, S. and Cummins, R. (2009) Volunteering and its Relationship with Personal and Neighbourhood Well-Being. *Nonprofit and Voluntary Sector Quarterly, 38*; 144. Retrieved April 4, 2009, from http://nvs.sagepub.com/content/early/2008/05/23/0899764008317971.full.pdf+html

Menchik, P. L. and Weisbrod, B. A. (1987). Volunteer Labour Supply. *Journal of Public Economics 32*, p159-183, North-Holland. Retrieved May 8, 2009, from http://www.sciencedirect.com/science/article/pii/0047272787900107

Mesch, D. J., Tschirhart, M., Perry, J. L. and Lee, G. (1998). Altruists or Egoists? Retention in Stipended Service. *Non-profit Management and Leadership, 9* (1), pp.3–21. Retrieved September 8, 2010, from http://www.indiana.edu/~jlpweb/papers/Altruists%20or%20Egoists_Mesch_Tschirhart_Perry_Lee_NML_%20Fall%201998.pdf

Migration Watch (2004). Migration into Scotland. Retrieved March 14, 2010, from http://www.migrationwatchuk.org/briefingPaper/document/119

Migration Watch UK (2006). Economic Contribution of A8 Migrants. Retrieved March 14, 2010, from http://www.migrationwatchuk.org/Briefingpaper/document/14

Migration Watch UK (2007a). The Impact of Immigration on GDP per Head. Retrieved March 14, 2010, from http://www.migrationwatchuk.org/briefingPaper/1.16

Migration Watch UK (2007b). Submission to the House of Lords Select Committee on Economic Affairs on The Economic Impact of Immigration. Retrieved March 14, 2010, from http://www.migrationwatchuk.com/briefingPaper/document/20

Migration Watch UK (2009). Does Scotland need Immigration?. Retrieved March 14, 2010, from http://www.migrationwatchuk.org/briefingPaper/document/137

Miller, L. E., Powell, G. N. and Seltzer, J. (1990). Determinants of Turnover Among Volunteers. *Human Relations 43*; 901, Retrieved June 5, 2010, from http://hum.sagepub.com/cgi/reprint/43/9/901

Milligan, C. and Fyfe, N. R. (2005). Preserving Space for Volunteers: Exploring the Links between Voluntary Welfare Organisations, Volunteering and Citizenship. *Urban Studies, Vol. 42,* No. 3, pp.417–433. Retrieved August 16, 2010, from http://usj.sagepub.com/cgi/reprint/42/3/417

Monroe, K. R. (1996). The Heart of Altruism: Preconceptions of a Common Humanity. *Princeton University Press*

Moore, M. (2010). Rising to the Challenge and Growing the Sector's Role in Public Services. *SCVO*. Retrieved January 31, 2011, from http://www.scvo.org.uk/uncategorized/rising-to-the-challenge-and-growing-the-sector%E2%80%99s-role-in-public-services/

Morrow-Howell, N., Hinterlong, J., Rozario, P. A. and Tang, F. (2003). Effects of Volunteering on the Well-Being of Older Adults. *Journal of Gerontology: Social Sciences, Vol. 58B*, No. 3, pp.S137-S145. Retrieved March 2, 2009, from http://psychsoc.gerontologyjournals.org/cgi/reprint/58/3/S137

Morrow- Howell, N., Hong, S.L and Tang, F. (2009).Who Benefits from Volunteering? Variations in Perceived Benefits. *The Gerontologists, Vol.49*, No.1, pp.91-102. Retrieved March 2, 2009, from http://gerontologist.oxfordjournals.org/content/49/1/91.full.pdf+html

Mueller, M. W. (1975). Economic Determinants of Volunteer Work by Women. *Signs, Vol. 1*, No. 2, Winter, pp. 325-338. Retrieved August 19, 2010, from http://www.jstor.org/view/00979740/sp040002/04x0221m/0

Muthuri, J. N., Matten, D. and Moon, J. (2007). Employee Volunteering and Social Capital: Contributions to Corporate Social Responsibility. Retrieved August 19, 2010, from http://www.sozialengagiert.ch/cms/fileadmin/user_upload/Muthuri_et_al_-_EV_in_BJM.pdf

Nagel, T. (1970). The Possibility of Altruism. *New York: Oxford University Press*

Nakagawa, S., Laratta, R. and Bovaird, T. (2011). Hureai Kippu -Lessons from Japan for the 'Big Society. INLOGOV Briefing - March 2011. Retrieved August 3, 2011, from http://www.jlgc.org.uk/en/pdfs/Hureai%20Kippu%20-%20Lessons%20from%20Japan%20for%20the%20Big%20SocietyCESedit17March2011.pdf

National Forum on Older Volunteering in Scotland. (2006). 50+ VOLUNTEERING: A Vital Resource. *Published by CSV-RSVP, Edinburgh*

Neugarten, B. L. (1974). Age Groups in American Society and the Rise of the Young-Old. *The ANNALS of the American Academy of Political and Social Science, 415*; pp.187-198. Retrieved April 8, 2009, from http://ann.sagepub.com/cgi/reprint/415/1/187

Neuman, K. (2008). Quit Your Job and Get Healthier? The Effect of Retirement on Health. *Journal of Labor Research, Vol 29*, 2, pp.177-201. Retrieved September 17, 2009, from http://www.springerlink.com/content/dg6271q10j775604/fulltext.pdf

Ockenden, N. and Hutchison, R. (2008). The Impact of Public Policy on Volunteering in Community-Based Organisations. *NCVO*. Retrieved June 22, 2010, from http://www.ivr.org.uk/NR/rdonlyres/B796F0A0-632F-4D0E-B2C9-24AA3E6F7859/0/Impact_report_final.pdf

O'Donnell, G. (2011). Applying Behavioural Insights. *Cabinet office*. Retrieved October 14, 2011, from http://www.cabinetoffice.gov.uk/content/applying-behavioural-insights

Office for National Statistics (2006). 2006 Annual Survey of Hours and Earnings. Retrieved August 30, 2010, from http://www.statistics.gov.uk/pdfdir/ashe1006.pdf

Office for National Statistics (2007). 2007 Annual Survey of Hours and Earnings. Retrieved August 30, 2010, from http://www.statistics.gov.uk/pdfdir/ashe1107.pdf

Office for National Statistics (2008). 2008 Annual Survey of Hours and Earnings. Retrieved August 30, 2010, from http://www.statistics.gov.uk/pdfdir/ashe1108.pdf

Office for National Statistics. (2009a). Ageing times. *Mortality and Ageing Unit ONSCD Autumn*. Retrieved March 20, 2010, from http://www.statistics.gov.uk/downloads/theme_social/Ageing-Times-Sept09.pdf

Office for National Statistics (2009b). 2008-based National Projections. Retrieved August 30, 2010, from http://www.statistics.gov.uk/downloads/theme_population/NPP2008/NatPopProj2008.pdfOffice for National

Statistics (2009c). 2009 Annual Survey of Hours and Earnings. Retrieved August 30, 2010, from http://www.statistics.gov.uk/pdfdir/ashe1109.pdf

Office for National Statistics (2009d). Annual Survey of Hours and Earnings (ASHE) Analysis by Occupation. Retrieved August 30, 2010, from http://www.statistics.gov.uk/downloads/theme_labour/ASHE-2009/2009_occupation.pdf

Office for National Statistics (2010a). Annual Population Survey 2009 Retrieved March 31, 2009, http://www.scotland.gov.uk/Resource/Doc/933/0108124.pdf

Office for National Statistics (2010b). Measuring Outcomes for Public Service Users. Retrieved May 17, 2010, from www.ons.gov.uk/about-statistics/.../mopsu-final-report.pdf

Office for National Statistics (2010c). Life Tables: 1980-82 to 2007-09. Retrieved September 20, 2010, from http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-61850

Office for National Statistics (2010d). Life Expectancy at Birth and at Age 65 by Local Areas in the United Kingdom. Retrieved May 27, 2011, from http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-198966

Office for National Statistics (2011). Vital Statistics: Population and Health Reference Tables - Autumn 2011. Retrieved October 31, 2011, from http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-223131

O'Hara Hines, R. J. and Hines, W. G. S. (1995), Exploring Cook's Statistic Graphically. *The American Statistician*, *49*, pp389–394. Retrieved November 3, 2010, from http://www.sna.unimelb.edu.au/publications/MelNet_Techreport_08_05.pdf

Okun, M.A. (1994). The Relation Between Motives for Organisational Volunteering and the Frequency of Volunteering by Elders. *Journal ofApplied Gerontology*, *13*; pp.115-126. Retrieved September 21, 2009, from http://jag.sagepub.com/content/13/2/115.full.pdf+html

Okun, M. A. and Michel, J. (2006). Sense of Community and Being a Volunteer Among the Young-Old. *Journal of Applied Gerontology*, *25*, pp.173–188. Retrieved September 5, 2009, from http://jag.sagepub.com/cgi/reprint/25/2/173

Olson, A., Clary, G., Kringle, K., Jung, M., McGovern, C. and Thoreson, M. (2006). Episodic Volunteering with Habitat for Humanity: The Volunteer Experience. Retrieved September 18, 2009, from http://arnova.omnibooksonline.com/2006/data/papers/PA061324.pdf

Omoto, A. M. and Snyder, M. (2002). Considerations of Community: The Context and Process of Volunteerism. *American Behavioural Scientist, No45*, pp.846-867. Retrieved April 28, 2010, from http://abs.sagepub.com/content/45/5/846.full.pdf+html

Onyx, J. and Warburton, J. (2003). Volunteering and Health Among Older People: A Review. *Australasian Journal on Ageing. Vol22,* No 2 June. Retrieved March 23, 2009, from http://onlinelibrary.wiley.com/doi/10.1111/j.1741-6612.2003.tb00468.x/pdf

Paxson, C. H. and Sicherman, N. (1996). The Dynamics of Dual Job Holding and Job Mobility. *Journal of Labor Economics, Vol. 14*, No. 3, pp.357-393. Retrieved November 1, 2009, from http://www.jstor.org/stable/pdfplus/2535359.pdf?acceptTC=true

Payne, J. Berry, K. (2003). The Voluntary Sector in Scotland. *SPICe Briefing,Vol 3-57, Scottish Parliament Information Centre.* Retrieved August 13, 2010, from http:// www.scottish.parliament.uk/business/research/briefings-03/sb03-57.pdf

Pearce, J. L. (1993). The Organisational Behaviour of Unpaid Workers. *Routledge*

Penman, J. (2009). Scotland's Retirement Age May Rise Above 70. *The Sunday Times, March 1*. Retrieved April 18, 2009, from http://business.timesonline.co.uk/tol/business/industry_sectors/public_sector/article5822180.ece

Perry, J. L. and Imperial, M.T. (2001). A Decade of Service-Related Research: A Map of the Field. *Nonprofit and Voluntary Sector Quarterly, 30:* pp.462-479. Retrieved November 10, 2009, from http://nvs.sagepub.com/cgi/reprint/30/3/462

Pho, Y. H. (2008). The Value of Volunteer Labor And The Factors Influencing Participation: Evidence For The United States from 2002 Through 2005. *Review of Income and Wealth* Series 54, No 2, pp 220-236, Retrieved April 17, 2010, from http://www.roiw.org/2008/2008-10.pdf

Piliavin, J. A. and Siegl, E. (2007). Health Benefits of Volunteering in the Wisconsin Longitudinal Study. *Journal of Health and Social Behaviour 48*(4), pp.450-464. Retrieved April 11, 2009, from http://hsb.sagepub.com/content/48/4/450.full.pdf

Porter, M. and Kramer, M. (2006). Strategy and Society: The Link between Competitive Advantage and Corporate Social Responsibility. Retrieved December 18, 2009, from http://web.efzg.hr/dok/OIM/momazic/etika%20i%20drustvena%20odgovornost/Strategy%20and%20Society.pdf

Popham, F. (2006). Is there a Scottish Effect for Self Reports of Health? Individual Level Analysis of the 2001 UK Census. *BMC Public Health.* Retrieved May 17, 2010, from http://www.biomedcentral.com/content/pdf/1471-2458-6-191.pdf

Powell, S. Bratovic, E. (2007). The Impact of Long-term Youth Voluntary Service in Europe. A*VSO and ProMENTE Social Research*, pp.1-58. Retrieved April 12, 2010, from http://www.slideshare.net/promente/promente-avso-research-impact-of-youth-voluntary-service-in-europe

Pregibon, D. (1979). Goodness of Link Tests for Generalized Linear Models. *Appl. Statist. 29, No. 1*, pp. 15-24. Retrieved April 29, 2011, from http://biostat.georgiahealth.edu/~dryu/course/stat9110spring12/land15_ref2.pdf

Price, S. (2007). Volunteering in the Third Age: Final Report. Retrieved March 28, 2009, from

http://www.wrvs.org.uk/vita/assets/VITA%20Final%20Report.pdf

Prouteau, L. and Wolff, F. C. (2006). Does Volunteer Work Pay off in the Labour Market. *The Journal of Social-Economics 35*, pp.992-1013. Retrieved January 28, 2009, from http://www.sciencedirect.com/science?_ob=MiamiImageURL&_cid=272092&_user=7427071&_pii=S1053535705001265&_check=y&_origin=&_coverDate=31-Dec-2006&view=c&wchp=dGLbVBA-zSkWA&md5=e2688532ff1be041d73d6dfc4b20c859/1-s2.0-S1053535705001265-main.pdf

Prouteau, L. and Wolff, F. C. (2007). On the Relational Motive for Volunteer Work. *The Journal of Economic Psychology 29*, pp.314-335 Retrieved February 14, 2009, from http://www.sc-eco.univ-nantes.fr/~fcwolff/wolff/articles/JEP08.pdf

Public Social Partnership (2010). What are PSP's? Retrieved September 28, 2010, from http://www.pspscotland.co.uk/node/4

Putnam, R. D. (1995). Bowling Alone: America's Declining Social Capital. *Journal of Democracy, January*, pp.65-78. Retrieved March 19, 2010, from http://xroads.virginia.edu/~HYPER/DETOC/assoc/bowling.html

Putnam, R.D. (2000). Bowling Alone: The Collapse and Revival of American Community. *New York: Simon and Schuster*. Retrieved April 6, 2009, from http://bowlingalone.com/

Queens Cross Housing Association. 2011. held at Windsor Community Hall, Glasgow

Randall, J. (2002). Scotland's Population: Current Trends and Future Prospects. Retrieved January 8, 2009, from **http://www.gro-scotland.gov.uk/files/seminar.ppt#28**

Renna, F. (2006). Moonlighting and Overtime: A Cross-Country Analysis. Journal of Labor Research, *Vol 27*, Number 4, pp.575-591. Retrieved December 18, 2009, from https://springerlink3.metapress.com/content/258putacpnlpkgrt/resource-secured/?target=fulltext.pdf&sid=lju5b4smrhjbr5gjvkkw2eqk&sh=www.springerlink.com

Riecken, G., Babakus, E. and Yavas, U. (1994). Facing Resource Attraction Challenges in the Non-Profit Sector: A Behaviouristic Approach to Fundraising and Volunteer Recruitment. *Journal of Professional Services Marketing, Vol. 11*(1), pp.45-69. Retrieved November 12, 2010, from http://www.tandfonline.com/doi/pdf/10.1300/J090v11n01_05

Riley, M. W. and Riley, J. W. (1989). The Lives of Older People and Changing Social Roles. *The Annals of the American Academy of Political and Social Science, 503*, pp.14-28. Retrieved April 16, 2009, from http://ann.sagepub.com/cgi/reprint/503/1/14

Riley, R. and Weale, M. (2006). Commentary: Immigration and its Effects. *National Institute Economic National Institute Economic Review, No. 198*, October. Retrieved May 30, 2010, from http://ner.sagepub.com/cgi/reprint/198/1/4

Rolfe, H. and Metcalf, H. (2009). Recent Migration into Scotland: the Evidence Base. *Scottish Government Social Research*, Retrieved September 9, 2010, from http://www.scotland.gov.uk/Resource/Doc/261996/0078342.pdf

Rochester, C., Hutchison, C., Harris, M. and Keely, L. (2002). A Review of the Home Office Older Volunteers Initiative. *Home Office Research Study 248*. Retrieved April 8, 2010, from http://www.homeoffice.gov.uk/rds/pdfs2/hors248.pdf

Rothenberg, T. (1984). Approximating the Distributions of Econometric Estimators and Test statistics. *In Griliches, Z. & Intriligator, M.D. (eds.) Handbook of Econometrics, vol.2. Amsterdam: North-Holland*. Retrieved April 29, 2011, from http://www.sciencedirect.com/science/article/pii/S1573441284020079

Roy, K. and Ziemek, S. (2001). The Economics of Volunteering. *ZEF Discussion Papers on Development Policy 26.* Retrieved November 18, 2009, from http://www.iadb.org/Etica/Documentos/ryz_onthe-i.pdf

Royal Bough of Winsor and Maidenhead (2011). Big Society - White Paper. Retrieved October 31, 2011, from http://www.rbwm.gov.uk/web/consultation_big_society_white_paper.htm

Salamon, L.M. (1995). Partners in Public Service: Government-Nonprofit Relations in the Modern Welfare State. *John Hopkins University.* Retrieved November 30, 2009, http://www.jstor.org/stable/pdfplus/1049431.pdf?acceptTC=true

Salamon, L. M. (2010). Putting the Civil Society Sector on the Economic Map of the World. *Annals of Public and Cooperative Economics 81*(2), pp.167-210. Retrieved November 30, 2010, from http://ccss.jhu.edu/wp-content/uploads/downloads/2011/10/Annals-June-2010.pdf

Salamon, L.M. and Anheier, H.K. (1997). The Third World's Third Sector in Comparative Perspective. *The Johns Hopkins University Institute for Policy Studies*. Retrieved November 30, 2009, from http://www.jhu.edu/~ccss/publications/pdf/thirdwor.pdf

Salamon, L. M., Sokolowski, S. W. and Associates (2004). Global Civil Society: Dimensions of the Nonprofit Sector Volume Two. Published *in Association with the John Hopkins Comparative Nonprofit Sector Project*. Retrieved November 30, 2009, from http://www.amazon.com/Global-Civil-Society-Dimensions-Nonprofit/dp/156549184X#reader_156549184X

Salamon, L. M., Sokolowski, W. and Haddock, M. A. (2011a). Measuring the Economic Value of Volunteer Work Globally: Concepts, Estimates, and a Roadmap to the Future. *Annals of Public and Cooperative Economics 82*(3), pp.217-252. Retrieved October 28, 2011, from http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8292.2011.00437.x/pdf

Salamon, L. M., Sokolowski, W. and Tice, H. (2008). Putting Volunteering on the Economic Map of the World: A Report on the Johns Hopkins / International Labour Organization Volunteer Measurement Project. *Johns Hopkins University.* Retrieved November 30, 2009, from http://www.istr.org/conferences/barcelona/cd/pdf/abstracts/Haddock.Megan.pdf

Salt, J, (1993). The Geographical Impact of Migration in Europe: Lessons for Europe from the New World. *Chapter 13 in King, R.(1993). The New Geography of European Migrations. London, Belhaven.*

Sanders, B. S. (1964). Measuring Community Health Levels. *American Journal of Public Health, Vol 54*, pp.1063-1070. Retrieved September 21, 2010, from http://ajph.aphapublications.org/cgi/reprint/54/7/1063.pdf

ScER (2005). Something to Believe in – A Report on Recruitment Problems and Opportunities in the Scottish Voluntary Sector. Retrieved November 28, 2010, from http://www.strath.ac.uk/media/departments/hrm/pdfs/hrm-pdf-scer/media_63273_en.pdf

Schady, N. R. 2001, "Who Participates? The Supply of Volunteer Labour and the Distribution of Government Programs in Rural Peru", Policy Research Working Paper 2671, The World Bank, http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2001/09/28/000094946_01092004013193/Rendered/PDF/multi0page.pdf

Science2.0 (2008). The Mystery of 'The Scottish Effect'? Why is Scotland the Deadliest Place in the UK. Retrieved April 17, 2010, from http://www.scientificblogging.com/news_releases/the_mystery_of_the_scottish_effect_why_is_scotland_the_deadliest_place_in_the_uk

Schram, V. R. and Dunsing, M. M. (1981). Influences on Married Women's Volunteer Work Participation. *Journal of Consumer Research, 7*, pp.372–379. Retrieved January 20, 2009, from http://www.jstor.org/stable/pdfplus/2488691.pdf?acceptTC=true

Scotland's Future Form (2007). Growing Older and Wiser Together: A Futures View on Positive Ageing. Scotland Future Form. Retrieved November 18, 2008, from http://www.scotlandfutureforum.org/assets/files/Growing%20Older%20and%20Wiser%20-%20Forum%20report.pdf

Scotpho (2009). Healthy Life Expectancy. Retrieved June 29, 2010, from http://www.scotpho.org.uk/home/Populationdynamics/hle/hle_data/hle_scotland.asp

Scotpho (2011). % of Population age 65+ Years. Retrieved October 19, 2011, from http://www.scotpho.org.uk/hfa2009/tables/tableB.php?w=1366&h=768

Scottish Centre for Intergenerational Practice (2007). What We Do. Retrieved March 18, 2010, from http://www.scotcip.org.uk/what_we_do.html

Scottish Government (2002). Scottish Executive Response to the Social Justice Committee Inquiry into the Voluntary Sector. Retrieved October 14, 2009, from http://www.scotland.gov.uk/Publications/2002/05/14731

Scottish Government (2003a). Scoping Study of Older People in Rural Scotland", Retrieved November 12, 2009, from http://2009,www.scotland.gov.uk/publications/2003/03/16899/21094

Scottish Government (2003b). The Scottish Compact. Retrieved July 8, 2010, from http://www.thecompact.org.uk/shared_asp_files/GFSR.asp?NodeID=101333

Scottish Government (2005a). Heath in Scotland 2004. Retrieved September 20, 2010, from http://www.scotland.gov.uk/Resource/Doc/37428/0009574.pdf

Scottish Government (2005b). A Vision for the Voluntary Sector – The Next Phase of our Relationship. Retrieved January 19, 2009, from http://www.scotland.gov.uk/Resource/Doc/47121/0020623.pdf

Scottish Government (2005c). Active Communities- Supporting Active Communities in Scotland, the Scottish Executives Response. Retrieved January 19, 2009, from http://www.scotland.gov.uk/library3/society/sacs-00.asp

Scottish Government (2006a). Be a Volunteer. Retrieved January 19, 2009, from http://www.scotland.gov.uk/Topics/People/OlderPeople/Learning/Volunteer

Scottish Government (2006b). Age and Experience: Developing the Strategy for a Scotland with an Ageing Population- Setting the Scene. Retrieved November 22, 2009, from http://www.scotland.gov.uk/Publications/2007/03/26094313/0

Scottish Government (2007a). All Our Futures Planning for a Scotland with an Ageing Population: Summary and action plan. Retrieved November 16, 2009, from http://www.scotland.gov.uk/Resource/Doc/169342/0047172.pdf

Scottish Government (2007b). Review of Support Service Needs of Voluntary Organisations: Perceptions of Users and Providers. Retrieved March 9, 2010, from http://www.scotland.gov.uk/Publications/2007/02/19105954/0

Scottish Government (2007c). Skills for Scotland: A Lifelong Skills Strategy. Retrieved November 25, 2009, from http://www.scotland.gov.uk/Resource/Doc/197204/0052752.pdf

Scottish Government (2008). Enterprising Third Sector: Action Plan 2008-2011. Retrieved March 12, 2010, from http://www.scotland.gov.uk/Resource/Doc/228582/0061861.pdf

Scottish Government (2009a). Recent Migration into Scotland: The Evidence Base. Retrieved September 18, 2010, from http://www.scotland.gov.uk/Publications/2009/02/23154109/3

Scottish Government (2009b). Joint Statement on the Relationship at Local level between Government and the Third Sector. *Scottish Government, COSLA, SOLACE (Scotland) and SCVO*. Retrieved October 17, 2010, from http://www.scotland.gov.uk/Resource/Doc/1036/0087048.pdf

Scottish Government (2009c). Strategic Objectives. Retrieved October 27, 2010, from http://www.scotland.gov.uk/About/scotPerforms/objectives

Scottish Government (2009d). Public Social Partnership Project. Retrieved November 18, 2010, from http://www.scotland.gov.uk/News/Releases/2009/11/23121830

Scottish Government (2009e). National Outcomes. Retrieved April 10, 2010, from http://www.scotland.gov.uk/About/scotPerforms/outcomes

Scottish Government (2010a). Demographic Change in Scotland. Retrieved March 15, 2010, from http://www.scotland.gov.uk/Resource/Doc/332379/0108163.pdf

Scottish Government (2010b). Poverty and Income Inequality in Scotland: 2008-09. Retrieved June 17, http://www.scotland.gov.uk/Resource/Doc/933/0098724.pdf

Scottish Government (2010c). Enterprising Third Sector Action Plan - Progress Report (2010). Retrieved March 31, 2009,http://www.scotland.gov.uk/Resource/Doc/48453/0102281.pdf

Scottish Government (2010d). Scottish Survey of Adult Literacy's 2009: Report of Findings. Retrieved August 16, 2011, from http://www.scotland.gov.uk/Resource/Doc/319174/0102005.pdf

Scottish Government (2011a). Scottish Health Survey. Retrieved October 1, 2011, from http://www.scotland.gov.uk/Resource/Doc/358842/0121284.pdf[1]

Scottish Government (2011b). Higher Education Students and Qualifiers at Scottish institutions 2009-2010. Retrieved October 1, 2011, from http://www.scotland.gov.uk/Topics/Statistics/Browse/Lifelong-learning/API0809/Students0910

Scottish Government (2011c). Poverty and Income Inequality in Scotland 2009/10. Retrieved October 5, 2011, from http://www.scotland.gov.uk/Resource/Doc/933/0117618.pdf

Scottish Government (2011d). Improving Scotland's Health. Retrieved October 31, 2011, from http://www.scotland.gov.uk/Topics/Health/health

Scottish Government (2011e). Scottish Health Survey. Retrieved November 1, 2011, from http://www.scotland.gov.uk/Resource/Doc/358842/0121284.pdf

Scottish Government (2011f). National Statistics - Rural Scotland Key Facts 2011. Retrieved October 14, 2011, from http://www.scotland.gov.uk/Publications/2011/09/29133747/2

Scottish Government (2011g). See the Person Not the Age. Retrieved September 16, 2011, from http://www.seetheperson.info/about/index.html

Scottish Government (2011h). Public Social Partnerships. Retrieved August 11, 2011, from http://www.scotland.gov.uk/News/Releases/2011/07/08133636

Scottish Government (2011i). Higher Education Students and Qualifiers at Scottish institutions 2009–2010. Retrieved December 18, 2011, from http://www.scotland.gov.uk/Topics/Statistics/Browse/Lifelong-learning/API0809/Students0910

Scottish Government (2011k). Poverty and income inequality in Scotland 2009/10. Retrieved December 20, 2011, from http://www.scotland.gov.uk/Resource/Doc/933/0117618.pdf

Scottish Government (2012a). Health and Community Care – Datasets. Retrieved August 11, 2011, from

http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/Data/QuarterlySurvey

Scottish Government (2012b). Home Care Information 1998 to Latest. Retrieved January 20, 2012, from http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/Data/Homecareinfo

Scottish Government (2012c). Community Care Outcomes November 2011 update. Retrieved January 20, 2012, from http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/Data/careoutcomes

Scottish Government (2012d). Health and Social Care Data. Retrieved January 20, 2012, from http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/Data/CareData

Scottish Household Survey (2007). Scotland's People Annual Report: Results from 2007. *Scottish Government Publication.* Retrieved April 18, 2010, from http://www.scotland.gov.uk/Resource/Doc/933/0067472.pdf

Scottish Household Survey (2001). Scotland's People Annual Report: Results from 2000. *Scottish Government Publication.* Retrieved April 18, 2010, from http://www.scotland.gov.uk/stats/bulletins/00115/00115d-01.asp

Scottish Household Survey (2002). Scotland's People Annual Report: Results from 2001. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/47007/0027041.pdf

Scottish Household Survey (2003). Scotland's People Annual Report: Results from 2002. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/47133/0024905.pdf

Scottish Household Survey (2004). Scotland's People Annual Report: Results from 2003. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/17002/0028715.pdf

Scottish Household Survey (2005). Scotland's People Annual Report: Results from 2004. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/57346/0016412.pdf

Scottish Household Survey (2006). Scotland's People Annual Report: Results from 2005. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/140387/0034518.pdf

Scottish Household Survey (2007). Scotland's People Annual Report: Results from 2006. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/193421/0052120.pdf

Scottish Household Survey (2008). Scotland's People Annual Report: Results from 2007. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/933/0067472.pdf

Scottish Household Survey (2009). Scotland's People Annual Report: Results from 2008. *Scottish Government Publication.* Retrieved April 18, 2010, fromhttp://www.scotland.gov.uk/Resource/Doc/283301/0085783.pdf

Scottish Household Survey (2010). Scotland's People Annual Report: Results from 2009. *Scottish Government Publication.* Retrieved Oct 11, 2010, from http://www.scotland.gov.uk/Publications/2010/08/25092046/21

Scottish Household Survey (2011). Scotland's People Annual Report: Results from 2010. *Scottish Government Publication.* Retrieved August 29, 2011, from http://scotland.gov.uk/Resource/Doc/355935/0120253.pdf

Scottish Parliament (2007), Future Form Report Says Scotland's Ageing Crisis is a Myth. Retrieved November 14, 2009, from http://www.scottish.parliament.uk/nmCentre/news/news-07/pa07-001.htm

SCVO (2003). Challenges to the Rural Voluntary Sector (2003). Retrieved September 7, 2010, from http://www.scvo.org.uk/scvo/Information/ViewInformation.aspx?al=t&page=&all=&from=DSR&Info=176&TCID=34&PageName

SCVO (2008). Ground-Breaking New Partnership Between Business and Voluntary Sector. Retrieved September 18, 2009, from http://www.scvo.org.uk/scvo/TFNPR/ViewTFNPR.aspx?pr=7996&from=Home&al=t

SCVO (2009). Get to know Scotland's Third Sector. Retrieved April 8, 2010, from http://www.scvo.org/scvo/Information/ViewInformation.aspx?al=t&page=&all=&from=DSR&Info=1623&TCID=27&PageName=Facts

SCVO (2010a). Future Jobs Future Communities. Retrieved January 6, 2011, from http://microsites.scvo.org.uk/scvocms/images/Future%20Jobs%20Fund/FutureJobs_FutureCommunities.pdf

SCVO (2010b). Third Sector Student Internships. Retrieved January 12, 2011, from http://www.scvo.org.uk/training/third-sector-student-internships/

SCVO (2010c). Is the Cream in Danger of Turning Sour? Retrieved December 5, 2010, http://www.scvo.org.uk/tfn/columns/is-the-cream-in-danger-of-turning-sour/

SCVO (2010d). Report and Financial Statements: Year Ending 31st March 2010. Retrieved May 19, 2010, from http://www.scvo.org.uk/wp-content/uploads/2010/06/SCVO_AnnualReport_2010.pdf

SCVO (2010e). Scottish Voluntary Sector Statistics 2010. Retrieved May 19, 2010, from http://www.scvo.org.uk/wp-content/uploads/2010/08/SCVO_SectorStats_2010_Web.pdf

SCVO (2010f). Who Are We. Retrieved May 19, 2010, from http://www.scvo.org.uk/scvo/AboutSCVO/MissionAndPurpose.aspx

SCVO (2010g). Current Activities. Retrieved May 19, 2010, from http://www.scvo.org.uk/scvo/AboutSCVO/CurrentActivities.aspx?f=m

SCVO (2010h). SCVO & Rural Communities. Retrieved October 13, 2010, from http://www.scvo.org.uk/about-the-sector/scvo-and-rural-communities/

SCVO (2010i). Draft Guidance on Social Care Procurement – Response by SCVO. Retrieved October 18, 2010, from http://www.scvo.org.uk/policy/community-news/draft-guidance-on-social-care-procurement-response-by-scvo/

SCVO (2011). Scottish Third Sector Key Statistics. Retrieved October 29, 2011, from http://www.scvo.org.uk/wp-content/uploads/2011/10/Scottish-Third-Sector-Key-Statistics-Oct-2011.pdf

Senscot (2010). Annul General Meeting. Speaker: Christine Carlin, Head of the Scottish Government Third Sector Division. 1st October. Retrieved November 6, 2010, from http://www.senscot.net/view_art.php?viewid=10314

Shishko, R. and Rosrker, B. (1976). The Economics of Multiple Job Holding. *The American Economic Review, Vol. 66*, No. 3 (1076), pp.298-308. Retrieved December 18, 2009, from http://www.rand.org/pubs/monographs/MG265/images/webS0159.pdf

Siegel, J. and Swanson, D. A. (2004) The methods and Materials of Demography. *Elsevier Academic press, 2nd Edition*

Sinclair, D. (20060. Barriers Prevent More Older People from Volunteering. Retrieved December 29, 2009, from http://policy.helptheaged.org.uk/NR/rdonlyres/8D4648A0-D6CF-4326-9F33-6E2C6FC4E31F/0/VolunteeringJuly2006.pdf

Smith, A. (1759). The Theory of the Moral Sentiments. *Published by Liberty Fund Inc US in 1984*

Smith, D. H. (1981). Altruism, Volunteers, and Volunteerism. *Journal of Voluntary Action Research, 10*, pp.21–36. Retrieved February 22, 2009, from http://nvs.sagepub.com/content/10/1/21.full.pdf+html

Smith, M.B., Burner, J.S. and White, R.W. (1956). Opinions and Personality. *New York, John Wiley & Sons*

Smith Conway, K. and Kimmel, J. (1998). Male Labour Supply Estimates and the Decision to Moonlight" *Labour Economics, 5*, pp.135-166. Retrieved December 18, 2009, from http://darp.lse.ac.uk/PapersDB/Conway-Kimmel_(LabEc_98).pdf

Smith, D. H. and Macaulay, J. (1980). Participation in Social and Political Activities. *1st Edition, San Francisco, London : Jossey-Bass*

Social Firms UK (2009). Third Sector Performance Dashboard. Retrieved September 27, 2010, from http://socialfirmsuk.co.uk/resources/library/third-sector-performance-dashboard

Social Research (2008). Scottish Household Survey Analytical Topic Report: Volunteering. Retrieved April 3, 2009, from http://www.scotland.gov.uk/Resource/Doc/209828/0055479.pdf

Socialist Worker Online (2008). Is the Voluntary Sector an 'Acceptable' Face of Privatisation?. *Issue 2118, 9 September 2008.* Retrieved February 5, 2009, from http://www.socialistworker.co.uk/art.php?id=15910

SOLACE Scotland (2009). Joint Statement on the Relationship at Local level between Government and the Third Sector. Retrieved April 28, 2009, from http://www.solacescotland.org.uk/webdocuments/Third%20Sector%20joint%20statement.pdf

Stahl, D. O. and Haruvy, E. (2006). Other-Regarding Preference: Egalitarian Warm Glow, Empathy, and Group Size. *University of Texas.* Retrieved March 16, 2009, from https://webspace.utexas.edu/stahl/www/experimental/other_rp8.pdf

Stevenson, B. (2007). A8 Nationals in Glasgow. *Commissioned by Glasgow City Council.* Retrieved April 19, 2010, from http://www.asylumscotland.org.uk/assets/downloads/research/A8NationalsinGlasogwMay2007.pdf

Steinberg, R. (1997). Overall Evaluation of Economic Theories. *Voluntas, 8:2*, pp.179-204. Retrieved September 1, 2009, from https://springerlink3.metapress.com/content/23660607v1367262/resource-secured/?target=fulltext.pdf&sid=k1bpv5iihsf3jtx3rvwsa55i&sh=www.springerlink.com

Stride, H. (2006). An Investigation into Values Dimensions of Branding: Implications for the Charity Sector. *International Journal of Nonprofit and Voluntary Sector Marketing, 11* (2), pp.115-124. Retrieved March 31, 2009, from http://onlinelibrary.wiley.com/doi/10.1002/nvsm.44/pdf

Stukas, A. A., Worth, K. A., Clary, E. G. and Snyder, M. (2009). The Matching of Motivations to Affordances in the Volunteer Environment. *Nonprofit and Voluntary Sector Quarterly, Vol 38*(1), pp.5-28. Retrieved April October 12, 2009, from http://nvs.sagepub.com/content/38/1/5.full.pdf+html

Sullivan, D. F. (1971). A Single Index of Mortality and Morbidity. Health *Science, Mental Health Administration, Health Report Vol 86(4),* pp.347-354. Retrieved June 1, 2010, from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1937122/pdf/hsmhahr00004-0061.pdf

Sutherland, K. and Coyle, N. (2009). Quality in Healthcare in England, Wales, Scotland, Northern Ireland: An Intra-UK Chart Book. *University of Cambridge Publication for The Health Foundation*, Retrieved June 10, 2010, from www.health.org.uk/document.rm?id=1022

Tang, F. (2008). Socioeconomic Disparities in Voluntary Organization Involvement Among Older Adults. *Nonprofit and Voluntary Sector Quarterly*, *37*(1), pp.57-75. Retrieved November 29, 2009, from http://nvs.sagepub.com/cgi/reprint/37/1/57

Tardanico, R. (2010). Logistic Regression in Stata. *Florida International University*. Retrieved November 11, 2010, from http://www2.fiu.edu/~tardanic/statalogis.pdf

Thaler, R. H. and Sunstein, C. (2008). Nudge: Improving Decisions about Health, Wealth, and Happiness. Yale University Press New Haven & London

Thatcher, R., Kannisto, V. and Andreev, K. (2002). The Survivor Ratio Method for Estimating Numbers at High Ages. *Demographic Research, Vol 6, Article 1*, pp.1-18. Retrieved April 17, 2009, from http://www.demographic-research.org/Volumes/Vol6/1/6-1.pdf

The Baring Foundation (2009). The First Principle of Volunteering Action. *Working Paper No 3*. Retrieved January 20, 2009, from http://www.baringfoundation.org.uk/FirstPrincipleofVA.pdf

The Big Picture (2010). The Big Picture Help Boxes. Retrieved March 22, 2010, from http://www.thebigpic.org.uk/html/menu3_1.asp

Thoits, P. and Hewitt, L. N. (2001). Volunteer Work and Well-Being. *Journal of Health & Social Behaviour 42*(2), pp.115 – 131. Retrieved June 10, 2010, http://www.members.asanet.org/images/members/docs/pdf/featured/volunteer.pdf

Tiehen, L. (2000). Has Working More Caused Married Women to Volunteer Less? Evidence from Time Diary Data 1965-1993. *Nonprofit and Voluntary sector Quarterly, 29*; pp.505-529. Retrieved March 9, 2009, from http://nvs.sagepub.com/content/29/4/505.full.pdf

Timms, S. (2006). Examining the Pensions Commission Report: A New Pensions Settlement for the 21st Century. *Minister of State for Pensions Reform (Department for Work and Pensions).* Retrieved April 10, 2010, from http://www.dwp.gov.uk/aboutus/2006/18_01_06.asp

Tschirhart, M., Mesch, D. J., Perry, J. L., Miller, T. K. and Lee, G. (2001). Stipended Volunteers: Their Goals, Experiences, Satisfaction, and Likelihood of Future Service. *Nonprofit and Voluntary Sector Quarterly 30*,pp.422-442. Retrieved January 7, 2011, from http://nvs.sagepub.com/content/30/3/422.full.pdf+html

The Transition Network (2011). Embracing Change after 50. Retrieved September 17, 2011, from http://www.thetransitionnetwork.info/home/

Turkey, J. W. (1949). One Degree of Freedom for Non-Additivity. *Biometrics, Vol. 5, No. 3* . pp. 232-242. Retrieved April 30, 2011, from http://www.jstor.org/stable/pdfplus/3001938.pdf?acceptTC=true

Turner, A. (2005). A New Pensions Settlement for the 21st Century: The Second Report of the Pensions Commission. Retrieved March 17, 2010, from http://medias.lemonde.fr/mmpub/edt/doc/20051130/715810_pensionsreport.pdf

Unell, J. (2006). Barriers or Opportunity: Insurance for Older Volunteers. *VITA.* Retrieved June 20, 2010, from http://www.wrvs.org.uk/vita/assets/barrier_or_opportunity.pdf

Unger, L. S. (1991). Altruism as a Motivation to Volunteer." Journal of Economic Psychology, 1991, 12, pp.71–100. Retrieved January 20, 2009, from http://www.sciencedirect.com/science?_ob=MiamiImageURL&_cid=271667&_user=7427071&_pii=016748709190044T&_check=y&_origin=&_coverDate=31-Mar-1991&view=c&wchp=dGLzVlk-zSkWA&md5=c7bbbefe73a0fc3149908cdd9adf9553/1-s2.0-016748709190044T-main.pdf

United Kingdom Government (2009). Borders, Citizenship and Immigration Act 2009. Retrieved August 16, 2010, from http://www.legislation.gov.uk/ukpga/2009/11/section/42

United Nations (2001). The Ageing of the World's Population. Retrieved March 10, 2009, from http://www.globalaging.org/waa2/documents/theagingoftheworld.htm

United Nations (2002). World Population Ageing 1950-2050. *Population Division, DESA, United Nations*. Retrieved March 9, 2009, from http://www.un.org/esa/population/publications/worldageing19502050/

United Nations (2003). Handbook on Non-Profit Institutions in the System of National Accounts. Retrieved March 10, 2009, from http://unstats.un.org/unsd/publication/SeriesF/SeriesF_91E.pdf

United Nations (2009a). World Population Prospects. *Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.* Retrieved June 17, 2010, from http://esa.un.org/unpp

United Nations (2009b). Country Profile. Retrieved August 7, 2010, from http://esa.un.org/unpp/index.asp?panel=3

United States Department of Labour (2009). Volunteering in the United States. Retrieved August 7, 2010, from http://www.bls.gov/news.release/pdf/volun.pdf

Vaillancourt, F. (1994). To Volunteer or Not: Canada, 1987. *The Canadian Journal of Economics, Vol. 27*(4), pp.813-826. Retrieved December 2, 2008, from http://www.jstor.org/stable/pdfplus/136185.pdf?acceptTC=true

Vaillancourt, F. and Payette, M. (1986). The Supply of Volunteer Work: The Case of Canada", *Journal of Voluntary Action Research, 15*, pp.45–56. Retrieved December 2, 2008, from http://nvs.sagepub.com/content/15/4/45.full.pdf+html

Valentinov, V. (2007). Some Reflections on the Transaction Cost Theory of Nonprofit Organisation. *Zeitschrift für öffentliche und Gemeinwirtschaftliche Unternehmen, Vol. 30* (1), pp.52-67. Retrieved January 9, 2009, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=951913

Valentinov, V., 2008, "The Transaction Cost Theory of the Nonprofit Firm: Beyond Opportunism", *Nonprofit and Voluntary Sector Quarterly*, *37*, pp.5-18. Retrieved January 9, 2009, from http://nvs.sagepub.com/content/37/1/5.full.pdf+html

Van Dijk, J. and Boin, R. (1993). Volunteer Labour Supply in the Netherlands. *De Economist 141, NR*. pp.402-418. Retrieved August 7, 2010, from http://www.springerlink.com/content/m1g6806v56x51476/fulltext.pdf

Van Willigen, M. (2000). Differential Benefits of Volunteering Across the Life Course. *Journal of Gerontology*, *558*(5), pp.S308-S318. Retrieved December 10, 2009, from http://psychsoc.gerontologyjournals.org/cgi/reprint/55/5/S308

Volunteer Canada (2001). Volunteer Connections: New Strategies for Involving Older Adults. Retrieved September 18, 2009, from http://volunteer.ca/volunteer/pdf/OlderAdults-Eng.pdf

Volunteer Centre (2009). Thinking about Volunteering. Retrieved September 18, 2009, from http://www.volunteerglasgow.org/4U/thinkabout.asp

Volunteer Development Scotland (1996). Bridging the Generations. *Volunteer Development Scotland, Stirling*

Volunteer Development Scotland (2004). Research Findings Scotland No. 4. Retrieved April 30, 2010, from http://www.vds.org.uk/Resources/RFSNo4.pdf

Volunteer Development Scotland (2006). Annual Digest of Statistics on Volunteering in Scotland 2006. Retrieved August 14, 2009, from http://www.vds.org.uk/Resources/Annual%20Digest%20of%20Statistics%202006.pdf

Volunteer Development Scotland (2007a). Measuring the Impact of Volunteering on Social Economy Organisations. Retrieved June 29, 2010, from www.socialeconomyscotland.info/scvo/content/forms/download_file.asp

Volunteer Development Scotland (2007b). Annual Statistics on Volunteering 2007. Retrieved June 18, 2010, from, http://www.vds.org.uk/Resources/Annual%20Statistics%202007.pdf

Volunteer Development Scotland (2008a). Annual Review 2008. Retrieved July 2, 2010, from http://www.vds.org.uk/Portals/0/Documents/layoutFINAL.pdf

Volunteer Development Scotland (2008b). Measuring a Smile – the Value of Volunteering in Modern Scotland, VDS Retrieved July 3, 2010, from http://www.cev.be/data/File/GA_Ljubljana_FINALReport.Complete.pdf

Volunteer Development Scotland (2009). About Us. Retrieved June 2, 2010, from http://www.vds.org.uk/AboutUs/tabid/65/Default.aspx

Volunteer Development Scotland (2010a). Investing in Volunteers. Retrieved August 18, 2010, from http://www.vds.org.uk/ManagingVolunteers/ImprovingWaysofWorking/InvestingInVolunteers/tabid/174/Default.aspx

Volunteer Development Scotland (2010b). Another Eight Organisations Awarded Investing in Volunteers. Retrieved September 5, 2010, from http://www.vds.org.uk/NewsEvents/News/tabid/145/Default.aspx?newsItemID=4168

Volunteer Development Scotland (2010c). Employer Supported Volunteering: Guidance to NHS Scotland Boards. Retrieved August 14, 2010, from http://www.vds.org.uk/Portals/0/documents/NHSdoc2010%20Employer%20Supported%20Volunteering.pdf

Volunteer Edinburgh (2007). Inspiring Volunteering – A Volunteering Strategy for Edinburgh. *Public Agencies and the Voluntary and Community Sector*. Retrieved August 17, 2010, from http://www.volunteeredinburgh.org.uk/strategy/documents/InspiringVolunteeringStartegy.pdf

Volunteer Match (2007). Great Expectations: Boomers and the Future of Volunteering. *User Research Study*. Retrieved January 16, 2009, from http://www.volunteermatch.org/nonprofits/resources/greatexpectations/GreatExpectations_FullReport.pdf

Volunteer Match (2008). Why Have An Employee Volunteer Program. Retrieved March 17, 2010, from http://www.volunteermatch.org/corporations/resources/businesscase.jsp

Von Kotzebue, A. and Wigger, B. U. (2009). Private Contributions to Collective Concerns: Modelling Donor Behaviour. *Cambridge Journal of Economics Advance Access published March 4.* Retrieved June 28, 2010, from http://cje.oxfordjournals.org/content/34/2/367.full.pdf+html

Wandersman, A., Florin, P., Friedmann, R. and Meier, R. (1987). Who Participates, Who Does Not, and Why? An Analysis of Voluntary Neighbourhood Organizsations in the United States and Israel. *Sociological Form, Volume 2*, No3, pp.534-555. Retrieved August 26, 2010, from http://www.springerlink.com/content/v35461470klw6015/fulltext.pdf

Warburton, J. and Cordingley, S. (2004). The Contemporary Challenges of Volunteering in an Ageing Australia. Retrieved March 8, 2009, from http://www.volunteeringaustralia.org/files/BXN6BQ56ZW/Warburton%20p67,%20v9,%202,%2004.pdf

Weemaes, B. and Schokkaert, E. (2009). Preference Variation in Volunteering Decisions: Public Goods and Private Benefits. *CES - Discussion Paper Series 09.09*, pp.1-32. Retrieved November 3, 2009, from https://lirias.kuleuven.be/bitstream/123456789/233104/1/DPS0909.pdf

WHO (2009). World Health Statistics Report. Retrieved May 18, 2010, from http://www.who.int/whosis/en/,

WHO (2010). International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) Version for 2010. Retrieved November 11, 2010 from http://apps.who.int/classifications/icd10/browse/2010/en#/X

Wilson, J. (2000). Volunteering. *Annual Review of Sociology. Vol 26*, pp.215-240. Retrieved February 8, 2009, from http://www.annualreviews.org/doi/full/10.1146/annurev.soc.26.1.215

Wilson, J. and Musick, M. A. (1999). The Effects of Volunteering on the Volunteer. *Law and Contemporary Problems, 62*(4), pp.141-168. Retrieved March 7, 2009, from http://www.law.duke.edu/shell/cite.pl?62+Law+&+Contemp

Wilson, A. and Pimm, G. (1996). The Tyranny of the Volunteer: The Care and Feeding of Voluntary Workforces. *Management Decision, Vol. 34*, No. 4, pp.24-40. Retrieved June 27, 2009, from http://www.emeraldinsight.com/journals.htm?articleid=864843

Wilson, T. and Rees P. (2003). Why Scotland Needs More Than Just a New Migration Policy. *Scottish Geographical Journal 119*, pp.191–208. Retrieved August 17, 2010, from http://www.tandfonline.com/doi/pdf/10.1080/00369220318737174

Williamson, H. (2006). Charting the Landscape of European Youth Voluntary Activities. Council of Europe Retrieved April 23, 2009, from http://youth-partnership-eu.coe.int/youth-partnership/documents/EKCYP/Youth_Policy/docs/Voluntary/Research/2005_charting_landscape_voluntary_coe_pub.pdf

Winniford, J. C., Carpenter, D. S. and Grider, C. (1997). Motivations of College Student Volunteers: A Review. *NASPA Journal*, *34*(2), pp.134–146. Retrieved March 11, 2009, from http://journals.naspa.org/cgi/viewcontent.cgi?context=jsarp&article=1015&date=&mt=MTMyMTI3OTk3Mw==&access_ok_form=Continue

Wise, D. (1997). Retirement Against the Demographic Trend: More Older People Living Longer, Working Less, And Saving Less. *Demography*, *Vol 34*(1), pp.83-95. Retrieved March 9, 2009, from http://www.jstor.org/stable/pdfplus/2061661.pdf?acceptTC=true

Wood, R. and Bain, M., (2001). The Health and Well-being of Older People in Scotland: Insights from national data. *Information & Statistics Division, Common Services Agency for NHS Scotland*. Retrieved March 19, 2009, from http://www.isdscotlandarchive.scot.nhs.uk/isd/files//older.pdf

Woolvin, M. (2010). Does Informal Volunteering Count?: Researching Informal Voluntary Activity in Deprived Scottish Communities Throughout the Lifecourse. Retrieved May 22, 2010, from http://www.vds.org.uk/Portals/0/documents/Mike%20Woolvin.pdf

Workpermit.com (2007). Report Praises Migrant Contribution to UK Workforce. Retrieved June 9, 2010, from http://www.workpermit.com/news/2007_01_01/uk/immigrant_contribution_workforce_economy.htm

World Volunteer Web (2006). Delaying Retirement will Stop Older People Volunteering. *Online Recruitment*. Retrieved May 10, 2010, from http://www.worldvolunteerweb.org/resources/research-reports/national/doc/delaying-retirement-will-stop.html

Wright, R. E. (2008). The Economics of the New Immigration to Scotland. *The David Hume Institute, Occasional Paper No 77*, Retrieved December 12, 2008, from http://www.davidhumeinstitute.com/DHI%20Website/publications/hop/HOP%2077%20The%20Economics%20of%20New%20Immigration%20to%20Scotland.pdf

Wright, R.E. and Lisenkova, K. (2006). Lack of People of Working Age. *Copenhagen Consensus Problem Paper, Copenhagen Consensus Centre*. Retrieved November 19, 2008, fromhttp://www.migrationwatchuk.org/briefingPaper/document/14

WRVS (2007). WRVS Response to 'Age and Experience: Developing a Strategy for a Scotland with an Ageing Population. Retrieved December 2, 2009, from http://www.wrvs.org.uk/DocUploads/strategy.pdf

WRVS (2008). The Real Difference WRVS Makes to People's Lives: WRVS Social Impact Report 2008. Retrieved November 21, 2009, from http://www.wrvs.org.uk/DocUploads/WRVS-social-impact-report-LR-FINAL_April2009.pdf

Wymer, W. W. (2003). Differentiating Literacy Volunteers: A Segmentation Analysis for Target Marketing. *International Journal of Nonprofit and Voluntary Sector Marketing, Vol 8*(3), pp.267- 285, Retrieved January 29, 2009, from http://www.ingentaconnect.com/content/jws/vsm/2003/00000008/00000003/art00006

Appendix A: Local Scaling Factors

Tables A1 to A4 show the GROS local scaling factors for fertility, mortality, and migration by both the Local Authority and NHS board areas.

Table A1 Local Scaling Factors for Fertility and Mortality by Local Authority, Scotland, 2008-Based Projections

	Fertility	*Mortality*					
		Male			*Female*		
		0–59	*60–79*	*80+*	*0–59*	*60–79*	*80+*
Scotland	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Local Authority areas							
Aberdeen City	0.840	0.941	0.994	0.992	0.907	0.924	1.043
Aberdeenshire	1.152	0.693	0.744	0.906	0.746	0.829	0.928
Angus	1.180	0.813	0.822	0.951	0.926	0.855	1.033
Argyll & Bute	1.136	0.887	0.872	0.986	1.071	0.878	0.967
Clackmannanshire	1.100	1.057	1.057	0.995	0.958	0.958	1.074
Dumfries & Galloway	1.182	0.828	0.853	0.985	0.934	0.913	0.987
Dundee City	0.941	1.308	1.068	0.854	1.304	1.050	0.913
East Ayrshire	1.078	0.989	1.039	1.030	1.214	1.118	1.130
East Dunbartonshire	1.037	0.709	0.769	0.900	0.631	0.789	0.860
East Lothian	1.204	0.752	0.873	1.040	0.761	0.871	0.978
East Renfrewshire	1.178	0.689	0.873	0.987	0.724	0.772	0.911
Edinburgh, City of	0.700	0.860	0.958	0.892	0.893	0.877	0.893
Eilean Siar	1.158	1.130	1.130	1.130	0.950	0.950	0.950
Falkirk	1.092	0.921	0.989	1.099	0.899	1.066	1.113
Fife	1.063	0.894	0.883	0.995	0.987	0.938	0.939
Glasgow City	0.846	1.510	1.556	1.157	1.393	1.370	1.080
Highland	1.147	0.947	0.876	0.921	0.928	0.853	0.944
Inverclyde	1.091	1.399	1.191	1.114	1.180	1.122	1.000
Midlothian	1.118	0.874	0.886	1.016	0.883	0.980	1.038
Moray	1.221	0.792	0.866	0.960	0.907	0.874	1.020
North Ayrshire	1.092	1.089	1.039	1.095	1.102	1.013	1.062

North Lanarkshire	1.103	1.179	1.190	1.094	1.157	1.192	1.104
Orkney Islands	1.111	0.987	0.987	0.987	0.869	0.869	0.869
Perth & Kinross	1.044	0.812	0.749	0.964	0.791	0.835	0.917
Renfrewshire	1.070	1.146	1.183	1.007	1.051	1.162	1.079
Scottish Borders	1.164	0.747	0.801	1.052	0.819	0.845	1.099
Shetland Islands	1.186	0.829	0.829	0.829	0.813	0.813	0.813
South Ayrshire	1.044	0.891	0.919	0.915	0.863	0.934	0.937
South Lanarkshire	1.065	1.043	1.063	1.045	0.999	1.030	1.052
Stirling	0.984	0.775	0.857	0.993	0.845	0.890	0.959
West Dunbartonshire	1.065	1.259	1.255	1.159	1.215	1.220	1.078
West Lothian	1.174	0.836	0.948	1.013	0.969	1.070	1.114

Source: GROS. (2009a)

Table A2 Local Scaling Factors for Migration by Local Authority (persons per year), 2008-Based Projections

	2008/09	*2009/10*	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*2014/15 and beyond*
Scotland	16,000	17,400	16,200	15,100	12,900	12,400	12,000
Local Authority areas							
Aberdeen City	600	600	500	400	250	200	150
Aberdeenshire	1,550	1,850	1,800	1,800	1,650	1,650	1,700
Angus	450	550	550	500	500	500	500
Argyll & Bute	-50	0	50	50	50	100	100
Clackmannanshire	350	400	400	400	350	400	400
Dumfries & Galloway	500	500	500	450	400	350	350
Dundee City	100	50	-50	-150	-200	-300	-350
East Ayrshire	300	250	200	150	100	100	50
East Dunbartonshire	-150	-250	-300	-350	-350	-400	-450
East Lothian	1,200	1,300	1,200	1,100	950	900	850
East Renfrewshire	-100	-150	-150	-150	-150	-200	-200
Edinburgh, City of	2,200	2,600	2,600	2,550	2,350	2,400	2,450
Eilean Siar	0	50	50	50	50	100	100
Falkirk	500	600	600	650	600	600	650

Fife	1,100	1,300	1,300	1,300	1,200	1,200	1,250
Glasgow City	1,150	900	500	200	-100	-350	-550
Highland	1,650	1,900	1,850	1,800	1,600	1,650	1,650
Inverclyde	-200	-300	-300	-350	-350	-350	-400
Midlothian	300	250	200	100	50	0	-50
Moray	250	250	200	200	150	100	100
North Ayrshire	200	150	100	50	0	0	-50
North Lanarkshire	100	100	50	0	-50	-50	-100
Orkney Islands	100	100	100	150	150	150	150
Perth & Kinross	1,600	1,800	1,750	1,650	1,450	1,450	1,450
Renfrewshire	50	-50	-150	-200	-250	-300	-350
Scottish Borders	900	1,000	950	950	800	800	800
Shetland Islands	0	-50	-50	-50	-50	-50	-50
South Ayrshire	200	250	250	250	250	250	250
South Lanarkshire	500	700	800	900	900	950	1,050
Stirling	100	150	150	150	150	150	150
West Dunbartonshire	-150	-200	-250	-250	-250	-300	-300
West Lothian	700	800	800	800	700	700	700

Source: GROS. (2009a)

Table A3 Local Scaling Factors for Migration by NHS Board Area (persons per year), 2008-Based Projections

	2008/09	***2009/10***	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15 and beyond***
Scotland	16,000	17,400	16,200	15,100	12,900	12,400	12,000
NHS board areas							
Ayrshire & Arran	700	650	550	450	350	350	250
Borders	900	1,000	950	950	800	800	800
Dumfries & Galloway	500	500	500	450	400	350	350
Fife	1,100	1,300	1,300	1,300	1,200	1,200	1,250
Forth Valley	950	1,150	1,150	1,200	1,100	1,150	1,200
Grampian	2,400	2,700	2,500	2,400	2,050	1,950	1,950
Greater Glasgow & Clyde	698	85	-500	-934	-1,287	-1,728	-2,063

Highland	1,600	1,900	1,900	1,850	1,650	1,750	1,750
Lanarkshire	502	665	700	734	687	728	763
Lothian	4,400	4,950	4,800	4,550	4,050	4,000	3,950
Orkney	100	100	100	150	150	150	150
Shetland	0	-50	-50	-50	-50	-50	-50
Tayside	2,150	2,400	2,250	2,000	1,750	1,650	1,600
Western Isles	0	50	50	50	50	100	100

Source: GROS. (2009a)

Table A4 Local Scaling Factors for Fertility and Mortality by NHS Board Areas, Scotland, 2008-Based Projections

	Fertility	***Mortality***					
		Male			***Female***		
		0–59	***60–79***	***80+***	***0–59***	***60–79***	***80+***
Scotland	1.000	1.000	1.000	1.000	1.000	1.000	1.000
NHS board areas							
Ayrshire & Arran	1.074	1.002	1.002	1.014	1.062	1.032	1.047
Borders	1.164	0.747	0.801	1.052	0.819	0.845	1.099
Dumfries & Galloway	1.182	0.828	0.853	0.985	0.934	0.913	0.987
Fife	1.063	0.894	0.883	0.995	0.987	0.938	0.939
Forth Valley	1.064	0.914	0.965	1.050	0.892	0.996	1.063
Grampian	1.041	0.819	0.870	0.949	0.840	0.875	0.992
Greater Glasgow & Clyde	0.962	1.345	1.339	1.094	1.200	1.236	1.053
Highland	1.144	0.930	0.875	0.943	0.975	0.861	0.951
Lanarkshire	1.087	1.107	1.122	1.056	1.078	1.123	1.076
Lothian	0.915	0.842	0.940	0.950	0.883	0.923	0.969
Orkney	1.111	0.987	0.987	0.987	0.869	0.869	0.869
Shetland	1.186	0.829	0.829	0.829	0.813	0.813	0.813
Tayside	1.041	1.037	0.896	0.925	1.018	0.936	0.947
Western Isles	1.158	1.130	1.130	1.130	0.950	0.950	0.950

Source: GROS. (2009a)

Appendix B: Sample of Survey

Please use the back of this questionnaire to write any additional information relating to the following questions

1) Gender ☐ Male ☐ Female

2) Age ☐

3) Marital status

☐ Single Includes individuals who are divorced or widowed

If Single, do you live alone? ☐ Yes ☐ No

☐ Married / Civil Partner Includes individuals who are separated but not divorced and those where the decree absolute has not been granted.

4) Ethnic origin - how would you describe your ethnic origin?

☐ White Scottish	☐ Other white British	☐ White Irish	☐ Other White
☐ Pakistani	☐ Indian	☐ Bangladeshi	☐ Chinese
☐ Other (South) Asian			
☐ African	☐ Caribbean	☐ Other Black Background	
☐ Mixed	☐ Other		

5) Do you consider yourself to have a disability? ☐ Yes ☐ No

6) Do you consider yourself to be in good health? ☐ Yes ☐ No

7) Postcode ☐

8) Highest Education Level ☐

9) Previous occupation ☐

10) Current weekly income ☐

11) What job do you currently do in the voluntary sector?

☐

12) How did you hear about your current position in the voluntary sector?

☐

13) How long have you been volunteering? ☐

14) Are you a member of any other organisations or groups such as church groups etc? ☐ Yes ☐ No

If yes, which ones? ☐

15) How many hours do you volunteer and at what frequency?

Hours ☐ Frequency ☐ per day
☐ per week
☐ per month

16) Which top three would you say best fits your reason for volunteering? (Please indicate by listing the top reason as 1, second best reason as 2 and the third best reason as 3)

☐ Because my friends volunteer
☐ To have companionship
☐ Alleviate your own feelings of loneliness
☐ To help others
☐ I was asked
☐ To pass on my knowledge and skills
☐ To feel useful or productive
☐ To fulfil a moral responsibility
☐ To fulfil a social obligation
☐ To use up spare time
☐ To learn a new skill
☐ To alleviate boredom
☐ To alleviate feelings of guilt
☐ Keeps me fit and healthy
☐ Other: ☐

17) Do you feel there is a proper match between the voluntary work you actually do and the voluntary work you wanted to do? ☐ Yes ☐ No

If the answer is no can you please state why you feel this way?

☐

18) Do you feel you have had enough training for the task you do? ☐Yes ☐No

19) Do you feel that the overall volunteer job you do is within a:

☐ Formal structured environment ☐ Informal structured environment

and are you happy with this structure? ☐ Yes ☐ No

20) Do you receive any financial compensation / reward payment for volunteering for example expenses etc? ☐ Yes ☐ No

If yes, how much ☐ please select the frequency: ☐ per hour
☐ per day
☐ per week
☐ per month

21) Do you think that people that volunteer should be financially compensated / rewarded for voluntary work? (excluding incurred expenses reimbursement)

☐ Yes ☐ No

Appendix C: Intermediaries that support the front line organisations and individuals.

Table C1 Voluntary Intermediaries that help support the front line

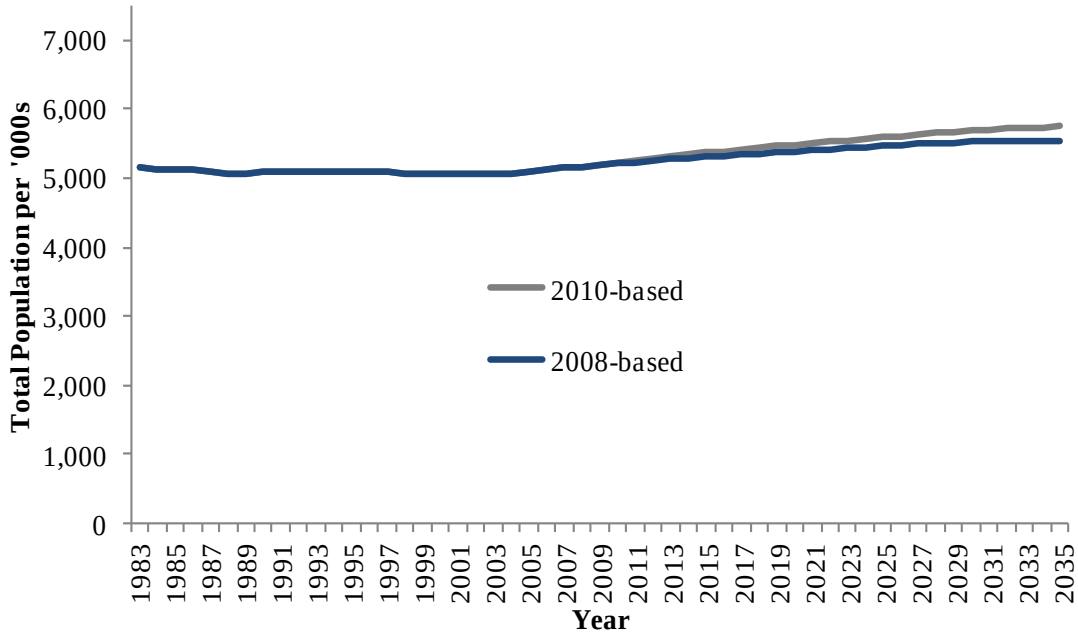
Intermediaries
Age Scotland
Arc Scotland
Archaeology Scotland
Association of British Credit Unions Ltd
Association of Chief Officers of Scottish Voluntary Organisations
Befriending Network Scotland
Black & Ethnic Minority Infrastructure in Scotland
Built Environment Forum Scotland
Cemvo Scotland
Children in Scotland
Citizens Advice Scotland
Coalition of Care and Support Providers in Scotland
Community Development Alliance Scotland
Community Resources Network Scotland
Community Transport Association Scotland
Co-Operation & Mutuality Scotland
COSCA
Development Trusts Association Scotland
Disability Agenda Scotland
Equality Network
Federation of City Farms and Community Gardens
Help the Hospices
HIV Scotland
Inclusion Scotland
Institute Of Fundraising
International Development Education Association of Scotland
Learning Link Scotland
Long-Term Conditions Alliance Scotland
Museums Galleries Scotland
Network of International Development Organisations Scotland
Play Scotland
Poverty Alliance

Relationships Scotland
Scottish Association of Community Hospitals
Scottish Charity Finance Directors Group
Scottish Civic Trust
Scottish Community Alliance
Scottish Community Drama Association
Scottish Council for Single Homeless
Scottish Council for Voluntary Organisations
Scottish Disability Equality Forum
Scottish Drugs Forum
Scottish Environment Link
Scottish Fair Trade Forum
Scottish Federation of Housing Associations
Scottish Independent Advocacy Alliance
Scottish League of Credit Unions
Scottish Mentoring Network
Scottish Out Of School Care Network
Scottish Parent Teacher Council
Scottish Partnership for Palliative Care
Scottish Pre-School Play Association
Scottish Sports Association
Scottish Women's Aid
Senscot (Social Entrepreneurs Network Scotland)
Social Enterprise Scotland
Social Firms Scotland
Surf
Voluntary Action Scotland
Voluntary Arts Scotland
Voluntary Health Scotland
Volunteer Development Scotland
Youth Scotland
Youthlink Scotland

Appendix D: 2008-based and 2010-based Population Projections

The difference in the total population projection between the 2008-based projections and the 2010-based projections can be seen in Figure D1. The population is expected to increase more in the latest projections and by 2035, the difference between the two is expected to be 201,327 more individuals in the Scottish population. This increase is driven by a projected higher level of positive net-migration in the long-term of 17,500 per year (made up from 8,500 UK cross border and 9,000 overseas) from the previous 2008-based projection of 12,000 (made up of 6,500 UK cross border and 5,500 from overseas), as the long-term fertility rate (1.7) has not changed and the mortality assumptions have not been significantly changed, as shown in Table 3.12.

Figure D1 Difference in Population (per '000s) Projection, 2008-based and 2010-based



Source: GROS (2011f)

Table D1 Comparison Between the 2008-Based and 2010-Based Principle Projections and Variants Assumptions

	Assumptions	Long-term Fertility (TFR)		Life Expectancy Male (2033)		Life Expectancy Female (2033)		Long-term Migration	
		2008	2010	2008	2010	2008	2010	2008	2010
Standard Variants	High Variant	1.90	**1.90**	82.8	**83.3**	86.5	**86.7**	+20,500	**+26,000**
	Principle	1.70	**1.70**	80.7	**80.9**	85.2	**85.1**	+12,000	**+17,500**
	Low Variant	1.50	**1.50**	78.6	**78.4**	83.9	**83.5**	+3,500	**+9,000**
Special Case Scenario	Zero Migration	1.70	**1.70**	80.7	**80.9**	85.2	**85.1**	0	**0**

Source: GROS (2009a) and GROS (2011f)

The breakdown of the difference in age structure of the Scottish population between the 2008-based projections and the 2010-based projections is shown in Table 3.13. The largest difference in terms of the change in population over the projected period is found in the younger age groups. The older age groups still show a significantly high increase.

Table D2Projected Population By Age Group, 2008-based Projection and 2010-based Projection

	0–5	*16–29*	*30–44*	*45–59*	*60–74*	*75+*
2008-based Projections	-2%	-7%	-5%	-7%	+33%	+84%
2010-based Projections	**+3%**	**-3%**	**+1%**	**-3%**	**+27%**	**+82%**
Percentage Change	**5%**	**4%**	**6%**	**4%**	**-6%**	**-2%**

Source: GROS (2009a) and GROS (2011f)

Since the differences between the population projections are driven by increase in the migration assumptions, the scenarios using the GROS principle projections take the natural change as a base level and therefore, the 2008-based projections are still a valid representation of Scotland's population to date.