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Social Sciences

Living Longer, Working Longer: Economic activity up-to and beyond the State Pension Age in England

by

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Abstract

With life expectancy rising and the State Pension Age (SPA) increasing, understanding patterns of retirement and drivers of working up-to, and beyond the SPA, is a key policy priority. Academic research has highlighted that demographic, health, socio-economic, geographical and caring characteristics are associated with economic activity in later life. However, research has often examined these associations in isolation as opposed to together. To improve the ability of policy-makers to identify individuals who are most likely to be economically active in later life, further research, which explores individual characteristics and their association with economic activity, was required. This research uses a quantitative approach employing bivariate and multivariate methods to explore the combined relative associations of a number of derived variables from Wave 5 of the English Longitudinal Study of Ageing (ELSA), among male and female individuals who are above and below the SPA.

The results show that factors associated with economic activity in later life vary between individuals who are above or below the SPA, and there are important gender dimensions at play. For example, among individuals who are above the SPA, the factors of age, housing tenure, occupational social class and pension scheme membership are associated with economic activity, whereas among individuals who are below the SPA, a person's self-reported general health (SRGH), reports of a limiting long-standing illness (LLSI), housing tenure, pension scheme membership and caring status were associated with economic activity. Among men, it was age, housing tenure, occupational social class and pension scheme membership which were consistently associated with economic activity, whereas among women, the variables of marital status, reports of a LLSI, housing tenure, pension scheme membership and caring status were significant for economic activity. These findings can help to inform policy-makers in designing legislation in the area of work in later life, as well as retirement and pension provision.

Contents

Contents i

List of tables xi

List of figures xv

DECLARATION OF AUTHORSHIP xxi

Acknowledgements xxiii

Definitions and Abbreviations xxv

1. Chapter 1: Introduction 1

1.1 Introduction and rationale 1

1.2 Ageing population 3

1.2.1 Longevity: Life expectancy at birth 5

1.2.2 The policy context and the concept of retirement 6

1.2.3 Dependency ratios 9

1.3 Extending the working life 12

1.3.1 Longevity: Healthy and disability-free life expectancies and their influence upon economic activity in later life 12

1.3.2 The concept of extending working lives and its influence on dependency ratios 14

1.4 Considerations for the EWLA: A heterogeneous ageing workforce 15

1.5 Research questions 17

1.6 The structure of this thesis 18

2. Chapter 2: Literature Review 21

2.1 Introduction and outline 21

2.2 Demographic characteristics of economic activity up-to and beyond the SPA 22

2.2.1 Age as an individual characteristic of economic activity 22

2.2.1.1 The state pension age (SPA) and its influence upon economic activity among older adults 24

2.2.1.2 Stereotypes of age and the influence they have upon economic outcomes of older adults 28

2.2.1.3 Individual age at time of legislation and its influence on economic activity upon reaching the SPA 30

2.2.1.4 The impact of transitions over the life-course on individuals' decisions to work longer 33

2.2.2 Gender as a determinant of economic activity 39

2.2.2.1 Typical gender roles: Women as caregivers; men as breadwinners....40
2.2.2.2 Type of work undertaken by men and women: Part-time versus full-time working....41
2.2.2.3 Opportunities at work and unequal treatment between men and women....43
2.2.3 Marital status as a determinant of economic activity....45
2.2.3.1 Presence of dependants and their influence upon economic activity up-to and beyond the SPA....46
2.2.3.2 Negotiations surrounding work and managing child and elder-care responsibilities among partners....48
2.2.3.3 Health within the context of a couple and the influence this has for their economic activity in later life....51
2.2.4 Ethnicity as a determinant of economic activity....51
2.2.4.1 Age structure of ethnic populations....52
2.2.4.2 Working patterns of ethnic minority groups....54
2.2.4.3 Education deficits and the influence this has for economic activity in later life....56
2.2.4.4 Household influences on economic activity among ethnic groups....58
2.2.5 Summary of demographic individual characteristics associated with economic outcomes....59
2.3 Health characteristics of economic activity up-to and beyond the SPA....60
2.3.1 The influence of age upon health and its association with economic outcomes....60
2.3.2 Health-risk behaviours and their influence upon economic activity....62
2.3.3 Job demands and their influence upon economic activity up-to and beyond the SPA....68
2.3.4 Gender differences and partnership effects upon health and their influence on economic outcomes.....69
2.3.5 Training opportunities, the importance of timing and the links it has to health....70
2.3.6 Physical health as a determinant of economic activity....72
2.3.6.1 Self-reported general health (SRGH) as a determinant of economic activity....72
2.3.6.2 Activities of daily living (ADLs) & Instrumental activities of daily living (IADLs) and their association with economic activity....73
2.3.6.3 Limiting long-standing illness (LLSI) and its influence upon economic outcomes....73
2.3.7 Psychological health as a determinant of economic activity....74

2.3.7.1 The association of depression and stress with economic outcomes in later life ... 74
2.3.7.2 The association of high and low quality of life (CASP-19) and economic outcomes in later life ... 79
2.3.8 Summary of health characteristics associated with economic outcomes ... 80
2.4 Socio-economic characteristics of economic activity up-to and beyond the SPA ... 81
2.4.1 Housing tenure as a determinant of economic activity ... 81
2.4.2 Car access as a determinant of economic activity ... 83
2.4.3 Education as a determinant of economic activity ... 83
2.4.4 Occupational social class (NS-SEC) as a determinant of economic activity ... 85
2.4.5 Financial assets and their influence upon economic activity ... 86
2.4.6 Pension scheme membership as a determinant of economic activity ... 87
2.4.7 Summary of socio-economic characteristics associated with economic outcomes ... 90
2.5 Geographical characteristics of economic activity up-to and beyond the SPA ... 91
2.5.1 Region as a determinant of economic activity ... 91
2.6 Caring characteristics of economic activity up-to and beyond the SPA ... 93
2.6.1 Caregiving: time and provision and their influence as individual characteristics of economic activity in later life ... 93
2.6.1.1 The influence of providing care upon economic activity up-to and beyond the SPA ... 95
2.6.1.2 Time spent caregiving and the implications this has for economic activity in later life ... 96
2.7 The conceptual framework of this thesis ... 97
2.8 Summary and limitations of the literature on the topic of economic activity up-to and beyond the SPA ... 101
3. Chapter 3: Methodology ... 105
3.1 Introduction ... 105
3.2 Study design ... 105
3.3 Data: The English Longitudinal Study for Ageing (ELSA) ... 107
3.4 Study population ... 110
3.5 Data analysis: Methodology and plan ... 113
3.5.1 Preparing the dataset for analysis ... 114
3.5.1.1 Key measurement concepts and variables ... 116
3.5.1.1.1 Outcome variable ... 117
3.5.1.1.2 Explanatory variables ... 123

3.5.2 Descriptive statistics 145
3.5.2.1 Number of respondents 146
3.5.3 Bivariate analysis 147
3.5.3.1 Correlation matrix: The relationship between explanatory and outcome variables 148
3.5.3.2 Cross-tabulations 155
3.5.3.3 Pearson chi-square test statistic 156
3.5.4 Multivariate analysis 157
3.5.4.1 Binary logistic regression analysis 158
3.6 Weighting 165
3.7 Chapter summary 166
4. Chapter 4: Bivariate Results 169
4.1 Introduction 169
4.2 The association between economic activity in later life and demographic characteristics 170
4.2.1 The association between economic activity in later life and age 170
4.2.2 The association between economic activity in later life and whether a person is above/ below the SPA 171
4.2.3 The association between economic activity in later life and gender 173
4.2.4 The association between economic activity in later life and marital status 176
4.2.5 The association between economic activity in later life and ethnicity 181
4.3 The association between economic activity in later life and health characteristics 183
4.3.1 The association between economic activity in later life and SRGH 184
4.3.1.1 The association between economic activity in later life and SRGH among men and women 186
4.3.2 The association between economic activity in later life and limiting long-standing Illness (LLSI) 188
4.3.2.1 The association between economic activity in later life and LLSI's among men and women 190
4.3.3 The association between economic activity in later life and quality of life (QoL). 192
4.3.3.1 The association between economic activity in later life and QoL among men and women 194
4.4 The association between economic activity in later life and socio-economic characteristics 196

4.4.1 The association between economic activity in later life and housing tenure 196
4.4.1.1 The association between economic activity in later life and housing tenure among men and women 198
4.4.2 The association between economic activity in later life and occupational social class 200
4.4.2.1 The association between economic activity in later life and occupational social class among men and women 202
4.4.3 The association between economic activity in later life and highest educational qualification 204
4.4.3.1 The association between economic activity in later life and highest educational qualification among men and women .. 206
4.4.4 The association between economic activity in later life and car access 208
4.4.5 The association between economic activity in later life and pension scheme membership 210
4.5 The association between economic activity in later life and geographical factors 215
4.5.1 The association between economic activity in later life and region (GOR) 215
4.6 The association between economic activity in later life and caring characteristics 217
4.6.1 The association between economic activity in later life and caring status 218
4.7 Summary and key findings 222
5. Chapter 5: Multivariate Results 227
5.1 Introduction 227
5.2 The odds of being economically active amongst persons aged between *50-74 years old*, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 . 231
5.2.1 The odds of being economically active among *men and women* aged between *50-74 years old*, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 . 231
5.3 The relationship between demographic, health, socio-economic, geographical & caring variables with economic activity, among *men* and *women* who are aged between *50-74 years old*. 237
5.3.1 The odds of being economically active among *men* aged between *50-74 years old*, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 238
5.3.2 The odds of being economically active among *women* aged between *50-74 years old*, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 . 243
5.4 The odds of being economically active amongst persons aged *above the SPA* (60/65-74 years old), by demographic, health,

socio-economic, geographical & caring characteristics: Models 1-5 248
5.4.1 The odds of being economically active among *men and women* aged *above the SPA* (60/65-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 249
5.5 The relationship between demographic, health, socio-economic, geographical & caring variables with economic activity, among *men* and *women* who are aged *above the SPA* (defined as 65 for men, 60 for women) (60/65-74 years old). 254
5.5.1 The odds of being economically active among *men* aged *above the SPA* (65-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 .. 254
5.5.2 The odds of being economically active among *women* aged *above the SPA* (60-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 .. 260
5.6 The odds of being economically active amongst persons aged *below the SPA* (50-59/64 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 265
5.6.1 The odds of being economically active among *men and women* aged *below the SPA* (50-59/64 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 265
5.7 The relationship between demographic, health, socio-economic, geographical & caring variables with economic activity, among men and women who are aged below the SPA (defined as 65 for men, 60 for women) (50-60/64 years old). 270
5.7.1 The odds of being economically active among *men* aged *below the SPA* (50-64 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 .. 271
5.7.2 The odds of being economically active among *women* aged *below the SPA* (50-59 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5 .. 276
5.8 Summary of Multivariate Analysis findings 281
5.8.1 Regressions 1-3: Summary of key findings 281
5.8.2 Regressions 4-6: Summary of key findings 283
5.8.3 Regressions 7-9: Summary of key findings 284
5.9 Chapter Summary 285
6. Chapter 6: Discussion & Conclusions 291
6.1 Revisiting the aim of this thesis 291
6.2 Addressing the Research questions 293
6.2.1 Introduction: Factors associated with economic activity/inactivity outcomes in later life. 294

6.2.2 Research question 1: Factors associated with economic activity among individuals who are above the SPA..... 295
6.2.3 Research question 2: Factors associated with economic activity among individuals who are below the SPA..... 305
6.2.4 Research question 3: The most pronounced differences between persons who are economically active or inactive, above/ below the SPA..... 317
6.2.5 Summary of research question findings 328
6.3 Limitations of the research 337
6.4 Policy implications and recommendations..... 340
6.5 Recommendations for future research 344
Appendices..... 349
Appendix 1: SPA and economic activity status: sample size, unweighted and weighted %'s by ELSA Wave. 349
Appendix 2: Outcome and explanatory variables: original and derived. ... 351
Appendix 3: Preparing the dataset-excluding filter responses: WPDES, ELSA, Wave 5, (2010)..... 353
Appendix 4: Ethics Approval confirmation email..... 354
Appendix 5: Original raw variables and their assigned values accompanied by the derived variables that relate to these original variables. 355
Appendix 6: Details of the creation, recoding and merging of variables conducted by the researcher, ELSA Wave 5 (2010)..... 359
Appendix 7: Variable changes for multivariate analysis 367
Appendix 8: Bivariate analysis: cross-tabulations and chi-square tests completed. 373
Appendix 9: Economic activity among individuals aged 50-74 years old by whether they are above/ below the SPA (%), England, 2010(Table of unweighted N values and weighted percentages relating to Figure 48)..... 374
Appendix 10: Economic activity among individuals aged 50-74 years old by Gender (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 49) 375
Appendix 11: Economic activity among individuals who are above/ below the SPA (50-74 years old) by gender (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 50)..... 376
Appendix 12: Economic activity among individuals aged 50-74 years old by marital status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 51)..... 377
Appendix 13: Economic activity among men and women aged 50-74 years old (above/ below the SPA) by marital status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 52)..... 378
Appendix 14: Ethnicity value counts, ELSA Wave 5, (2010)..... 379

Appendix 15: Economic activity among individuals aged 50-74 years old by ethnicity (%), (England), 2010 380

Appendix 16: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by ethnicity (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 53) 381

Appendix 17: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by SRGH (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 54) 382

Appendix 18: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by SRGH (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 55) 383

Appendix 19: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by LLSI (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 56) 384

Appendix 20: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by LLSI (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 57) 385

Appendix 21: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by CASP-19 (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 58) 387

Appendix 22: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by CASP-19 (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 59) 388

Appendix 23: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by housing tenure (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 60) 390

Appendix 24: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by housing tenure (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 61) 391

Appendix 25: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by occupational social class (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 62) 393

Appendix 26: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by occupational social class (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 63) 394

Appendix 27: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by highest educational qualification (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 64) 395

Appendix 28: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by highest educational qualification (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 65) 396

Appendix 29: Economic activity among individuals aged 50-74 years old by car/van access (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 66)..... 398

Appendix 30: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by car/van access (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 67)..... 399

Appendix 31: Economic activity among individuals (aged 50-74 years old) by pension scheme membership status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 68)..... 401

Appendix 32A: Pension scheme membership status among individuals (aged 50-74 years old) by economic activity status (%), England, 2010 (see Appendix 32B for table of unweighted N values and weighted percentages)..... 402

Appendix 32B: Pension scheme membership status among individuals (aged 50-74 years old) by economic activity status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Appendix 32A) 403

Appendix 33: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by pension scheme membership status (%), (England), 2010 (Table of unweighted N values and weighted percentages relating to Figure 69) 404

Appendix 34A: Pension scheme membership status among men and women (above/ below the SPA) by economic activity status (%), England, 2010 (see for Appendix 34B for table of unweighted N values and weighted percentages)..... 405

Appendix 34B: Pension scheme membership status among men and women (above/ below the SPA) by economic activity status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Appendix 34A)..... 406

Appendix 35: Economic activity among individuals aged 50-74 years old by Region (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 70) 408

Appendix 36: Economic activity among individuals aged 50-74 years old by caring status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 71)..... 409

Appendix 37: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by caring status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 72)..... 410

Appendix 38: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by caring status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 73) 411
Appendix 39: Chi-square test significance values, ELSA Wave 5, when cross-tabulated with the outcome variable "economic activity" among respondents who are above/ below the SPA: All respondents, men-only, women-only 413
Appendix 40: Variables and their categories with accompanying significance levels: Model 5 416
Appendix 41: Regressions 1-9: Significant and insignificant variables: 422
Appendix 42: Variable significance: Regressions 1-9 423
Appendix 43: Summary of statistically significant variables across the regressions (1-9) 424
Appendix 44: Number of respondents per category for the derived variables of: 'Region' and 'Ethnicity', ELSA (2010) 425
Bibliography 427

List of tables

Table 1: Life expectancy, men and women by age, (England and Wales), 1901-2002 8

Table 2: Period life expectancy, healthy life expectancy and disability-free-life expectancy in years at age 65, by sex (UK, England, Wales, Scotland, and Northern Ireland), 2008 13

Table 3: Legal retirement age and effective age of exit for the active population (OECD and European workforce), 2002-2007 24

Table 4: Cohort differences in average age workers begin to plan for retirement across the period of 1923-1945, (America) 71

Table 5: Core and Non-Core member respondent frequencies of sample, ELSA, Waves 1-5, (2002-2010) 111

Table 6: Analytical sample and Sample group frequencies, ELSA, Waves 1-5, (2002-2010) 113

Table 7: Outcome & explanatory variables..... 115

Table 8: Comparing the number of respondents per category for the original [wpdes] variable and the newly derived [DV_economicactivity] variable, (Table of unweighted N values, and weighted percentages), ELSA (2010). 120

Table 9: Comparing the number of respondents per category for the original [wpdes] variable and the newly derived [DV_economicactivity] variable, while also controlling for SPA. ELSA (2010) 121

Table 10: Education category coding 138

Table 11: Respondent Pension Scheme membership answer combinations possible (with corresponding unweighted N value and weighted percentage) 141

Table 12: Respondent Pension Scheme membership answer combinations merged (with corresponding unweighted N value and weighted percentage) 142

Table 13: Number of respondents by economic activity status and gender, (ELSA, Waves 1-5) (2002-2010) 147

Table 14: Correlation matrix of explanatory and outcome variables, among individuals who are above the SPA (men and women) (ELSA, Wave 5) (2010)..... 152

Table 15: Correlation matrix of explanatory and outcome variables, among individuals who are below the SPA (men and women) (ELSA, Wave 5) (2010)..... 153

Table 16: Binary logistic outcome variable 160

Table 17: Modelling strategy 163

Table 18: Mean age of economically active and inactive individuals, aged 50-74 years old, (England), 2010 171

Table 19: Mean age of individuals who are above/ below the SPA economically active/inactive, (England), 2010 173

Table 20: Regressions 1-9: details of the respondents used 231

Table 21: Binary logistic regression 1: Odds ratios of being economically active among persons (men and women) who are aged between 50-74 years old, by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010..... 232

Table 22: Binary logistic regression 2: Odds ratios of being economically active among men who are aged between 50-74 years old, by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010..... 239

Table 23: Binary logistic regression 3: Odds ratios of being economically active among women who are aged between 50-74 years old, by

demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010 244

Table 24: Binary logistic regression 4: Odds ratios of being economically active among individuals (men and women) who are above the SPA (60 years old for women, 65 years old for men, cut off age of 74 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010. 250

Table 25: Binary logistic regression 5: Odds ratios of being economically active among men who are above the SPA (65-74 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010. 256

Table 26: Binary logistic regression 6: Odds ratios of being economically active among women who are above the SPA (60-74 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010. 261

Table 27: Binary logistic regression 7: Odds ratios of being economically active among individuals (men and women) who are below the SPA (50-59 years old for women, 64 years old for men) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010. 266

Table 28: Binary logistic regression 8: Odds ratios of being economically active among men who are below the SPA (50-64 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010. 272

Table 29: Binary logistic regression 9: Odds ratios of being economically active among women who are below the SPA (50-59 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010. 277

Table 30: Summary of statistically significant variables across the regressions (1-3). 282

Table 31: Summary of statistically significant variables across the regressions (4-6). 283

Table 32: Summary of statistically significant variables across the regressions (7-9)..... 284

Table 33: Statistical significance across the regressions of model of best fit. 286

Table 34: Summary of statistically significant variables across respondents 288

Table 35: Significant and not significant independent variables among respondents who are above/ below the SPA, by gender, ELSA 2010. 327

List of figures

Figure 1: Proportion of population 60+ years old, (worldwide), 1950-2050.... 3

Figure 2: Population pyramid, men and women, (UK), mid-2012 compared to mid-2001..... 4

Figure 3: Life expectancy at birth, by gender, (UK), 1901-2021..... 5

Figure 4: Old-age dependency ratio (DR), (UK), 1971-2051..... 10

Figure 5: Age structure and demographic dependency ratio (EU-27), 2010 and 2015 11

Figure 6: Number of years of life expectancy, healthy life expectancy and disability-free life expectancy at 65 by gender (UK), 2008 13

Figure 7: Projected dependency ratio-number of working age population to each person of SPA, (UK and constituent countries), 2012-2037... 15

Figure 8: Rates of economic activity beyond the SPA (men)..... 23

Figure 9: Rates of economic activity beyond the SPA (women) 23

Figure 10: Employed, retired and other not employed persons, aged 50-69 (thousands of persons), EU-28, 2012 26

Figure 11: Average age of labour market withdrawal by sex (1984-2012), UK27

Figure 12: Life expectancy and healthy life expectancy, men and women, (UK), 1981-2001 30

Figure 13: Average life-course employment trajectory of twelve five-year birth cohorts: women aged 15-74, (UK), 1862-1976. 32

Figure 14: Average life-course employment trajectory of twelve five-year birth cohorts: men aged 15-74, (UK), 1862-1976..... 32

Figure 15: Average age of woman at birth and marriage, (England and Wales), 1938-2008 34

Figure 16: Employment rates (%) for men and women by individual year of age, (UK), 2013 35

Figure 17: Age specific employment probabilities by gender and the presence of young children (0-4 years old) for ages 16-46, (UK), 1991-2001 36

Figure 18: Average number of live-born children, by age 30 and completed family size by year of birth of woman, (England and Wales), 1920-1980..... 37

Figure 19: Median total annual earnings from employment by age and gender, (UK), 2013 38

Figure 20: Employment rates for men and women living with and without dependent children by age group, (UK), April-June 2013 40

Figure 21: Economic activity by sex and age (%), (UK), April-June 2011..... 42

Figure 22: Occupations by sex among usual residents aged 16-74 in employment, (UK), 2011 45

Figure 23: Population estimates (ages 16+) by marital status, age group and sex, 2014, England and Wales..... 48

Figure 24: Economic activity rates by gender, (Great Britain), 1971-2006 49

Figure 25: Ethnic groups, (England and Wales), 2011..... 52

Figure 26: Age distribution for White Groups, (England and Wales Census), 2011..... 53

Figure 27: Age distribution for Mixed Ethnic Groups, (England and Wales Census), 2011 53

Figure 28: Employment and inactivity rates by ethnic group, (UK), 2008 54

Figure 29: Working-age adults in London not in paid work by gender, ethnicity and type of non-paid work status, (London), 2009-2011..... 55

Figure 30: Average net weekly pay in main job (£ per week) men, by ethnic group, (Britain), 1994-2000 57

Figure 31: Average net weekly pay in main job (£ per week) women, by ethnic group, (Britain), 1994-2000 57

Figure 32: Adult cigarette smoking level by household occupational social class (%), (England), 2001-2009 63

Figure 33: Adult cigarette smoking levels by sex (%), (Great Britain), 1974-2009 64

Figure 34: Adult obesity (BMI >30kg/m^2) and overweight (BMI >25kg/m^2) percentages by sex (%), (England), 1993-2009 65

Figure 35: Prevalence of overweight and obesity by age group, men and women (%), (England), 2009 66

Figure 36: Levels of obesity, by gender and age group (%), (Scotland), 1995, 1998 and 2005 67

Figure 37: Retirement plans by age group, (US), 2002-2003 76

Figure 38: Percentage of women aged 55-64 years old who ever had a pension, by pension type, (US), 1994 and 2004 77

Figure 39: Phases and features of the transition cycle 78

Figure 40: Tenure by age, (London, England), 2011 82

Figure 41: Number (in thousands) of employed persons and recipients of old-age pensions, aged 50-69, EU-28, 2012 89

Figure 42: The ageing of the UK: Percentage of total population aged 65+, (UK), 2010. 91

Figure 43: Older-worker employment rates by UK region, (UK), 2012/2011 . 92

Figure 44: Number of hours provided of unpaid care per week, by gender and age (%) (England), 2011 97

Figure 45: Conceptualising individual characteristics associated with economic outcomes among older adults 99

Figure 46: Operationalisation to derive the SRGH variable. 131

Figure 47: Operationalisation to derive the Pension Scheme membership variable..... 140

Figure 48: Economic activity among individuals 50-74 years old, by whether they are above/ below the SPA (%), (England), 2010 172

Figure 49: Economic activity among individuals aged 50-74 years old, by gender (%), (England), 2010 174

Figure 50: Economic activity among individuals who are above & below the SPA by gender (%), (England), 2010..... 175

Figure 51: Economic activity among individuals 50-74 years old, by marital status (%), (England), 2010..... 177

Figure 52: Economic activity among individuals (men, women, men and women) aged 50-74 years old (above/ below the SPA) by marital status (%), (England), 2010..... 179

Figure 53: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by ethnicity (%), (England), 2010..... 182

Figure 54: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by SRGH (%), (England), 2010..... 185

Figure 55: Economic activity among men and women aged above/ below the SPA by SRGH (%), (England), 2010 187

Figure 56: Economic activity among individuals aged 50-74 years old (above/ below the SPA), by LLSI report status (%), (England), 2010 189

Figure 57: Economic activity among men and women 50-74 years old (above/ below the SPA), by LLSI report status (%), (England), 2010 191

Figure 58: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by QoL score (CASP-19) (%), (England), 2010..... 193

Figure 59: Economic activity among men and women, above/ below the SPA by QoL score (CASP-19) (%), (England), 2010 195

Figure 60: Economic activity among individuals aged 50-74 years old by housing tenure (%), (England), 2010..... 197

Figure 61: Economic activity among men and women, above/ below the SPA, by housing tenure (%), England, 2010..... 199

Figure 62: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by occupational social class (%), (England), 2010. 201

Figure 63: Economic activity among men and women aged above/ below the SPA by occupational social class (%), (England), 2010..... 203

Figure 64: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by highest educational qualification (%), (England), 2010 205

Figure 65: Economic activity among men and women aged above/ below the SPA by highest educational qualification (%), (England), 2010 207

Figure 66: Economic activity among individuals (aged 50-74 years old) by car access status (%), (England), 2010 208

Figure 67: Economic activity among men and women who are above/ below the SPA by car access (%), (England), 2010..... 209

Figure 68: Pension scheme membership status among individuals aged 50-74 years old, by economic activity (%), (England), 2010..... 211

Figure 69: Pension scheme membership status among individuals (above/ below the SPA) by economic activity (%), (England), 2010..... 213

Figure 70: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by government office region (%), (England), 2010 216

Figure 71: Economic activity among individuals (50-74 years old) by caring status (%), (England), 2010 219

Figure 72: Economic activity among men and women (50-74 years old) by caring status (%), (England), 2010..... 220

Figure 73: Economic activity among men and women who are above/ below the SPA, by caring status (%), (England), 2010..... 221

Figure 74: Illustration of Regressions 1-9 and the sub-sample and Research question they refer to. 229

Figure 75: Factors associated with economic activity among men and women who are above the SPA: Outcome of study findings 331

Figure 76: Factors associated with economic activity among men who are above the SPA: Outcome of study findings 332

Figure 77: Factors associated with economic activity among women who are above the SPA: Outcome of study findings 333

Figure 78: Factors associated with economic activity among men and women who are below the SPA: Outcome of study findings 334

Figure 79: Factors associated with economic activity among men who are below the SPA: Outcome of study findings 335

Figure 80: Factors associated with economic activity among women who are below the SPA: Outcome of study findings 336

DECLARATION OF AUTHORSHIP

I, Nesta Jayne Victoria Caiger

declare that the thesis entitled

'Living Longer, Working Longer: Economic activity up-to and beyond the State Pension Age in England'

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- none of this work has been published before submission

Signed: ……..

Date:……

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My PhD is dedicated to my Nan, 'Emy' Rose Leat.

Definitions and Abbreviations

-2LL	-2 Log-likelihood
-2LLR	-2 Log-Likelihood Ratio Statistic
ADL	Activities of Daily Living
APS	Annual Population Survey
BHPS	British Household Panel Survey
BME	Black and Minority Ethnic
BMI	Body Mass Index
CAD	Cumulative Advantage-Disadvantage hypothesis
CAPI	Computer Assisted Personal Interview
CASP-19	Quality of Life (also abbreviated to QoL) (C=Control, A=Autonomy, S=Self-realisation, P =Pleasure)
df	Degrees of freedom
DoH	Department of Health
DR	Dependency ratio
DWP	Department for Work and Pensions
Econ.	Economic
ELSA	English Longitudinal Study of Ageing
ERGO	Ethics and Research Governance Online
EWLA	Extending Working lives Agenda
FALS	Family Assistance Longitudinal Study
FWLS	Family and Working Lives Survey
GOR	Government Office Region
HRS	Health and Retirement Study
HSE	Health Survey for England
IADL	Instrumental Activities of Daily Living
IFS	Institute for Fiscal Studies

ILC	International Longevity Centre
LA/HA	Local Authority/ Housing Association
LFS	Labour Force Survey
LLSI	Limiting Long-Standing illness
LR	Likelihood Ratio
MLE	Maximum Likelihood Estimation
NS-SEC	National Statistics Socio-economic Classification (however also referred to as 'occupational social class')
OECD	Organization for Economic Cooperation and Development
ONS	Office of National Statistics
OR	Odds Ratio
PSM	Pension Scheme Membership
P-values	Probability Values
QoL	Quality of Life
R^2	R-Square
RQ	Research question(s)
SEG	Socio-Economic Gradient
SES	Socio-Economic Status
SHARE	Survey of Health, Ageing and Retirement in Europe
SPA	State Pension Age
SPSS	Statistical Package for the Social Sciences
SRGH	Self-Reported General Health
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UK	United Kingdom
UKHLS	United Kingdom Household Longitudinal Study
WHO	World Health Organisation

1. Chapter 1: Introduction

1.1 Introduction and rationale

The United Kingdom (UK) has witnessed marked increases in life expectancy within the past century, contributing to population ageing (United Nations, 2013);(Lloyd-Sherlock et al., 2012a). Population ageing poses significant implications for the country's labour supply (Department for Work and Pensions and Baroness Altman, 2015) and the numbers of pension-eligible individuals (Bonoli and Shinkawa, 2005). As these individuals increase in number, the government and policy-makers recognise there is a growing urgency to encourage people to extend their working lives if the welfare state is to meet the demands to finance old-age pensions (Vickerstaff et al., 2008;Wood et al., 2010). Additionally, it has been acknowledged that many older adults *want* to be economically active as it provides them with a sense of worth, purpose and improves their well-being (McMunn et al., 2009). Through moving away from a 'cliff edge' perspective of retirement and work, and instead facilitating opportunities to extend working lives among older adults, the country's labour supply can be retained. Furthermore, extending working lives can help to sustain a competitive labour market as the valuable skills of older-workers brought by their past experience can be preserved (Altmann, 2015;Department for Work and Pensions and Baroness Altman, 2015).

Identifying individual characteristics associated with retirement is an established area of study (Kotecha et al., 2010;Morrell and Tennant, 2010). However, less research has explored which individual characteristics are associated with *economic activity* when approaching, or having reached, the State Pension Age (SPA) (the age at which a person becomes eligible for a state pension); providing this thesis with an opportunity to contribute to an under-researched field of interest (Nussbaum and Coupland, 2008). Economic activity among older adults, has received increasing attention as an area of study due to recent and continuous alteration in legislation surrounding the welfare system and social security, in particular that of pension provisions, often referred to as the "Extending Working lives Agenda" (referred to here on as the *EWLA*) (Phillipson and Smith, 2006;Sigg and De-Lugi, 2007;Barrell et al., 2011;Phillipson, 2013). Although this thesis focuses on the English context,

economic activity patterns of older adults is a topic of interest globally, whereby many points discussed also apply overseas.

Many factors have been identified as influencing economic outcomes in later life. Demographic, health and socio-economic characteristics are the most commonly quoted (Banks et al., 2006;Phillipson and Smith, 2006;Dini, 2009). Through identifying individual characteristics associated with economic outcomes among older adults, characteristics typical of persons who are economically active or inactive at such ages can be identified. Such understandings have the potential to help future policy target individuals who are less likely to be economically active and to provide them with encouragement and opportunities which enable them to extend their working lives (Redden, 2013).

This study will employ secondary data analysis of the survey, the 'English Longitudinal Study of Ageing' (ELSA). In particular, Wave 5 (2010) will be used, and where relevant, details of Waves 1-4 (2002-2008) will also be examined[1].

The unique contributions of the present research are threefold. To begin, insight into the characteristics of persons both 'below' and 'above' the SPA in England, will be ascertained and compared. Secondly, this research uses data collected during a unique period of policy transition. This enables the present research to examine patterns of economic activity among persons who are above/ below the SPA during this period of flux (notably, disentangling the direct effect of policies on individuals' behaviour is not possible from this research). Finally, this research explores a wide array of variables to examine their associations with economic outcomes among individuals who are above/ below the SPA. Evidently, the majority of previous research explores characteristics singularly, whereas the present research examines associations of characteristics when combined.

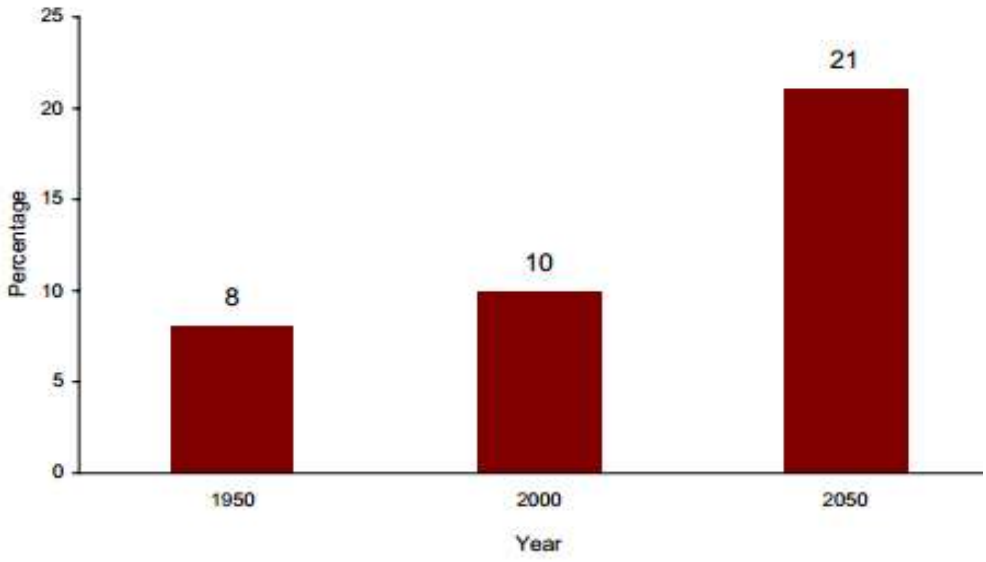
[1] Wave 6 (2012) became available at the later stages of this research. However, the researcher was advised to continue to focus upon Wave 5 due to the researcher's familiarity and expertise in Wave 5 coupled with the fact that exploratory research showed virtually no differences in the patterns of Wave 6 (further discussed in section 3.3). Waves 1-4 (2002-2008) were not the focus of the present study. Initially the researcher had intended to compare earlier Waves to the newer Waves however, preliminary analysis at the start of the study revealed that the patterns in the data were often very alike without much change. For this reason, the researcher opted to use only Wave 5, but to include detailed analysis to ensure depth to the findings. The sample numbers are provided for Waves 1-4 for reference (section 3.5.2).

Extending working lives is a broad subject area, however the focus of this research concentrates on economic outcomes among persons who are above/ below the SPA (namely those between 50-74 years old). This chapter is split into the following sections. Firstly, a background context will be provided. In particular, the influence of population ageing and the EWLA will be discussed (sections 1.2, 1.3 and 1.4). The research questions of this thesis and the methodology used to help answer these questions are also outlined (section 1.5). The final part of this chapter will present an overview, discussing the content of the upcoming chapters (section 1.6).

1.2 Ageing population

Population ageing is defined by the United Nations (UN) as the process whereby persons over the age of 65 represent a 7-14% proportional share of the total population (United Nations, 2002a). The UN defines a society as "aged" once this proportion exceeds 14%, and "hyper-aged" when 21% or more of the population are 65 years old or over (Arshad and Bhat, 2013;The Wisdom Years, 2014). Figure 1 reflects how the proportion of older adults (defined as aged 60+), increased worldwide between 1950-2000. Additionally, this figure estimates projections for 2050, and finds that these proportions continue to grow, demonstrating that the population is ageing.

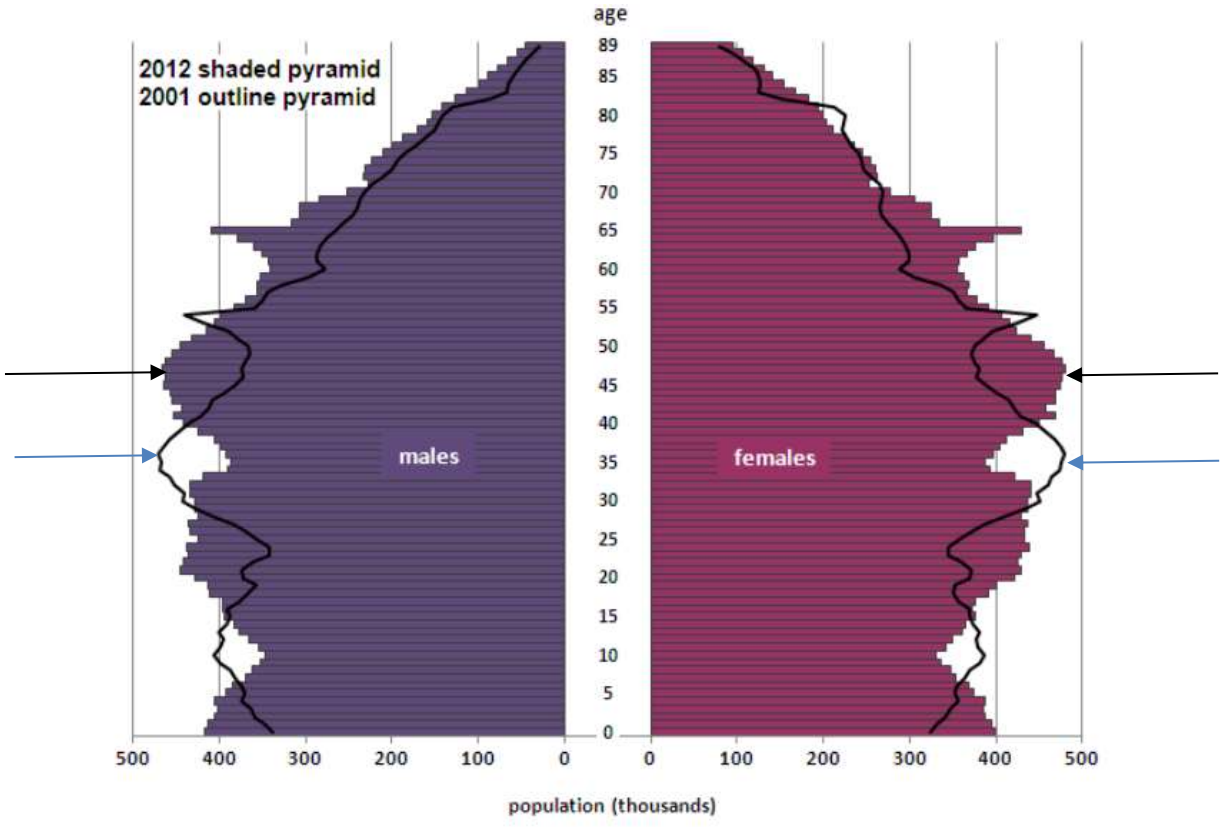
Figure 1: Proportion of population 60+ years old, (worldwide), 1950-2050



Source: (United Nations, 2002b)

A ‘cohort’ is defined as a group of individuals who share a temporal experience; including common life events such as one’s year of birth, or, exposure to legislation change (ONS, 2013b). Literature commonly uses the term *'cohort effect'* in explaining why persons from the same cohort are often similar and share characteristics as a group (Willets, 2004). The UK “baby-boomers” are a cohort, defined as persons born between 1946-1964 (Evandrou and Falkingham, 2000;Gee and Gutman, 2000). Figure 2 demonstrates using a population pyramid how the UK baby-boomer cohort appears as a ‘bulge’ compared to rest of the population. The blue arrows highlight the bulges for men and women in 2001, while the black arrows show how these bulges progress up the pyramid to 2012, while maintaining their shape.

Figure 2: Population pyramid, men and women, (UK), mid-2012 compared to mid-2001



Arrows=baby-boomers 2012/2001 female and male
Source: (ONS, 2013f)

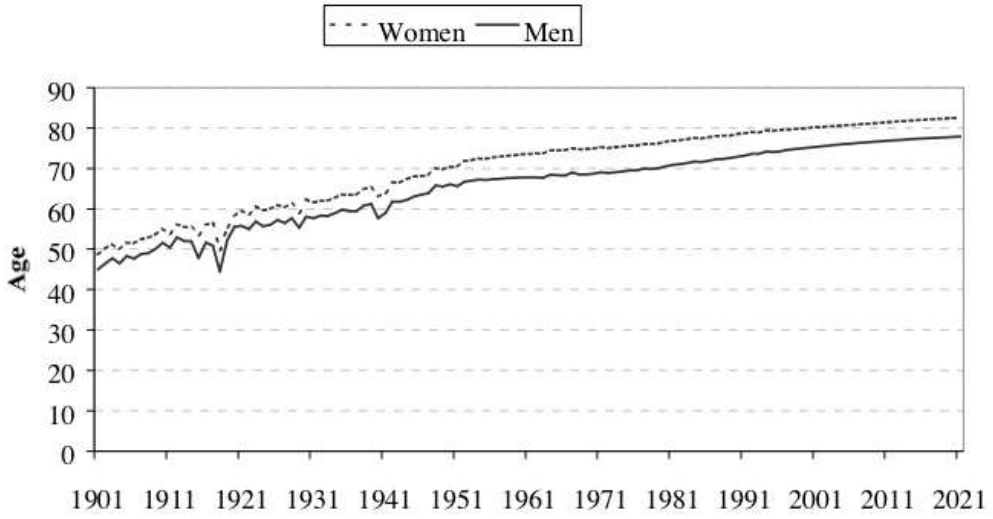
Figure 2 illustrates how the population has grown older, highlighted by the shift in population structure across the period of 2001 and 2012, supporting evidence of population ageing (Redden, 2013).

1.2.1 Longevity: Life expectancy at birth

The large number of baby-boomers who are presently growing older, underpins many of the contemporary social, economic and political concerns surrounding ageing populations (United Nations, 2013). It is argued that the baby-boomers' large cohort size, although principally a result of a post-war fertility boom, is due to improved life expectancy (ONS, 2013f). This was illustrated in Figure 2, whereby the baby-boomer bulge continues towards the top of the pyramid, while previous cohorts have tended to die before reaching such ages, reflected by the smaller number of persons towards the top of the pyramid in 2001.

To help demonstrate these life expectancy increases across cohorts, Figure 3 provides a detailed illustration of the life expectancy estimates of persons at birth. Examining this figure, it becomes apparent that the baby-boomers are likely to live past 65 years old and will contribute towards an 'aged society' (in line with the UN definition- see section 1.2) (Arshad and Bhat, 2013;The Wisdom Years, 2014).

Figure 3: Life expectancy at birth, by gender, (UK), 1901-2021



Source: (Hicks and Allen, 1999)

Figure 3 shows a general increase in life expectancy from 1901, however it appears that this trajectory was most stable beyond the 1940s. Interestingly, this timing coincides with the publication of The Beveridge Report (1942), a document which set about implementing the philosophy of welfare provision "from the cradle to the grave" (Drakeford, 1998). Many researchers identify The Beveridge Report to have given rise to a golden age of welfare (Esping-Andersen, 1996;Victor, 2005;Willetts, 2010). It was during this golden age, that factors labelled as responsible for many of the positive changes, such as improvements in health care and medicine, unemployment insurance, pensions and other benefits including free tuition for university, were introduced (Hauss, 2011). This report was implemented during the very early years of the baby-boomers' lives, thus it has been argued that the baby-boomers are among those who have benefitted most, living through the golden era (Willetts, 2010). The underpinning ideas of this report, led to the principle of state intervention becoming more firmly established, shaping attitudes towards social policy, reflected by the sociologist Marshall's quote "It is generally agreed that…the overall responsibility for the welfare of the citizens must remain with the state" (Marshall, 1965:pg 97;The National Archives, 2003). Attitudes towards working and pensions were similarly affected, as shall be discussed further in the next sub-section (McNair, 2006).

1.2.2 The policy context and the concept of retirement

William Beveridge, who authored the revolutionary Beveridge Report, had anticipated that policy changes suggested by the report, would lead to a combination of declining birth-rates and increasing life expectancy (Bowlby, 2010). He also acknowledged that these changes could pose future challenges to pension provisions and retirement (Bowlby, 2010). Originally, the Beveridge Report had suggested that retirement should be flexible however, the Attlee government of that period disagreed with this idea and it was not enforced (Bowlby, 2010).

Before this report, the concept of retirement was relatively new (coming about in the 19th century) (Neugarten and Neugarten, 1996). It was defined as the fixed point in an individual's life when they leave work (Costa, 1998). Pension policies were only adopted by large private companies and the civil service,

with the intention to provide a state pension to help prevent those on low incomes from falling into poverty in old-age (Zaidi, 2010). The SPA was originally defined as 70+ years old (Nussbaum and Coupland, 2008). Life expectancy estimates at birth in England during 1901-1910, were on average 48.5 years old for men and 52.4 years old for women (see Table 1), suggesting that for many, the SPA was never reached (Gallop, 2012). In 1925 policy changed and the Contributory Pensions Act was introduced (ONS, 2011a). This Act implemented a contributory state pension for manual workers and those earning under a defined income. Interestingly, the SPA was decreased to 65 years old by this piece of legislation (DWP, 2008). Life expectancy during this period however, remained lower than the age of eligibility for a State Pension (see Figure 3 and Table 1). The final piece of legislation of this period to implement change surrounding state pension eligibility and the SPA, came in the form of the Old Age and Widows' Pensions Act 1940, which introduced different SPAs for men and women (65 and 60) (Taylor, 2002;Vickerstaff et al., 2004;Flynn et al., 2014). The Old Age and Widows' Pensions Act 1940, was implemented during a period where life expectancy at birth was reported to be 57.79 years old for men, and 63.39 years old for women (ONS, 2012). Given these estimates are based on approximations from individual's birth, it remained unlikely that those who were nearing the SPA in 1940 would live to reach the SPA (Taylor, 2002;Vickerstaff et al., 2004;Flynn et al., 2014). Table 1 reflects how life expectancy among men and women at different ages throughout the life course changed across the period of 1901-2001. Table 1 also provides insight into the average life expectancies that these individuals could expect, from when legislation surrounding the SPA was first introduced.

Table 1: Life expectancy, men and women by age, (England and Wales), 1901-2002

Males

Year	Total life expectancy on reaching age shown				
	At birth	At age 15	At age 45	At age 65	At age 80
1901-10	48.5	62.3	68.3	75.8	84.9
1910-12	51.5	63.6	68.9	76.0	84.9
1920-22	55.6	65.1	70.2	76.4	84.9
1930-32	58.7	66.2	70.5	76.3	84.7
1940-42					
1950-52	66.4	69.4	71.5	76.7	84.9
1960-62	68.1	70.3	72.1	77.0	85.2
1970-72	69.0	70.8	72.4	77.2	85.5
1980-82	71.0	72.3	73.7	78.0	85.8
1990-92	73.4	74.3	75.7	79.3	86.4
2000-02	75.9	76.6	78.0	81.0	87.1

Females

Year	Total life expectancy on reaching age shown				
	At birth	At age 15	At age 45	At age 65	At age 80
1901-10	52.4	65.1	70.5	77.0	85.4
1910-12	55.4	66.4	71.3	77.4	85.5
1920-22	59.6	68.1	72.7	77.9	85.6
1930-32	62.9	69.3	73.3	78.1	85.5
1940-42					
1950-52	71.5	74.0	75.8	79.3	85.8
1960-62	74.0	75.9	77.1	80.3	86.4
1970-72	75.3	76.8	77.9	81.1	87.0
1980-82	77.0	78.0	79.0	82.0	87.5
1990-92	79.0	79.7	80.5	83.1	88.4
2000-02	80.6	81.1	81.9	84.1	88.7

Source: (Gallop, 2012)

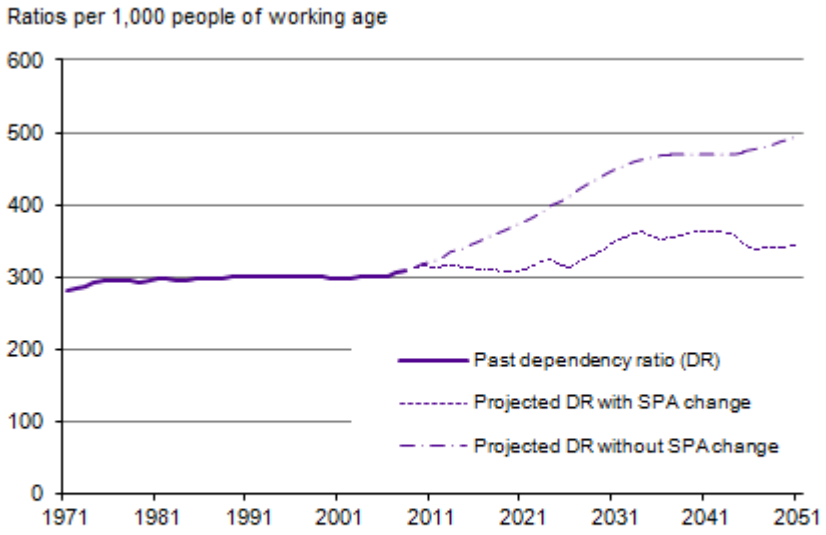
The increases in life expectancy after the implementation of the Beveridge Report (i.e. 1942 onwards) (see Table 1), led to increased confidence in reaching the SPA and thus the concept of retirement was extended to include the expectation for having some "free time" towards the end of the lifecycle (Victor, 2005). Although during the 1970's policy-makers began to recognise that providing a state pension for persons living longer than originally anticipated was unsustainable, the scale of the challenge was underestimated (Thurley, 2012). In fact, the element of "free-time" within the concept of retirement, seemed to be fortified during 1970-1990, whereby the government encouraged early exits from employment through making special retirement schemes, unemployment-related transfer schemes, disability pensions and occupational pensions, more accessible (Ippolito, 1990;Thurley, 2012) . This provided many people with fiscal incentives to retire before the statutory

retirement age (OECD, 2011). The effectiveness of fiscal incentives encouraging older adults to leave the labour market, can be demonstrated by the evident labour force participation rate declines. For example, in the U.K., the labour force participation rates among men aged 55-64 years old, fell from 91% in 1970, to 68% by 1985 (Kolberg, 1991;Vierck and Hodges, 2005). However, policy now recognises that encouraging early exits is no longer viable as is further discussed by the next section (DWP, 2010b).

1.2.3 Dependency ratios

Life expectancy at birth in 1990-1992, had reached 73.4 years old for men and 79.0 years old for women, illustrating how SPA legislation, originally set to an age which exceeded average life expectancy, now fell significantly below such estimates (see Table 1) (Buckley, 2011;The Kings Fund, 2012;ONS, 2012b-a). Researchers commonly use dependency ratios to help provide a numerical representation of persons who are dependent on the rest of the population. Commonly, age is used as an indicator to help define dependency ratios. However, there are several types of dependency ratio in social science research (e.g., youth, total, and labour force dependency ratios) (Pfau, 2006). The old-age dependency ratio is the focus here. Old-age dependency ratios, examine the ratio of working age persons (assumed to be net providers) (16-64 years old), to economically dependent persons (or net consumers) (defined frequently as persons aged 15> and 65+ years old) (United Nations, 2006). Primarily, dependency ratios attempt to demonstrate the ratio of persons who are anticipated to pay the largest proportion of tax (the economically active), compared to those who are regarded as dependants (the economically inactive) and in larger receipt of government spending such as pensions and health care, supported with taxes paid by those who are economically active (Pettinger, 2014). However, notably, dependency ratios fail to acknowledge that not everyone aged 16-64 years old is a net provider. For instance, some of these individuals are unemployed or in higher education, or retire early, etc. Similarly, dependency ratios do not account for the fact that not every 65+ year-old is a net consumer (for instance, they may be employed or semi-retired, etc.). Despite this, dependency ratios remain useful for providing a general overview of persons most likely to be net providers and net consumers (see Figure 4).

Figure 4: Old-age dependency ratio (DR), (UK), 1971-2051

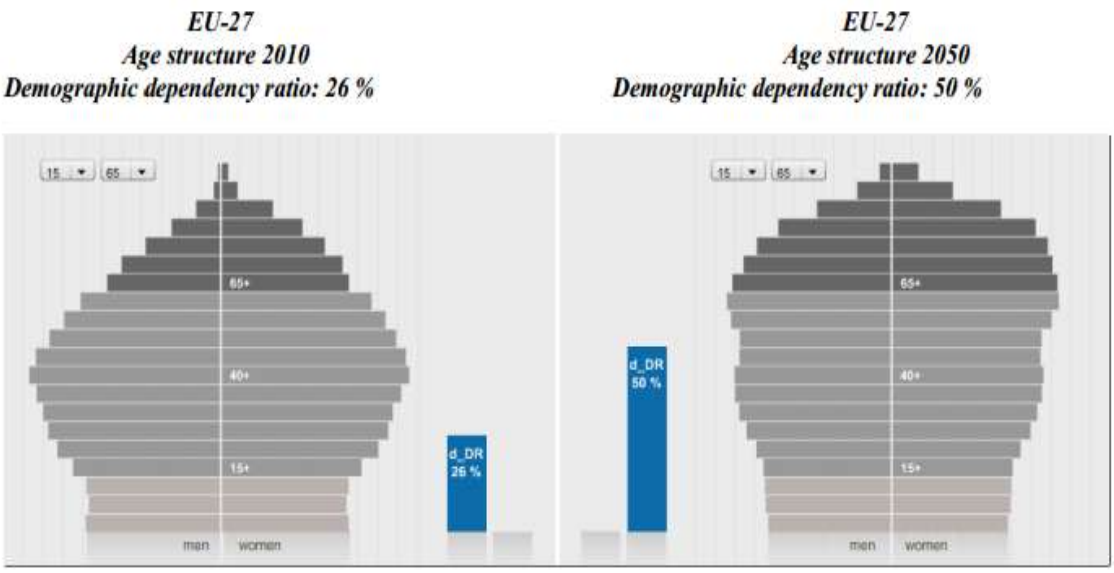


1 Working age population is defined as individuals aged 16 to SPA.
2 Ratios between 1971 and 2008 are based on mid-year population estimates. From 2009 onwards, ratios use 2008-based mid-year population projections.

DR=Dependency ratio
Population estimates and 2008-based principal projections, ONS.
Source: Figure 2.2 in ONS (2010)

Considering the line labelled as "Projected DR without SPA change" seen within Figure 4, (where dependency ratio is denoted as *DR*), the influences of increased longevity and the large baby-boomer cohort can be more clearly pictured. Evidently, the previously stable dependency ratio shown by the line labelled as "Past dependency ratio (DR)" in the figure, is expected to experience a significant increase in the number of dependants, if the SPA does not change. This can be further reflected though a population pyramid (Figure 5), which uses demographic dependency ratios to demonstrate how the population structure shifts from a pyramid shape towards a beehive appearance (Victor, 2005).

Figure 5: Age structure and demographic dependency ratio (EU-27), 2010 and 2015



Source: Wöss (2010)

Figure 5 helps to demonstrate how improved longevity has led to large increases in old-age dependency ratios (Vincent and Velkoff, 2010). As was the case in Figure 4, large numbers of older adults are often portrayed negatively by literature, often seen as a threat to society. However, there is a wealth of evidence to suggest that many older adults continue to work into later life acting as net providers, whilst there are many younger adults who are unemployed and therefore are considered to be net consumers (Banks et al., 2008b).

Returning to the findings of Figure 4 it is interesting to examine the line labelled "Projected DR with SPA change". This line reflects what can be expected in terms of dependency ratios if the SPA was raised, mimicking the suggestions of the EWLA. The EWLA is a collection of legislation and practise changes which endeavour to increase the SPA and to provide more opportunities for persons in later life to be economically active (Maltby, 2011;Weyman et al., 2012). This Agenda, believes that such changes to the SPA could be the solution to the imbalances noted by dependency ratios (Smeaton et al., 2009a). Policies including the 1995 Pensions Act, the Employment Equality Regulation Act 2006, and Pension Acts of 2007 and 2011, are of particular relevance to the EWLA as they all suggest that increasing the SPA and shifting responsibility of pensions towards individuals

themselves as opposed to the state, could solve problems associated with dependency ratios (Phillipson and Smith, 2006;United Nations, 2006;Sigg and De-Lugi, 2007). The next section explores the ideas of the EWLA in more detail.

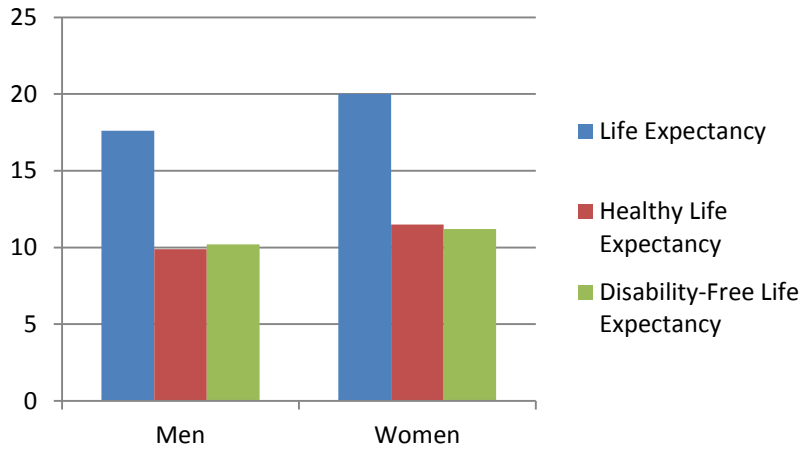
1.3 Extending the working life

The main aim of the EWLA is to encourage people to work up-to, and if possible, beyond the SPA. Being in good health and reporting no disabilities, has been associated with a person's ability to work (Dwyer and Mitchell, 1999;Lund et al., 2001;Sahlgren, 2013;Unger and Schluze, 2013;WHO, 2013a;WHO, 2014). The thinking behind the EWLA comes from the government's recognition that longevity is enabling people to spend up to a decade in good health/ disability-free. It is believed that this period could be spent in economic activity as opposed to retirement (Lievre et al., 2007;Nilsson et al., 2011;Mackey, 2013;Unger and Schluze, 2013). In order to understand whether ageing populations can extend their working lives, it is important to note estimates of healthy and disability-free life expectancies, which may provide some indication of the plausibility of the EWLAs' ideas.

1.3.1 Longevity: Healthy and disability-free life expectancies and their influence upon economic activity in later life

Figure 6 and Table 2, show how British men aged 65+ years old, can expect a further 9.9 years of healthy life expectancy and 10.2 years of disability-free life expectancy, whilst British women aged 65+, can expect a further 11.5 years of healthy life expectancy and 11.2 years of disability-free life expectancy (ONS, 2012b-a).

Figure 6: Number of years of life expectancy, healthy life expectancy and disability-free life expectancy at 65 by gender (UK), 2008



Source: Author's own- using data from the Office for National statistics-ONS (2012b-a:9)

Table 2: Period life expectancy, healthy life expectancy and disability-free-life expectancy in years at age 65, by sex (UK, England, Wales, Scotland, and Northern Ireland), 2008

	Men			Women		
	Life-Expectancy	Health Life-Expectancy	Disability-free life-expectancy	Life-Expectancy	Health Life-Expectancy	Disability-free life-expectancy
UK	17.6	9.9	10.2	20.2	11.5	11.2
England	17.8	10.0	10.5	20.4	11.7	11.4
Wales	17.2	10.7	10.3	20.0	10.1	11.6
Scotland	16.4	8.8	8.9	19.0	10.7	10.9
Northern Ireland	17.1	9.6	9.0	19.9	10.7	9.2

Source: Created by the author of this thesis using data from the ONS (2012b-a:10) analysis of Office for National Statistics (ONS), National Records of Scotland, Northern Ireland Statistics and Research Agency.

Figure 6 and Table 2 add to our existing knowledge surrounding how individuals may expect to spend their retirement years in terms of health and disability. If life expectancy estimates (average, healthy and disability) continue to increase, the urgency for reform of the welfare system, particularly relating to state pensions, is likely to grow (The Kings Fund, 2012).

Notably, healthy and disability-free life expectancy estimates, such as those illustrated in Figure 6 and Table 2, do not account for the influence that economic activity up-to and beyond the SPA, may have for individuals' health and disability outcomes. Additionally, it is apparent that *healthy* life

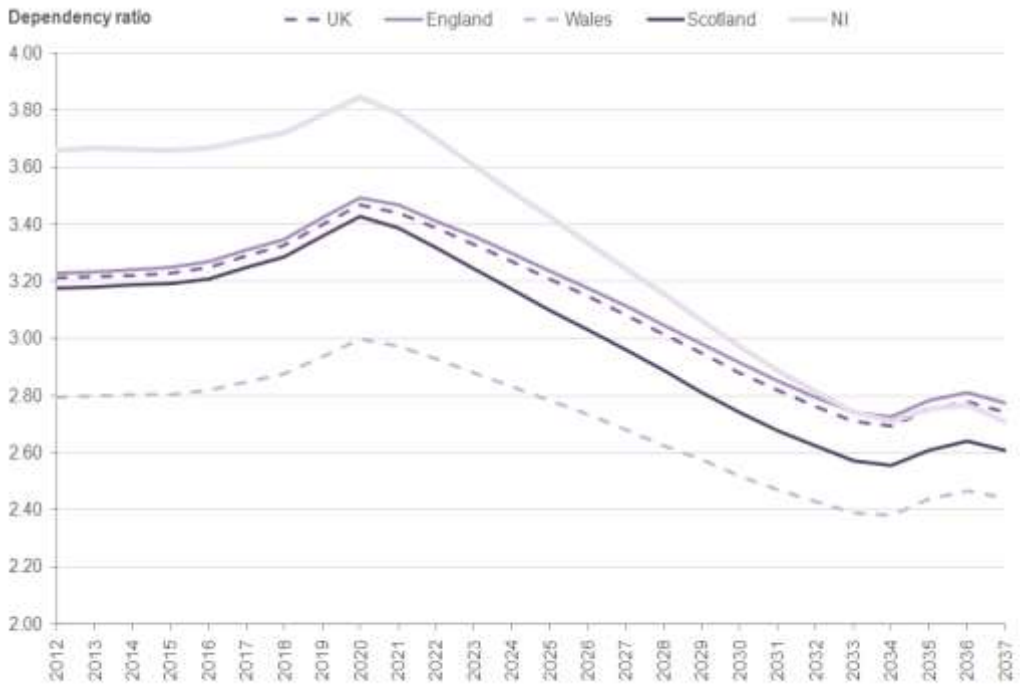
expectancy lags behind *total* life expectancy in its speed of increase, posing concerns surrounding whether encouraging extensions in working is in fact possible (Population Trends, 2005). Furthermore, the effects of extending working lives upon life expectancy remain uncertain. Literature exploring the effect retirement and economic activity have upon health and disability in later life has uncovered mixed conclusions. For example, some research reports that *retirement* can have health preserving effects (Coe and Zamarro, 2011). While other studies have found *working*, particularly in environments where job satisfaction is derived, can evoke health benefits (Cimete et al., 2003;Van Dick et al., 2004;Kautonen et al., 2012;Sahlgren, 2013).

There is clear evidence to suggest prolonging economic activity up-to and beyond the SPA can provide individuals with more time to save towards their retirement (Weyman et al., 2012). If people saved more money for their retirement, the anticipated fiscal challenges surrounding government funding of pensions is likely to reduce (Vickerstaff, 2006;Jagger and Robine, 2011;Määttänen et al., 2014). Encouraging extensions in working lives also may prevent issues associated with skill shortages caused by older-workers leaving the labour market, as it will allow more knowledge and skill transfers to be made between older and younger workers (Walker, 2002). However, for the EWLA to be an effective solution in creating a sustainable welfare system, it is imperative that working longer does not decrease life expectancy estimates, as these are fundamental for economic activity in later life to have become conceivable.

1.3.2 The concept of extending working lives and its influence on dependency ratios

The evidence discussed in the previous section demonstrates how increases in life expectancy have lengthened individuals' "free time" spent in retirement. Policy-makers recognise that these periods could instead be used to extend working lives, helping to create a more sustainable welfare system which overcomes dependency ratio imbalances (Vincent and Velkoff, 2010;Wöss, 2010). Figure 7 illustrates how the Office for National Statistics (ONS) projects dependency ratios will behave if the SPA is increased.

Figure 7: Projected dependency ratio-number of working age population to each person of SPA, (UK and constituent countries), 2012-2037



Source: (ONS, 2014a)

Figure 7 suggests that strategies to increase the SPA will enable dependency ratios to decrease in the future, placing less pressure upon net providers. It is expected that by mid-2022, the dependency ratio will rise to 3.39 (interpreted as: 3.39 people of working age for every person of SPA) (ONS, 2014a). However, with the changes suggested by the EWLA, the ONS reports that this ratio will fall to 2.77 by mid-2037 in England (ONS, 2014a). Although increasing the SPA appears to solve the issue of unequal dependency ratios, this solution does not account for the heterogeneous nature of the population. Dependency ratios are criticised for their inability to recognise that older adults are not always retired and that younger adults are not always working, as is discussed next (Bond et al., 2007).

1.4 Considerations for the EWLA: A heterogeneous ageing workforce

The EWLA suggests that increasing the SPA and providing more opportunities to those in older age to be economically active, could help create more equal dependency ratios in the future (Smeaton et al., 2009a). The Department for

Work and Pensions (2013) (DWP) reported that 27% of the current workforce are aged 50+, whereby it is anticipated that this percentage will increase to 33% by 2020. Returning to the UN's definition of population ageing (see section 1.2), the workforce population can be expected to 'age', bringing further challenges and opportunities (Jorgensen and Taylor, 2008).

Research recognises that it is vital not to generalise life expectancy estimates (healthy, disability and total) (House of Commons, 2006). For example, research shows that 'active ageing', defined by the World Health Organisation (2002:pg. 12) (WHO) as "the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age", is not always obtainable despite receiving increasing encouragement within the policy realm (Lloyd-Sherlock et al., 2012a;WHO, 2013a). Already, this research has found evidence to suggest that there are life expectancy differences between men and women, and cohorts, highlighting how it is important to consider their impact upon the effectiveness of the EWLA in action.

It has been suggested that economic activity both up-to and beyond the SPA, may be unachievable for some people (PricewaterhouseCoopers, 2010;Unger and Schluze, 2013). For instance, a significant proportion (one-third) of the working population continue to show signs of exiting the labour market before they reach their SPA despite the incremental increases of the SPA proposed by recent Acts in law; demonstrating how healthy life expectancy estimates cannot be generalised (Weyman et al., 2012). MacInnes and Spijker (2013) have authored innovative research in their approach to determine if someone is 'dependent', and propose that life expectancy and calendar age can no longer be used as reliable metrics to define the SPA. They argue that this is due to the significance of these measurements changing across time. For instance, evidence shows that life expectancy at older ages has improved (ONS, 2013f). MacInnes and Spijker postulate that such improvements demonstrate that the proportion of elderly persons is declining and that the experience of old-age consequently has reshaped. Instead, these researchers suggest that proximity to death, that being one's remaining life years, could be a more appropriate technique in constructing ageing indicators, an idea originally proposed by Sanderson and Scherbov (2007). Through taking this perspective, a new understanding to the realities of population ageing develops, adjusting the

outlook of pensions and the labour force. Arguably, more recent legislation and policy, which prevents employers from discriminating against their employees on the basis of age (e.g. The Equality Act 2010, which phased out default retirement ages) (Burri and Prechal, 2010;O'Cinneide, 2010;ACAS, 2011) supports the arguments of MacInnes and Spijker (2013). It appears that these newer pieces of legislation recognise that the SPA no longer can accurately represent when a person is a net consumer.

Although the ideas of the EWLA appear to solve dependency ratio inequalities, the present research recognises that estimates of life expectancy and healthy life expectancy cannot provide reliable insights into healthy *working life expect*ancies. This provokes policy concerns surrounding the implications for encouraging extending working lives and the impact this may have for the health and well-being of society in the future (Lievre et al., 2007;Weyman et al., 2012). Evidence discussed in section 1.3.1, has identified lags between life expectancy estimates and estimates of healthy and disability-free life expectancies; illustrating the need to monitor the effects of legislation changes which encourage working in later life, in terms of their implications upon health and well-being in the future (Population Trends, 2005;Unger and Schluze, 2013).

1.5 Research questions

This thesis focuses on identifying individual characteristics associated with economic outcomes among persons (male and female) who are above and below the SPA. This research offers a unique insight into understanding factors associated with working in later life. Such understandings can help policy-makers to make informed decisions in relation to workforce planning.

The research questions (RQ's) addressed by this study were:

RQ1:	a) Among men and women aged over the SPA (defined as 60 for women and 65 for men) in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are over the SPA and economically inactive in 2010?
RQ2:	a) Among men and women aged between 50 years and the SPA in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are below the SPA and economically inactive in 2010?
RQ3:	Using the results of RQ1 and RQ2, what are the most pronounced differences between persons who are economically active or inactive below and above the SPA?

In approaching these questions, a combination of descriptive, bivariate and multivariate analysis techniques were required. The secondary data analysis of this research was guided using a conceptual framework derived from pre-existing evidence and is presented within section 2.7 of this thesis. A variety of variables organised into the five main themes were selected from the dataset of choice, the English Longitudinal Study of Ageing (ELSA), Wave 5 (2010) (see chapter 3 for more details).

The following section outlines the structure of this thesis with a brief narrative of each chapter.

1.6 The structure of this thesis

The purpose of this thesis centres upon identifying and comparing individual characteristics associated with economic outcomes among individuals who are above/ below the SPA (male and female). Such understandings can help identify the individual characteristics typical of persons who extend their working lives or, who exit the labour market prematurely, informing policy-makers of individuals who may need further support if to obtain the objectives of the EWLA.

Chapter 1 introduced the rationale and background to this thesis. The relevance, aims and unique contributions of the research were also outlined. The context of the study in relation to population ageing and the EWLA was introduced and the research questions of the thesis have been presented. Furthermore, a brief discussion of the research methods and the thesis structure has been outlined.

Chapter 2 presents a literature review of empirical evidence from existing research, concentrating upon what determines whether a person extends their working life. In particular, this chapter seeks to examine and synthesise evidence relating to relationships between economic outcomes and demographic, health, socio-economic, geographical and caring characteristics among individuals who are above/ below the SPA. Relevant legislation surrounding the EWLA is also noted, to help present a more holistic historical understanding surrounding legislation in relation to this topic. Furthermore, key theories surrounding the topics of ageing, working and retirement are discussed. This helps to inform the conceptual framework of this research which enabled the researcher to identify gaps within the literature, ensuring a unique project, which adds to the existing body of literature was achieved.

Chapter 3 describes the methodology used by this research. This chapter begins by outlining the dataset, methods of analysis and the key variables that featured in this study. The second part of the chapter, concentrates on defining the data analysis strategy used to answer the research questions, with details of the descriptive, bivariate and multivariate analysis, and a discussion on the issue of weighting. Descriptive analysis, with details surrounding respondent numbers and two correlation matrices will be presented, allowing the researcher to gain a better understanding of the sample and to examine briefly, which characteristics are associated with economic activity among persons who are above/ below the SPA, for the following results chapters to build upon.

Chapter 0 presents the results of the bivariate analysis of this research. The analysis will examine the association between the individual characteristics and economic outcomes, in order of demographic, health, socio-economic, geographical and caring variables. This helps to provide structure throughout the analysis and helps answer the research questions of this thesis in a focused way.

Chapter 5 presents the multivariate findings of this research and examines the relative importance of different variables in explaining economic outcomes among individuals who are either below (50-59/64 years old) or above (60/64-74 years old) the SPA, building upon the findings of chapter 0. Using binary logistic regression modelling, this chapter identifies and compares the key characteristics associated with economic activity up-to and beyond the SPA. In addition to this, the results for men and women are examined separately, enabling gender differences to be explored.

Chapter 6 presents a discussion of this research in relation to the context of studies exploring economic activity among persons who are approaching, or who are aged above the SPA. This chapter integrates the results of the analysis presented within chapters 0 and 5 and comments on the implications this may suggest for policy. The researcher also draws upon research presented within the literature review (chapter 2), to help highlight ways this study supports or contradicts findings of existing studies. This chapter concludes the research through summarising the key findings and implications of the study. Limitations of the study are outlined and recommendations for future research are discussed.

2. Chapter 2: Literature Review

2.1 Introduction and outline

This literature review aims to synthesise the evidence surrounding factors associated with economic outcomes among older adults. To achieve this, an overview of existing literature on this topic will be presented. Although some of the research examined relates to retirement, the focus will be upon economic outcomes of older adults. To help gain a broader understanding of the factors associated with economic activity in later life; both national and international studies will be examined.

A selection of databases were searched using terms on retirement, working, economic activity, SPA, older adults and employment. Databases examined included AgeInfo, Science Direct, ESTOR, PubMed and Web of Knowledge, among others. These databases hold details for a selection of journals; however, journals exploring topics related to gerontology, policy and employment were also accessed through the University of Southampton. This review draws upon literature from journal articles, book chapters, electronic and government reports.

The individual characteristics discussed, are organised into headings of: demographic factors, with particular concentration upon age, gender, marital status and ethnicity (section 2.2); health factors, including physical and psychological health (section 2.3); socio-economic factors, such as financial assets, education and social class influences (section 2.4); geographical factors, including location and region (section 2.5); and finally caring-related factors, such as provision of care and time spent providing care (section 2.6)[2]. Throughout this literature review, the researcher will comment upon theory and relevant legislation and shall discuss their links to the topic of interest. Together, the information presented by this literature review is used to inform

[2] From completing this literature review, a large number of factors were identified as influential upon economic outcomes of older adults. However, for the purpose of this research, individual characteristics that appear to be the most influential are the focus.

the conceptual framework underpinning this research (outlined in section 2.7). Finally, a summary, presenting the key points of this chapter is provided, helping to illustrate the gaps in the literature, which have enabled this research to uniquely contribute to this area of study (see section 2.8).

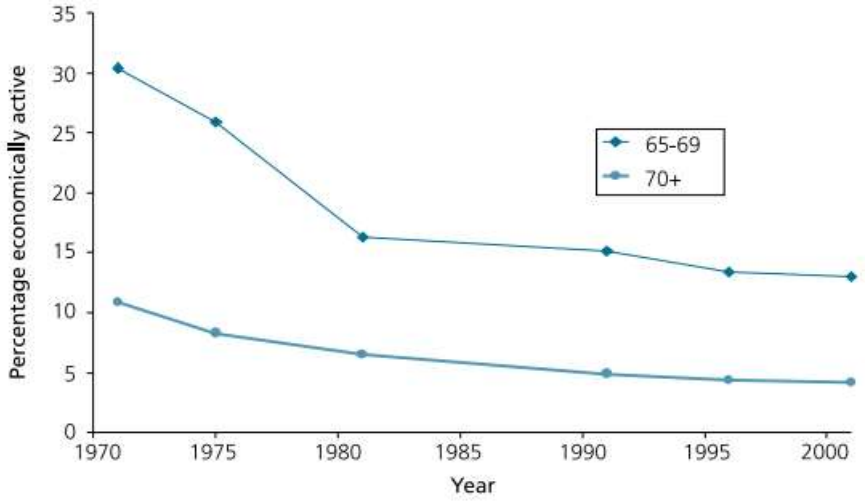
2.2 Demographic characteristics of economic activity up-to and beyond the SPA

Demographic information is commonly used by governments to create profiles of populations and can include factors such as a person's age, gender, marital status and ethnicity (Katbamna and Matthews, 2006). A common trend found when reviewing the literature, was that demographic factors were discussed first (Phillipson and Smith, 2006). This research will also discuss demographic factors first.

2.2.1 Age as an individual characteristic of economic activity

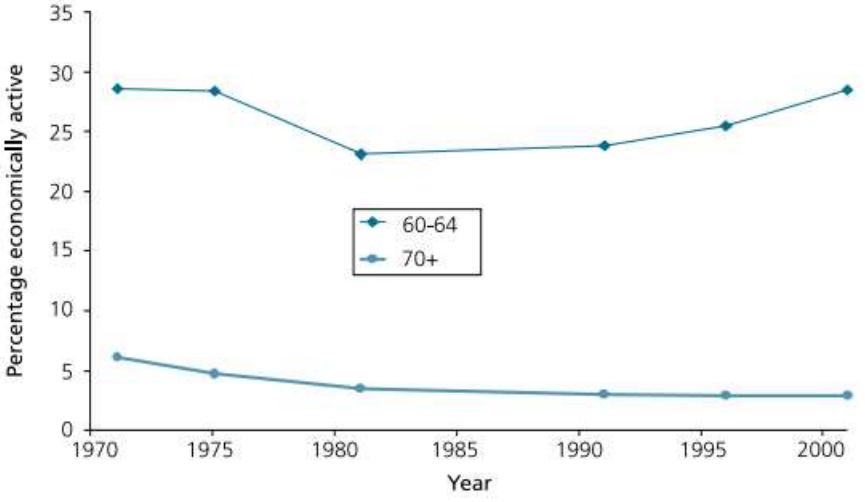
Among the factors reviewed in the literature, age was the most commonly recognised for its association with economic outcomes. Researchers including Johnson and Zaidi (2007) and Dubois and Anderson (2012), report that rates of economic activity tend to decline in later life, particularly beyond the age of 50. Across the literature, it was evident that the most common age-range used to define older-workers, was '50 years and older' (DWP, 2010a;Yeomans, 2011). Further exploration of the literature reveals that beyond the age of 75, economic activity rates are significantly lower than that of other 'older-workers' (further illustrated by Figure 8 and Figure 9).

Figure 8: Rates of economic activity beyond the SPA (men)



Source: Smeaton and McKay (2003) using LFS from various years

Figure 9: Rates of economic activity beyond the SPA (women)



Source: Smeaton and McKay (2003) using LFS from various years

Despite these findings, the ONS (2012b-c) has found that a higher percentage of individuals who are above the SPA compared to individuals who are below the SPA, work in smaller firms. Most often, these individuals work part-time and have worked for the same employer for ten years or more. It is argued that these rates are a reflection of smaller firms being less likely to provide workplace pensions, resulting in employees remaining economically active due to financial reasons (ONS, 2012b-c). Findings such as these, illustrate how older adults comprise a heterogeneous group of individuals.

2.2.1.1 The state pension age (SPA) and its influence upon economic activity among older adults

The standard age of retirement in public pension systems across the developed world is 65; however across Organisation for Economic Cooperation and Development (OECD) countries, the effective age of retirement (i.e. the average age of exit from the labour force) (Fenge and Pestieau, 2005;OECD, 2015) was 64.2 years for men and 63.1 years for women in 2012 (OECD, 2013). Until recently, the official SPA (i.e. the legal age a person becomes eligible for a state pension) in England was different for men and women; 60 years old for women and 65 years old for men. Examining Table 3, it is evident that official SPA regulations set by each of the countries listed were very similar to one another; predominantly ranging between 60 and 65. Where legal retirement age varied between men and women, women's legal age was lower (see 'Legal age' columns).

Table 3: Legal retirement age and effective age of exit for the active population (OECD and European workforce), 2002-2007

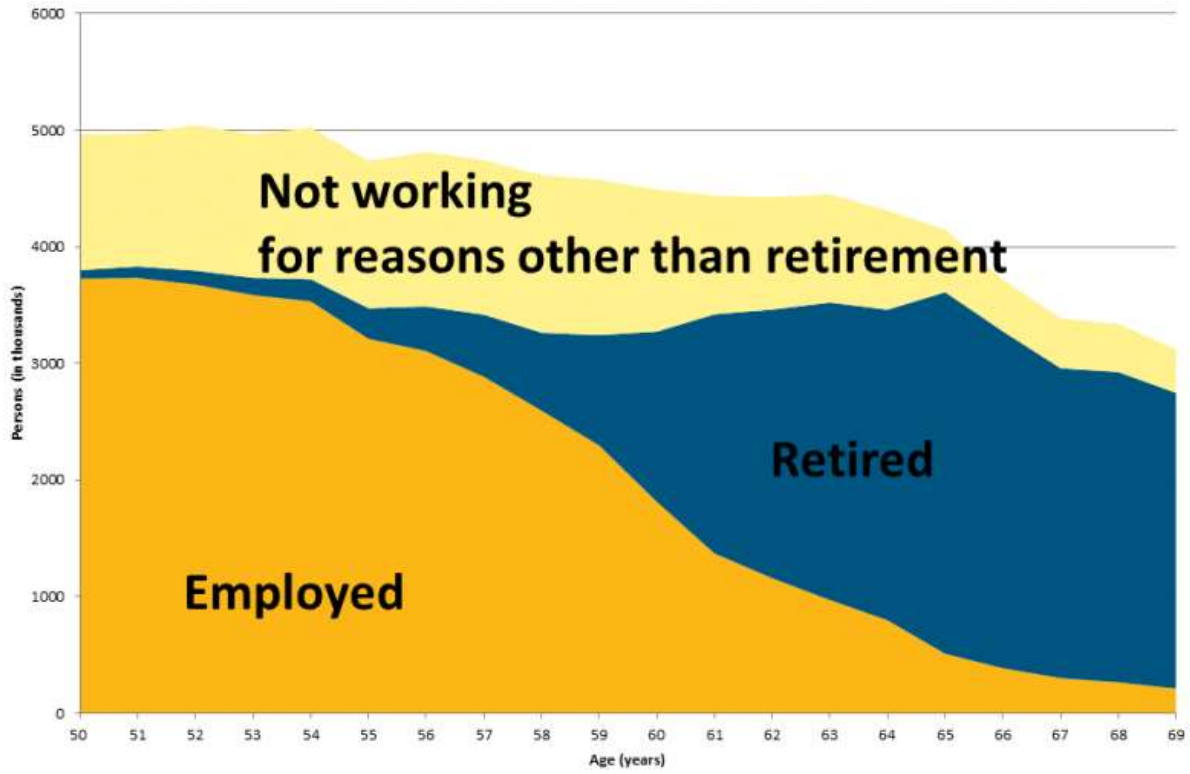
Country	Men		Women	
	Effective age	Legal age	Effective age	Legal age
Austria	58.9	65	57.9	60
Belgium	59.6	65	58.3	65
Canada	63.3	65	61.9	65
France	58.7	60	59.5	60
Germany	62.1	65	61.0	65
Italy	60.8	65	60.8	60
Japan	69.5	64	66.5	62
Luxemburg	59.2	65	60.3	65
Spain	61.4	65	63.1	65
Sweden	65.7	65	62.9	65
Switzerland	65.2	65	64.1	64
United Kingdom	63.2	65	61.9	60
United States	64.6	65.8	63.9	65.8
OECD-30	63.5	64.4	62.3	63. 1
EU-19	61.7	64.3	60.5	62.7

Source: Holiday (2012) using OECD estimates derived from national surveys and the European Workforce

As discussed in section 1.2.2, the original policy intentions of introducing a SPA, aimed to allow people nearing the end of their life to have the opportunity to exit work with a lower risk of poverty (Adams et al., 2002). Although life expectancy estimates have since increased (see section 1.2.1 for further evidence of this), policy has not adjusted to help promote these original intentions. It is evident from examining Table 3 that in fact effective retirement age is consistently lower than the legal SPA, with the only exceptions being Japan and Sweden. Despite slight differences, the effective retirement age and legal age of retirement show clear similarities often paralleling one another.

Although there are some cross-country and gendered variations, the effective retirement ages noted, are often between the ages of 60 and 65; which interestingly are ages commonly used to set the legal retirement age of countries worldwide (Kunkel et al., 2014). Unlike legal retirement age, which is defined under legislation, effective retirement is a calculated estimate. As an 'average', effective retirement age has the disadvantage in that extreme outliers can influence it. Turning to look at Figure 10, a more holistic understanding of how these estimates may be influenced can be gathered.

Figure 10: Employed, retired and other not employed persons, aged 50-69 (thousands of persons), EU-28, 2012



Source: (Eurostat, 2014)

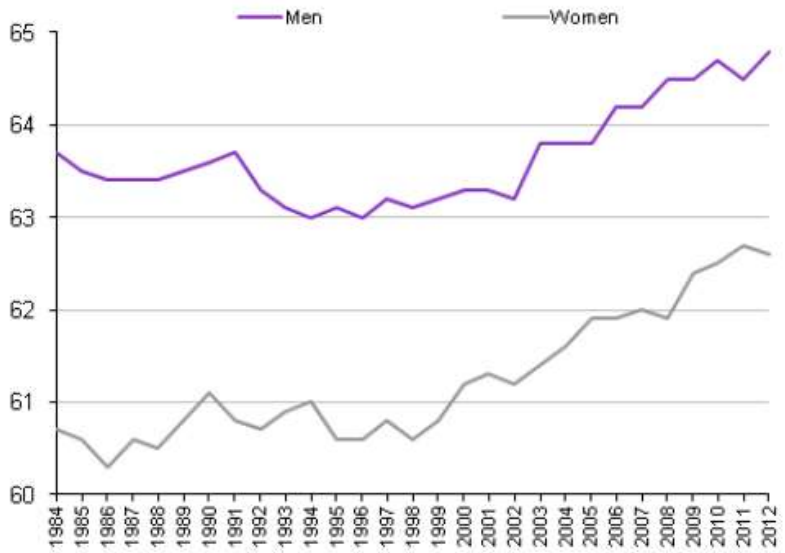
Examining Figure 10, the association between economic activity and age becomes more evident. The data shows with increasing age there is a decline in the number of employed individuals or, who are not working for reasons other than retirement. Simultaneously to this decline, retired individuals appear to increase in number with age. This supports the conclusions presented already by section 2.2.1, which have found with increasing age, rates of economic activity tend to decrease.

A particularly interesting observation of Figure 10, relates to the small number of individuals who are employed beyond the age of 65 and the small number of individuals who are retired prior to the age of 60. These individuals report a status which is uncommon for their age groups, and will have an influence on effective retirement age, as they will affect the *average* which is calculated. The number of retired individuals becomes most amplified between the ages of 60 and 65; the ages most commonly used to define legal retirement age; echoing the results noted by Table 3. This finding provides further support to the

arguments presented by pre-existing literature, which have suggested that eligibility to receive a state pension coincides with increased rates of economic inactivity as people associate pensions with retirement (Adams et al., 2002).

Examining the legislation of the EWLA (see end of section 1.2.3), one suggestion proposed is to increase the effective age of retirement through increasing the SPA (OECD, 2002). If, as appears to be the case in Table 3 and Figure 10, labour market exits are guided by SPA regulations, increasing the SPA may indeed encourage people to be economically active for longer. In line with this argument is the historical data presented by Figure 11 which explores the average age at which men and women in the UK withdrew from the labour market between 1984-2012.

Figure 11: Average age of labour market withdrawal by sex (1984-2012), UK



Notes: Annual data for period 1984 to 1991. April to June data for 1992 to 2012. The data is not seasonally adjusted.
Source: (ONS, 2013a) using data from the Labour Force Survey

Examining Figure 11, it is evident that over the past four decades the average age of withdrawal from the labour market has shown a steady increase. Policies including the 1995 Pensions Act, the Employment Equality Regulation Act 2006, and Pension Acts of 2007 and 2011, are of particular relevance to the EWLA, as they all have made suggestions to increase the SPA as a means of helping to facilitate extending working lives. This evidence highlights the complexities of calculating the effective retirement age, whereby as opposed to the SPA, which has a consistent population-wide definition, the effective

retirement age can be influenced by the timing and the sample examined, among other factors (Kras, 2010;Sauré and Zoabi, 2011;Institute of Medicine (US) Committee on the Long-Run Macroeconomic Effects of the Aging U.S. Population, 2012).

2.2.1.2 Stereotypes of age and the influence they have upon economic outcomes of older adults.

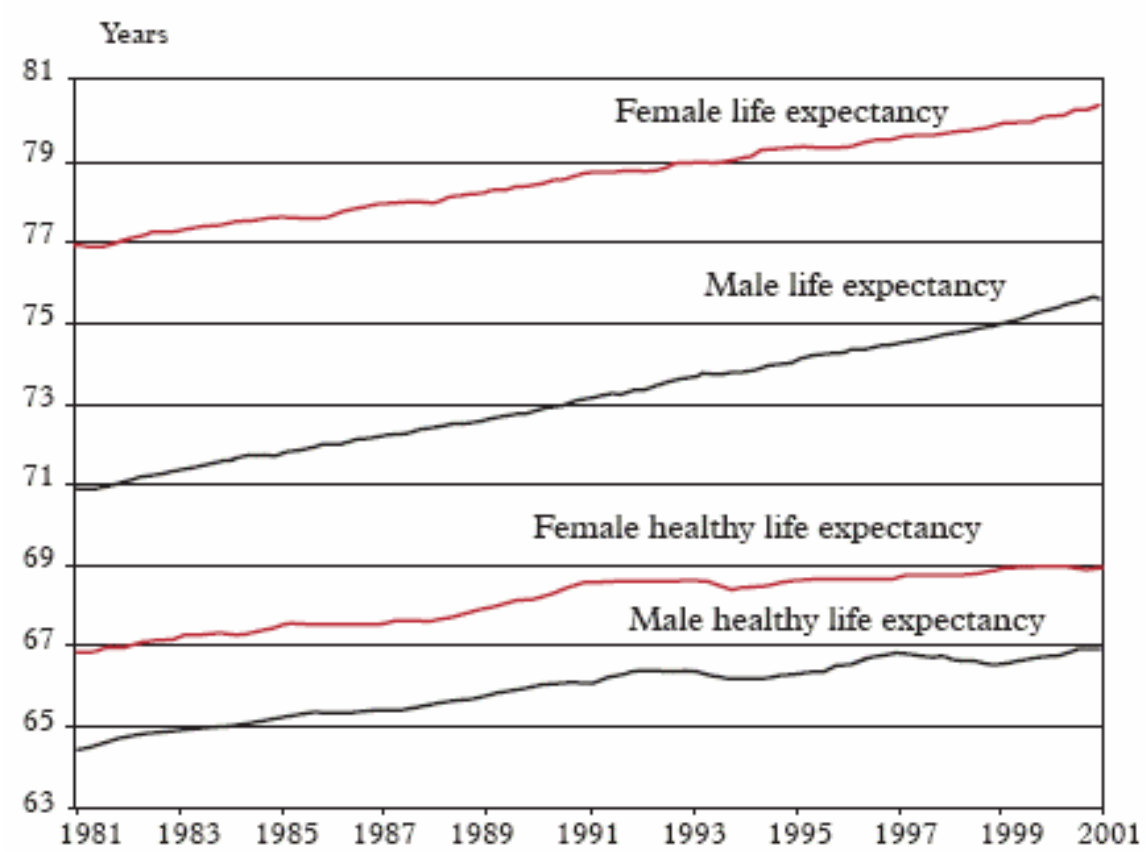
Lack of adjustment to legislation relating to the SPA, has resulted in the expectation to retire at this age to have become ingrained as a societal norm (Thurley, 2012;Erp et al., 2014). According to the Social Identity Theory, social and cultural norms and stereotypes can influence how people identify themselves and behave (Tajfel, 1972;Tajfel, 1974;Hogg and Reid, 2006;Radl, 2012b). In line with this theory, it is likely that the stereotype of being "old", originally associated with ages above the SPA (see section 1.2.2), have become embedded within society, resulting in many people leaving the labour market upon reaching the SPA. Consistently research has supported this idea and has shown that older-workers are often subject to age stereotypes at work (Ng and Feldman, 2012). A prominent stereotype surrounding older-workers, is that they are less motivated and less willing to change (Ng and Feldman, 2012). Evidently, older adults may be denied access to new technologies and training opportunities, which can increase their risk for job loss and redundancy, due to their skills becoming obsolete (CarnegieTrust, 1993:21;DWP, 2001:12-13;McNair et al., 2004;Johnson and Zaidi, 2007;Houses of Parliament, 2011;Winkelmann-Gleed, 2012). This reflects how society's behaviour may fuel such stereotypes.

According to the Self-Fulfilling Prophecy, expectations and stereotypes can evoke behaviours among the persons to which a stereotype is aimed, effectively leading a prophecy into becoming true (Jussim et al., 1996). In line with the ideas of the Self-Fulfilling Prophecy, it is evident that age stereotypes can contribute to an individual's own views and behaviours in terms of extending the working life and economic activity when above the SPA (Foster, 2012). This is demonstrated by the research of McKay and Middleton (1998), who found that job-seeking behaviours among unemployed older adults compared to younger counterparts are often less intensive. Many older adults report believing that they are "too old" to re-enter the labour market, often

reinforced by employers' reluctance to provide workplace funded training to older employees (McNair, 2006). These reduced attempts to re-find employment, may also contribute to individuals in these circumstances exiting from employment prematurely due to them being less likely to find another job.

Policy needs to recognise that increases in longevity have reshaped the experiences of persons who are aged 60-65, ages which were originally associated with "old-age" and used to define the SPA (Bloom et al., 2014). People reaching an age eligible for a state pension in today's society, are on average healthier and can expect to live longer, compared to persons of SPA in 1940 (when this benefit was first introduced) (Lievre et al., 2007;Lloyd-Sherlock et al., 2012a;ONS, 2012b-a). Examining life expectancy estimates, it is apparent that healthy life expectancy has increased (although at a slower pace) simultaneously with total life expectancy, suggesting that individuals can expect to be in good health for longer periods of their life-span compared to former generations (see Figure 12) (Taylor et al., 2007;Lloyd-Sherlock et al., 2012a) (see chapter 1, section 1.2.1).

Figure 12: Life expectancy and healthy life expectancy, men and women, (UK), 1981-2001



Source: (Parliament, 2005)

A common ageist stereotype suggests that older adults tend to be in poor health, and are ill/ disabled (Thornton, 2002). Figure 12 demonstrates how healthy life expectancies have changed across time, with persons experiencing better health at later ages in more recent times. However, it is apparent that negative stereotypes of being 'old' associated with the SPA remain within society, with ageism being identified as a key barrier to being economically active among older-workers (Bytheway, 2012). Phillipson and Smith (2006), suggest that challenging ageist stereotypes at work may help to encourage economic activity among older adults.

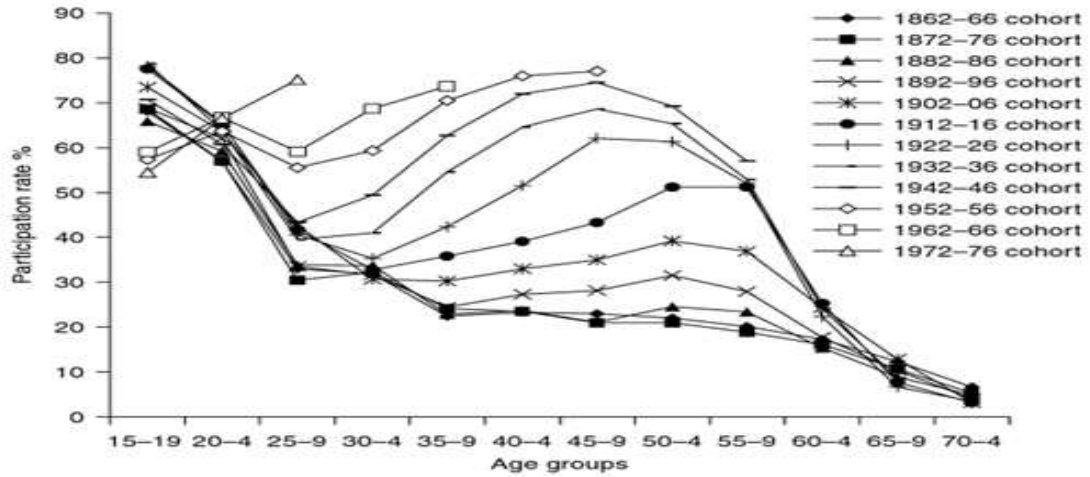
2.2.1.3 Individual age at time of legislation and its influence on economic activity upon reaching the SPA

The proposed changes in legislation which target encouraging extensions in the working life, are recent in their implementation, whereby the 1995

Pensions Act was the first piece of legislation since 1940 to increase the SPA (Cribb et al., 2013a). The recent nature of these changes, combined with evidence to suggest that policy often experiences a lag between implementation and effect, is a recognised issue related to the topic of extending the working life (Fang and Miller, 2011). This is because older adults, who are identified as the key cause for many of the challenges associated with pension provisions and retirement, are less likely to be affected by newer legislation changes which target extending the working life and promote economic activity among older adults (Beinhocker et al., 2008). This is due to older adults' being limited in their ability to amend their retirement expectations and career behaviours, as the period of time they have been informed of such law changes is far shorter than that of younger cohorts.

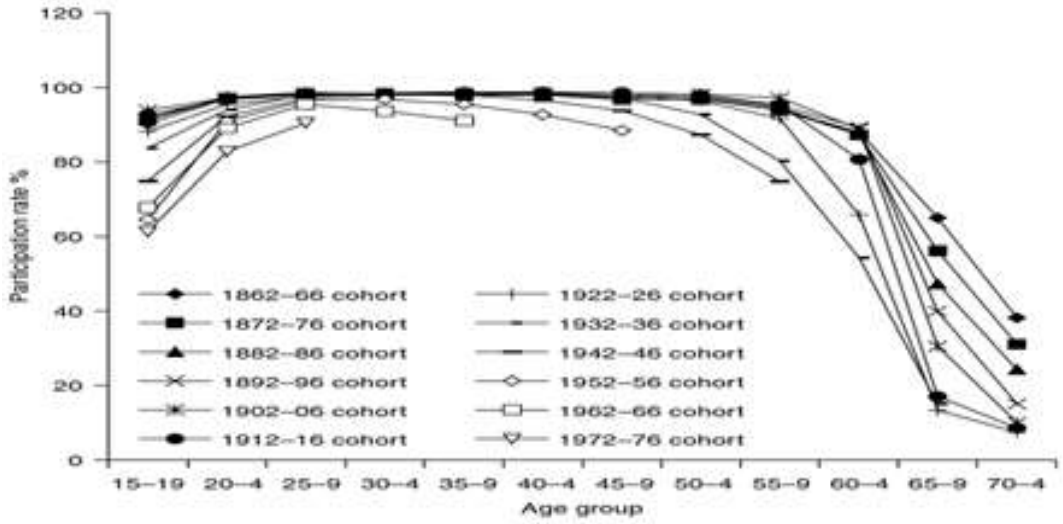
Research has found that career trajectories can influence a person's final retirement decision (Allen and Meyer, 1993;Blekesaune et al., 2008;Evandrou et al., 2009;Laurijssen and Glorieux, 2011;Dewilde, 2012). Cohort trends reveal that women born during 1862-1936, were less likely to have participated in the labour market than those born into subsequent cohorts (Pienta and Hayward, 2002). Complementing the ideas of the Social Identity Theory, historically women have been perceived as caregivers, whilst men have been perceived as providers/ breadwinners (Lewis, 2001). The trends depicted within Figure 13 and Figure 14, support these stereotypes, with men showing increased labour market participation rates compared to their female counterparts (Tajfel, 1972;Hogg and Reid, 2006).

Figure 13: Average life-course employment trajectory of twelve five-year birth cohorts: women aged 15-74, (UK), 1862-1976.



Source: Johnson and Zaidi (2007:104) analysis of BHPS 1991-2001
Notes: intervening cohorts born 1967-71 through to 1967-71 have been omitted to improve graph clarity.

Figure 14: Average life-course employment trajectory of twelve five-year birth cohorts: men aged 15-74, (UK), 1862-1976



Source:Johnson and Zaidi (2007:102) analysis of BHPS 1991-2001
Notes: intervening cohorts born 1967-71 through to 1967-71 have been omitted to improve graph clarity.

As can be seen from Figure 13 and Figure 14, career trajectories led by individuals, are typical of society expectations of that period. Equality is a prominent expectation promoted in recent societies (e.g. The Equality Act, 2010). This expectation appears to have led to the treatment of men and women becoming increasingly equal. The patterns in the participation rates of men and women appear to converge, once more suggesting that expectations

of society play a significant role in career trajectories led by men and women (discussed further in section 2.2.2). It is interesting to compare the cohort differences among men and women independently. Among women, the figure shows participation rates continually increase across 1862-1976 whereas the pattern among men is more consistent. However, employment participation rates among later generations of men appear to decrease at earlier ages. This can somewhat demonstrate the influence that legislation has had on these respondents and how these effects have become more pronounced as time has progressed.

Between 1970 and 1990 there were efforts to push 50-60 year-olds out of the labour market (Lewis, 2005). It was believed that this would help alleviate the economic crises of that period and would prevent unemployment among younger individuals (Banks et al., 2008b). The dip in male employment rates seen around this time within Figure 14, arguably demonstrate how legislation such as this, evoked changes in working patterns and career trajectories of individuals at this time.

2.2.1.4 The impact of transitions over the life-course on individuals' decisions to work longer

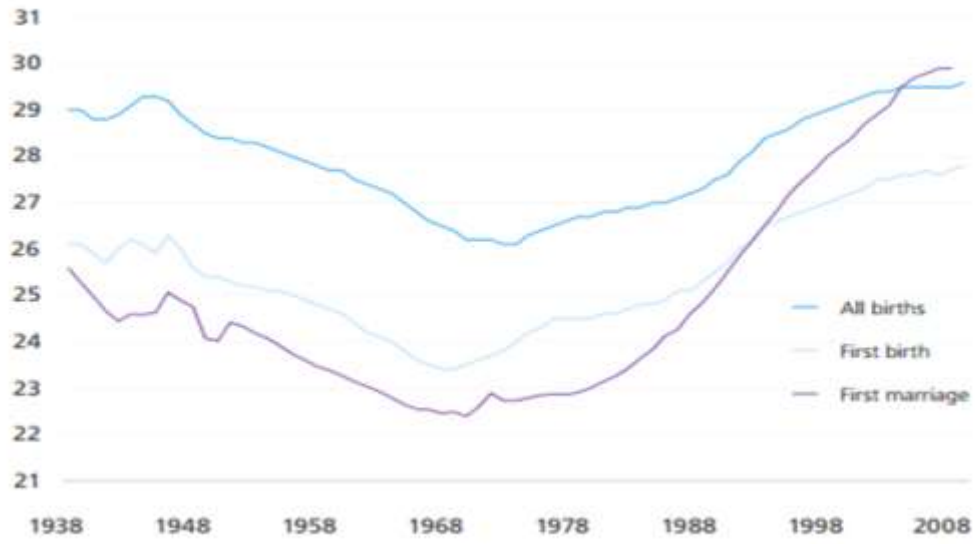
A final aspect of age considered by this literature review surrounds the typical ages at which life transitions occur and the influence they have for economic activity in later life. Evidence has found that the transition to retirement commonly occurs between the ages of 60 and 65 (see section 2.2.1.1, and Figure 13 and Figure 14) (Kim and Moen, 2002;Eichhorst, 2011). With this in mind, it is apparent from the discussions within section 2.2.1.3, that there is variability across cohorts regarding the age at which persons choose to exit the labour market (Johnson and Zaidi, 2007). However, it is important to recognise that other life transitions may also contribute to cohort differences.

For example, the transition from education to employment, appears to have become postponed (Harvey, 2000). As is later discussed within section 2.4.1, researchers have shown that time spent in education has increased, resulting in later entries into the labour market, often with higher educational attainments (Griliches and Mason, 2010). Older adults are more likely to have left education earlier, with fewer educational attainments (Baldi, 1997;Dalstra

et al., 2006;ONS, 2011b) (see section 2.4.3) placing them at a disadvantage when seeking work, particularly when competing for positions against younger, more highly educated individuals (Ross and Wu, 1995;Harvey, 2000). Therefore, if policy-makers are to encourage economic activity among older adults effectively, experience as opposed to education could be considered, to account for educational opportunity differences of cohorts.

A consequence of spending longer periods in education is that many other life transitions become delayed (Cherlin, 1980;Wheaton, 1990;Kim and Moen, 2002;Eichhorst, 2011). Such transitions include: leaving home, getting married and having a baby (Wheaton, 1990;Albanesi and Olivetti, 2010). Figure 15 illustrates how first births and first marriages are increasingly occurring at later ages than that of previous years.

Figure 15: Average age of woman at birth and marriage, (England and Wales), 1938-2008

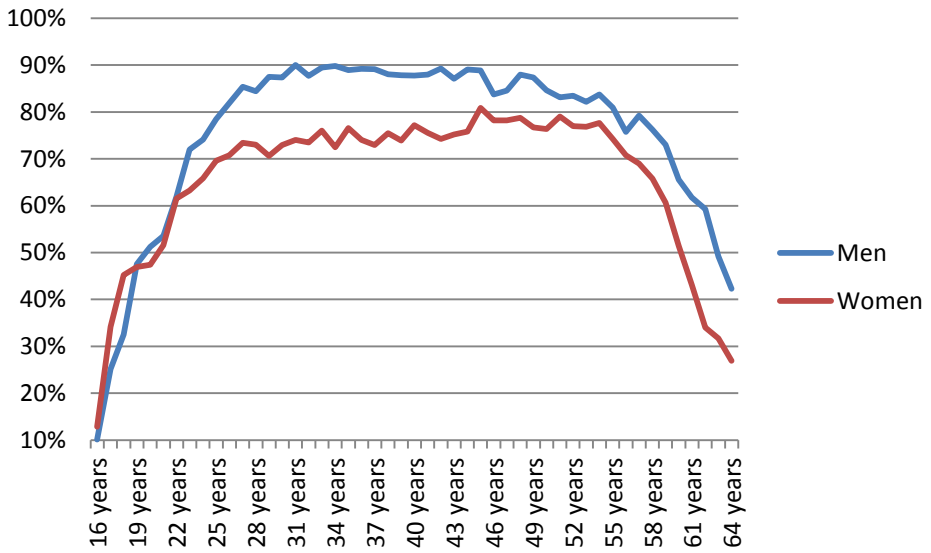


Source: Thompson et al. (2012).

Examining Figure 15, it is evident that the average age women in 2008 stopped having children, was similar to that reported by women in 1938. However, the age of women at the time of their first birth, appears to have increased across this period. This has implications for the total number of children a woman can have. Research has found that having a child can influence one's career trajectory (Miller, 1981;Bookman and Kimbrel, 2011;The

Guardian, 2013). Looking at Figure 16 it is clear that the employment rate of men is consistently higher than that of women (beyond the age of 23).

Figure 16: Employment rates (%) for men and women by individual year of age, (UK), 2013



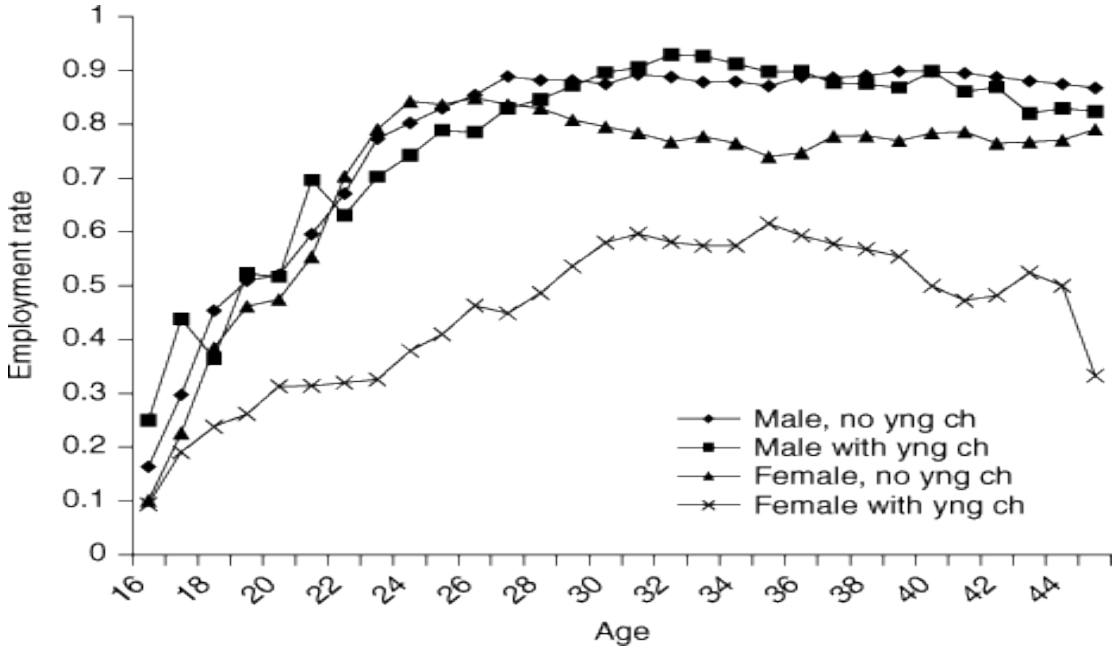
Source: Author's own using LFS data noted in ONS (2013g)

The term 'interrupted careers' is used within literature to refer to when an individual exits their career for a short period of time (Evandrou and Glaser, 2004;Loretto et al., 2005). Literature has found that interruptions are often made in response to taking on responsibilities of child and/ or elder-care (Evandrou and Glaser, 2004;Loretto et al., 2005) (see sections 2.2.2 and 2.6). Figure 15 suggests that across the period of 1938-2008, women typically begin, and finish having children, between the ages of 22-30. Reflecting upon Figure 16, it is clear that the participation rates among women between these ages are lower than that of older women. Arguably, these low rates of employment may be a reflection of women interrupting their careers to have children and to provide child-care.

As has been discussed in relation to the Social Identity Theory, it is women who are most commonly expected to be responsible for providing elder and child-care, particularly in midlife (Lewis, 2001;Hill et al., 2014). Figure 17 illustrates that women report the lowest rates of employment, as compared to men or childless women, women who have young children show a decrease of 20-40% in their employment rate (Johnson and Zaidi, 2007). Interestingly, the

identities of men as breadwinners and family providers are also reflected by the data patterns of Figure 17. For instance, it is evident that male employment rates are higher than that of females, whereby men who have children, report the highest levels of employment. Literature has found that men with dependent children work more hours, supporting the findings of Figure 17 (Cherlin, 1980;Easterlin et al., 1993;Biggart and O'Brien, 2010). With women having children later in their life, men are anticipated to work until older ages, consequently achieving a critical objective of the EWLA.

Figure 17: Age specific employment probabilities by gender and the presence of young children (0-4 years old) for ages 16-46, (UK), 1991-2001

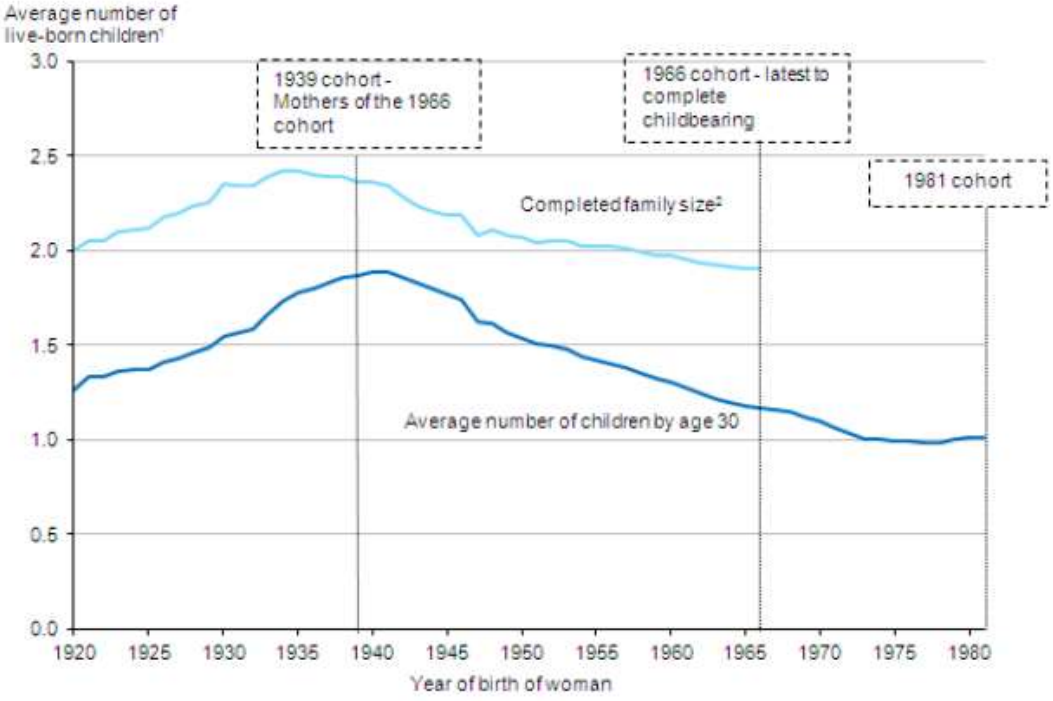


Source: Johnson and Zaidi (2007:110) analysis of BHPS 1991-2001.

Delays in motherhood by younger cohorts lead to the interruptions of one's career, becoming postponed. Evidence suggests a "scarring effect" (defined as: the negative long-term effects) from career interruptions; whereby longer periods of time out of work are associated with a lower likelihood of returning to work or working full-time (Johnson and Zaidi, 2007:112;Flynn, 2010;Winkelmann-Gleed, 2012). Miller (2011) suggests that motherhood delays lead to substantial increases in earnings, wages, work hours and opportunities for full-time work, all of which are factors that have been identified as having positive associations, particularly for women, with extending the working life (see section 2.4). This may explain the increases in

participation rates, noted in Figure 13 among younger generations of women. Postponed childbearing appears to be associated with a reduced number of children born. Figure 18 shows that the number of children born to women, has decreased since the Second World War ended.[3] In light of the evidence presented on interrupted careers (Evandrou and Glaser, 2003), it may be anticipated that due to fewer children being born, women will interrupt their careers less, which is likely to have positive implications for their career prospects.

Figure 18: Average number of live-born children, by age 30 and completed family size by year of birth of woman, (England and Wales), 1920-1980



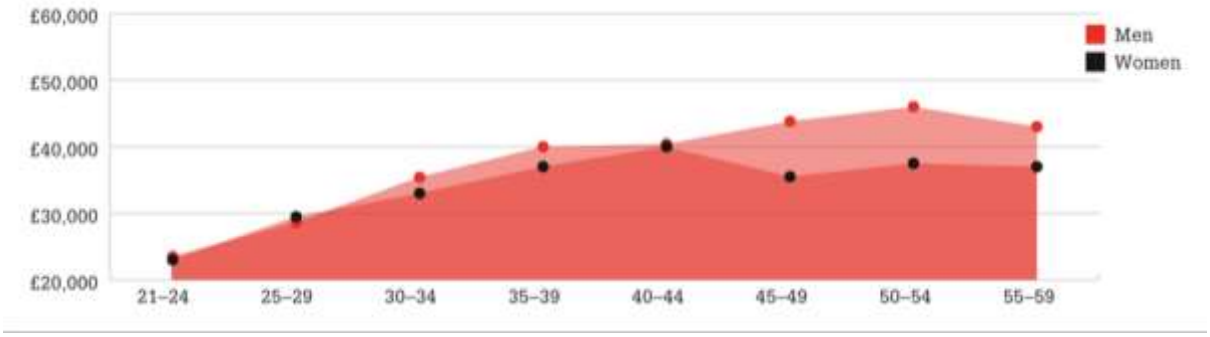
Source: ONS (2013b:4).

However, in addition to child-care, elder-care responsibilities have also been identified as leading to career interruptions and labour market exits (Soldo and Myllyluoma, 1983;Johnson and Lo Sasso, 2006). The number of very elderly people (aged 85+) is anticipated to rise to 1.7 million by 2031 (Raphael Wittenberg et al., 2001). Age UK have identified this group to be among the most likely to require care (Abrahams et al., 2014). However, with cuts in

[3] World War 2 ended in 1945.

government spending for care services, the responsibility is increasingly placed upon individual's families (Jagger and Robine, 2011;The Kings Fund, 2012;ONS, 2012b-a;Trades Union Congress, 2013;Flynn et al., 2014). The need to provide elder-care is likely to become exaggerated among younger generations compared to that of older cohorts, as a result of an ageing population (see chapter 1, section 1.5) (Künemund, 2006;Bookman and Kimbrel, 2011). Looking at Figure 19, it is apparent that the median total annual earnings from employment among middle-aged women (i.e. those aged 44+ years old) show a decline. Interestingly, these same periods have been associated with pressures to provide elder-care (Walker, 1996;Barrett et al., 2014). Combining this evidence with that of findings which suggest childbearing periods are becoming postponed, it may be anticipated that these elder-care pressures will occur concurrently to child-care duties (Mitsakis and Talampekos, 2014). Figure 19 depicts a clear picture, whereby when there is an evident decrease in median total earnings among women, men of the same age show their earnings to instead, increase. Evidence already discussed, suggests that dependants are a key motivation for men to be economically active, whereas for women the presence of dependants is associated with exits from the labour market; offering insight into the findings of this figure.

Figure 19: Median total annual earnings from employment by age and gender, (UK), 2013



Source: (The Environmentalist Online, 2013) using the IEMA practitioners' survey

The literature has highlighted how the middle or "sandwich" generation, are often faced with family (child and elder-care needs) and work responsibilities, which makes achieving a work-life balance much harder (Neal and Hammer, 2007). Persons who are middle aged (45-64 years old), female and who have children, have been identified to be among the most likely to feel pressure to

care for two generations (elder and children) (Miller, 1981;Johnson and Lo Sasso, 2006;Künemund, 2006;Neal and Hammer, 2007). Caregiving has been associated with lower earning potential and reduced hours in paid employment (Dentinger and Clarkberg, 2002;Lilly et al., 2007;Lee and Tang, 2013), which may explain the dips in earnings noted in Figure 19. (The implications of caregiving upon work and retirement are discussed further section 2.6). With longevity increases (Lievre et al., 2007), and with evidence to suggest that persons are living longer and healthier lives, it can be anticipated that the need to provide elder-care will, like many of the other life transition periods, become postponed (Cherlin, 1980). However, the intensity of these responsibilities is anticipated to be greater than that experienced by earlier generations, due to the changes in health needs (see section 2.3) and the increased numbers of elderly persons anticipated to demand such care (Lipszyc et al., 2012). Nevertheless, with individuals remaining healthier on average, the needs of such individuals may not be as great as policy concerns suggest (see chapter 1, section 1.1.3) (Künemund, 2006).

Transition postponements ultimately are resulting in many lifespan events occurring later in life. It is the conflict caused by these transition delays and the lack of change to the SPA, which is central to the concerns addressed by the EWLA. The literature draws a clear distinction between the effects that age has upon men and women, which has generated an interest into gender as a determinant of economic outcomes in later life. Consequently, the next demographic variable examined by this literature review, relates to an individual's sex.

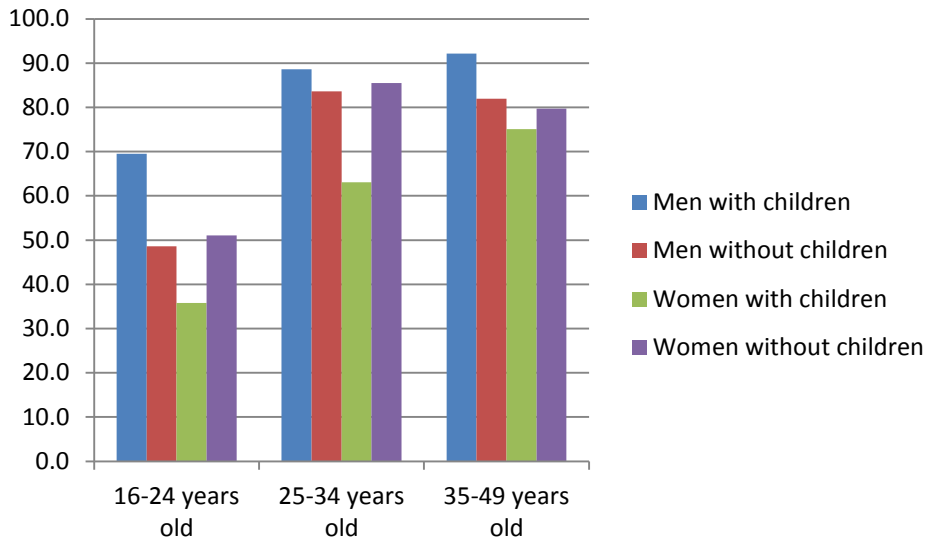
2.2.2 Gender as a determinant of economic activity

Consistently, literature suggests that there are significant gender differences in the expectations, planning and outcomes of economic activity among older adults (McKay and Middleton, 1998;Pienta and Hayward, 2002;Flynn, 2010). These are discussed, alongside many other factors which have been linked to gender, throughout this section.

2.2.2.1 Typical gender roles: Women as caregivers; men as breadwinners

In addition to age, gender has also been identified as a significant determinant associated with working in later life. Section 2.2.1 has already presented a multitude of literature, which highlights gender differences in relation to economic activity among older adults. Johnson and Zaidi (2007) (in the previous section of this literature review), demonstrated that the career trajectories of men and women are often very different. The most prominent conclusion drawn from the literature suggests that historically women are more likely to take on caregiving responsibilities, while men are more likely to stay in employment (Evandrou et al., 2009;Sefton et al., 2011;Gilbert, 2014). Research by the ONS, analysing the Labour Force Survey (LFS) (see Figure 20) demonstrates that men with children are 1.4 times more likely to work than those who are childless, whilst among women the presence of children appears to reduce the likelihood of working.

Figure 20: Employment rates for men and women living with and without dependent children by age group, (UK), April-June 2013



Note: 1) The employment rate is the number in employment in each category as a percentage of all those in the category.
2) Dependent children are children under the age of 16 and those who are 16-18 who have never married and are in full-time education.
3) The LFS categorises women on maternity leave and on a career break as in employment.

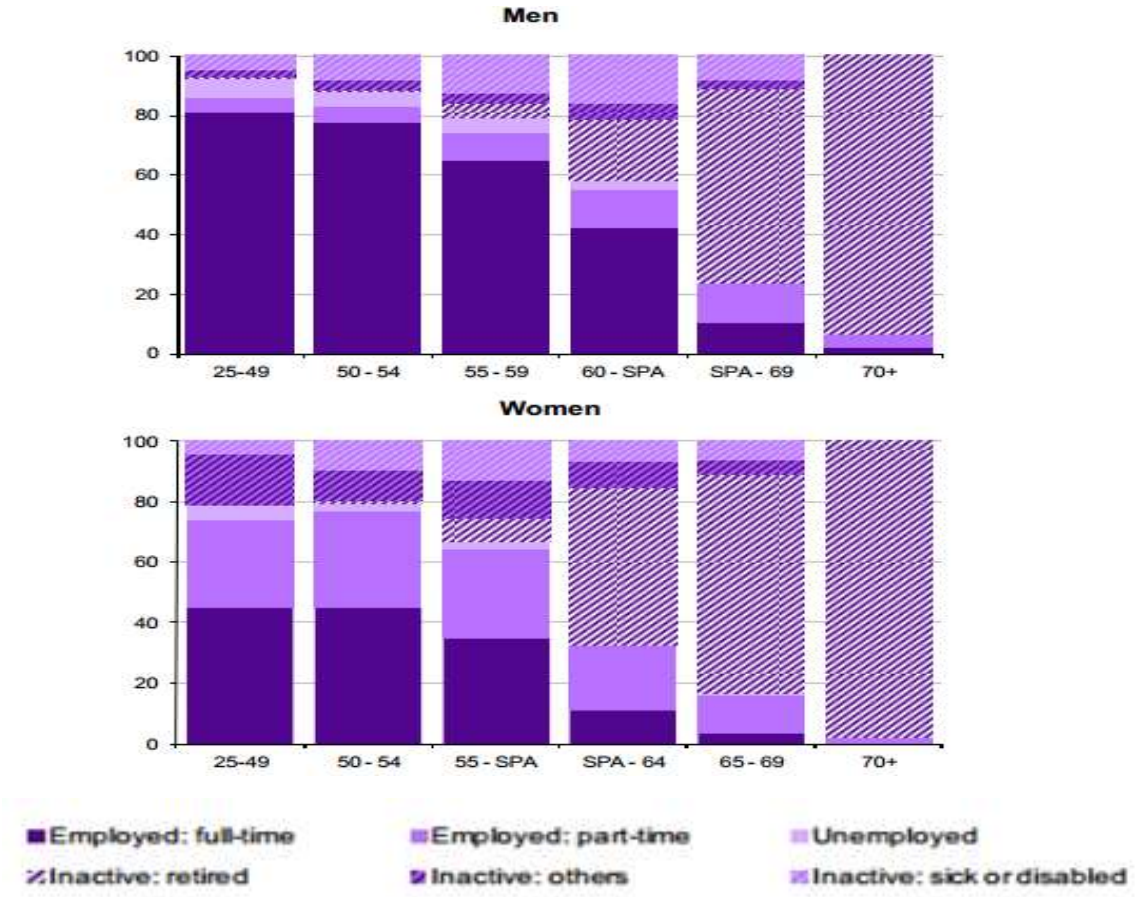
Source: ONS (2013g) analysis of the LFS

Evidence has shown that despite the cessation of caregiving responsibilities, for example once a child has grown-up or an elderly person dies, individuals often continue to be economically inactive (Evandrou and Glaser, 2003). Evandrou and Glaser (2003) report that women aged 45-49 years old, who exit the labour market to assume caregiving, tend to have significantly fewer total number of years of part-time (4 years) or full-time (12 years) work, than those who remain working (7 and 15 years respectively). The trend for women to have a lower uptake of full-time work is further illustrated by McKay and Middleton (1998) in their research using secondary analysis of the British Family and Working lives Survey (FWLS) (1994-5) with a focus upon employment and family history. McKay and Middleton (1998) report that among 9,139 individuals aged 16-69 years old, 64% of men aged 50-59 years old, were in full-time work, whereas only 28% of women of the same age were working full-time. Interestingly, 21% of women reported to be 'looking after home or family' suggesting that caregiving responsibilities may be a key reason for the evident differences in male and female working patterns and career trajectories.

2.2.2.2 Type of work undertaken by men and women: Part-time versus full-time working

More recent statistics help to demonstrate clear gender disparities in the type of economic activity into which men and women tend to be classified. For example, Figure 21 demonstrates a lower uptake of full-time work by females across all age groups. Additionally, women more commonly report to be part-time or inactive due to other reasons compared to men (see Figure 21).

Figure 21: Economic activity by sex and age (%), (UK), April-June 2011



Source: ONS (2012c:8), analysis of LFS, ONS.

Although the evidence suggests that women are less likely to take-up full-time work, Figure 21 does suggest that women have a higher tendency to take-up part-time work compared to their male counterparts across the life course. Research by Evandrou and Glaser (2003) demonstrated that for a significant minority of women, combining paid employment and caregiving is not always possible, often resulting in difficult situations, particularly if work cannot be flexible around care duties to allow people to combine these responsibilities (Gautun and Hagen, 2010). Research has found that there is a negative relationship between caregiving and labour market attachment, whereby persons in part-time work report the strongest effects of caregiving and are more likely to reduce their hours of paid employment or to stop working, compared to people in other occupations (Henz, 2004). Research has found that persons who have spent longer with their employer and who thus are more likely to have sufficient pension income, are less likely to opt for temporary work (both men and women), self-employment (men) or part-time

work (men) (Lissenburgh and Smeaton, 2003). With men more commonly in full-time work, it is apparent how men are perhaps in a better position to extend their working lives (Biagi et al., 2011;ONS, 2012b-c;Altmann, 2015).

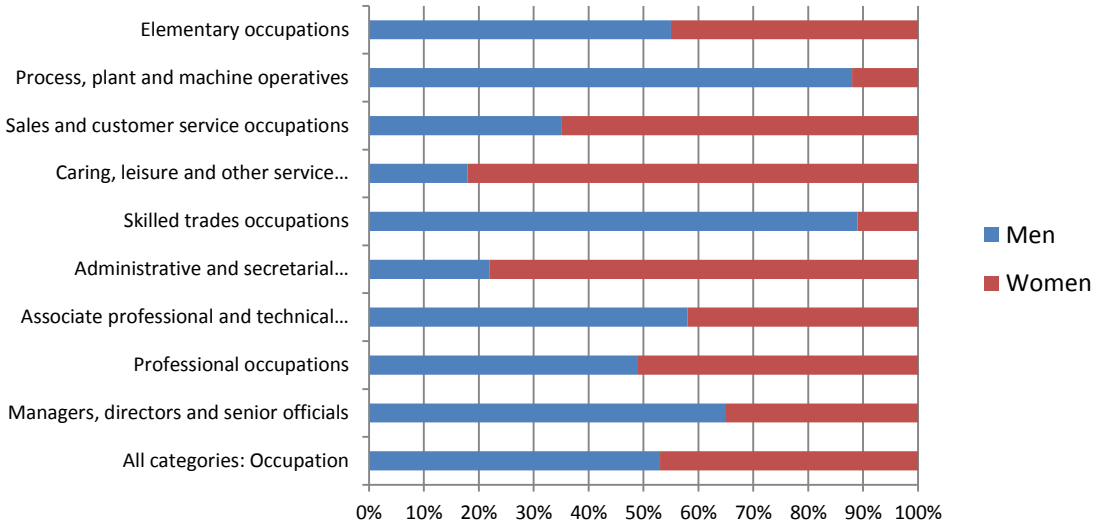
Since the 1970's, several pieces of legislation have encouraged more equal treatment of women within the labour force; examples include the 1970 Equal Pay Act and the 1975 Sex Discrimination Act, among others (ONS, 2013g). As a result of these Acts, the influences of social stereotypes which suggest that females are caregivers and men are economic providers, appear to have decreased. It seems that women show a new, stronger attachment to the labour market, closing the gap in gender differences in labour market participation rates (McKay and Middleton, 1998;Hughes and Bolton, 2002;Greenhaus et al., 2003;Johnson and Zaidi, 2007). Furthermore, postponements in childbearing and marriage (as discussed in section 2.2.1.4), allow women to play an increasingly involved role in the labour market (Cherlin, 1980;Easterlin et al., 1993;Fouarge et al., 2010). Evidently, it is advantageous to remain in employment as opposed to exiting the labour market entirely, if to avoid the "scarring effect" of an interruption (scarring effect is defined in 2.2.1.4) (Nilsen and Resio, 2011). Therefore, the increasing new trend seen within European countries for women to take on part-time work after childbirth, can be anticipated to help these individuals in plugging gaps during their working lives (Pylkkänen and Smith, 2002;Laurijssen and Glorieux, 2011). Complemented by the implementation of legislation which prevents discrimination on the basis of gender within the workplace, which has led to a change in social expectations, it can be anticipated that future generations may be more likely to extend their working lives. However, it is important that policy recognises that individuals who have interrupted their careers to provide care or who have been faced with gender discrimination in the workplace (of which are most likely to be female), may need further encouragement if they are to be economically active in later life.

2.2.2.3 Opportunities at work and unequal treatment between men and women

Full-time work is among the highest-paid type of economic activity and this has implications for pensions and resources in retirement (Christ et al., 2007). Research has found that persons who work part-time are 3.4% (men), and 5.4%

(women) less likely to receive work-related training than full-time workers (Canduela et al., 2012). Women over the age of 50, are significantly less likely to participate in training or to have ever received any training than their younger peers (Canduela et al., 2012). Training opportunities, particularly in the areas of language and office skills, have been found to increase employability, especially if training has been recent (McKay and Middleton, 1998). Women are among the most likely to work in language and office based roles, but with evidence to suggest they are also more likely to be part-time, and with these roles tending to offer training to full-timers, the juxtaposition becomes apparent. Notably, reduced training opportunities have been further associated with old-age (section 2.2.1.2), suggesting that there is potential for a combined disadvantage among persons who work part-time and who are older, illuminating where policy could focus if to encourage extensions in working lives more effectively. Training opportunities often relate to an individual's occupation. Public administration and manufacturing are the most likely industries to provide older-worker training, while construction and transport are the least likely (Leuven and Oosterbeek, 1999;Liu et al., 2011;Canduela et al., 2012;Leppel et al., 2012). Literature notes that occupations can often be identified as stereotypically male or female, leading to segregation within the labour market (LFS, 2009-2011;Eurofound, 2010;August, 2011;Europa.eu., 2011). Occupations which are particularly male-dominated require skills and characteristics which traditionally are attributed to men (e.g. manual construction), whereas public and associate occupations such as those relating to personal services and personal care are more typically female-dominated (e.g. sales roles) (Eurofound, 2010) (see Figure 22).

Figure 22: Occupations by sex among usual residents aged 16-74 in employment, (UK), 2011



Source: (ONS, 2013h-b)

According to the Gender Socialisation Model, women and men have differing work values (Braveman and Page, 2012). While women appear to have a greater concern for the social aspects of their work, men appear more concerned with pay and career advancement (Braveman and Page, 2012). The type of work and the demands a job requires, will be discussed in more detail within section 2.3.3. However, it is clear from the evidence presented within this section that gender appears to be influential upon decisions associated with extending the working life, particularly in relation to the career trajectories and occupations selected by individuals. Notably, economic outcomes of men and women have been linked to their marital status, as is discussed next.

2.2.3 Marital status as a determinant of economic activity

In light of the gender differences discussed within the previous section, it is noted that marital status also appears to influence whether someone chooses to extend their working life or not (Lund et al., 2001;Szinovacz et al., 2001;Szinovacz et al., 2012a). Reviewing the evidence, research has found that married and divorced individuals are among the most likely to be economically active (Szinovacz et al., 2001) while widowed or single and never married persons, are the least likely to be economically active (Phillipson and

Smith, 2006). Research shows that traditional role divisions within the family can influence the occupational status of individuals; further supported by the Social Identity Theory (Tajfel, 1972;Tajfel, 1974;Eurofound, 2010). However, literature has noted that partnership statuses are becoming increasingly diverse, thus it is important that policy-makers recognise the new social identities and roles that people are adopting and the influence that these have on economic activity up-to and beyond the SPA (Cahill and South, 2002;Mock and Cornelius, 2007;ONS, 2011c). The association between economic outcomes and marital status is discussed further by this current section.

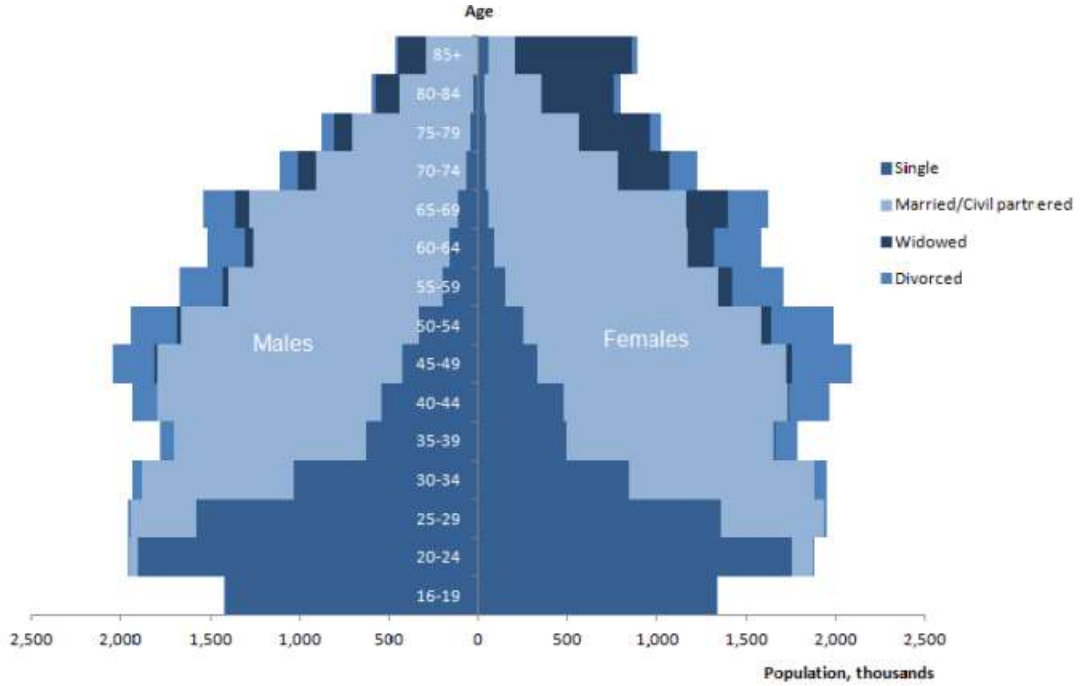
2.2.3.1 Presence of dependants and their influence upon economic activity up-to and beyond the SPA

Existing research has shown kin obligations play a significant role upon economic outcomes (Szinovacz et al., 2001). The theory of 'Linked Lives' suggests that lives are interdependent, whereby research has found that retirement decisions are often made on the basis of others' circumstances (Kim and Moen, 2002). Women appear to be more active in the preservation of kinship ties, while friendships of men are closely associated to their careers (Wilson, 2000;Beach and Bamford, 2014). Consequently, it is unsurprising to note that kin influences, external to the workplace (child and elder-care included) affect economic outcomes of women more often than that of men. Pearlin and Johnson (1977) suggest that married individuals tend to have a larger number of children compared to unmarried individuals. In light of the discussions surrounding the influence of dependent children upon their parents' working patterns, it is anticipated that married women are more likely to interrupt their career. Additionally, married persons often assume caring responsibilities for in-laws in addition to elders of their own family, and thus are responsible for more dependants (Meulen and Wright, 2012). With women interrupting their careers, the dependency upon the male wage for financial security increases, resulting in men being less likely to interrupt their careers and to instead exhibit a more stable trajectory of employment participation until later life (Quick and Moen, 1998;Leuven and Oosterbeek, 1999;Puhani and Sonderhof, 2008). Interestingly, research has further shown that never-married and childless women, do not escape stereotypical caregiving responsibilities (Parker and Lawton, 1994;Agree and Glaser, 2009;Tharenou,

2010). Women in such groups are instead more likely to become heavily involved in care, often providing both physical and personal care (Evandrou and Glaser, 2003). When a carer co-resides with the person they care for, the care provided is often more intense (Parker and Lawton, 1994). Arguably, carers in these circumstances may live with the care recipient in order to provide the care however, this finding points towards a household influence (see section 2.6.1). Being divorced or widowed suggests that an individual has previously been married, but now lacks the support of a partner, similar to that of a single person. However, marriage has been linked to the presence of children, thus divorced and widowed persons are more likely to have child-care responsibilities than single persons who have never been married. The absence of a partner has been suggested to be a motivational influence for wanting to leave the house, meet new people and budget for one's family, resulting in economic activity (Phillipson and Smith, 2006). The Gender Socialisation Model has already touched upon how women place value onto social aspects of work, highlighting how extending their working life may be seen as a place to meet new people (Braveman and Page, 2012). Despite this, other research has noted strains of bereavement which can contribute towards these individuals' wanting to leave work (Miller, 1981;Laurijssen and Glorieux, 2011). Civil partners also have a kin obligation and are likely to be influenced by the responsibilities that accompany these duties in a similar way to heterosexual equivalents (Cahill and South, 2002;Mock and Cornelius, 2007).

Research has found that marital status is closely related to an individual's age (see Figure 23).

Figure 23: Population estimates (ages 16+) by marital status, age group and sex, 2014, England and Wales



Source: (ONS, 2015a)

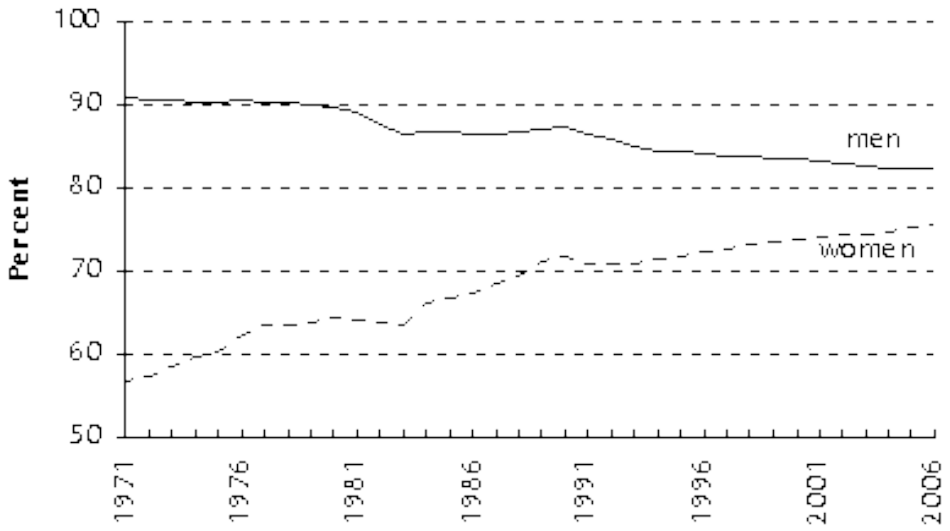
Looking at Figure 23, reports of being single decrease among older adults, while reports for being widowed increase (particularly among women); the reverse is true among younger adults (ONS, 2015a). Trends such as these can help policy-makers, employers and other stakeholders, to understand the periods in individuals' lives where they are most likely to report certain marital statuses and how these may affect their decisions relating to extending the working life. Furthermore, these periods can also be mapped alongside the evidence discussed in relation to transition periods (see section 2.2.1.4), which may further inform stakeholders of potential influences upon economic outcomes relevant to individuals' marital status that may come about in relation to their age.

2.2.3.2 Negotiations surrounding work and managing child and elder-care responsibilities among partners

Within the context of marriage, literature notes that dual-earner couples negotiate child-care arrangements and other aspects of domestic work including elder-care (Peterson and Gerson, 1992). These negotiations also extend to the context of retirement decisions. Literature has recognised

retirement as a "couple phenomena", whereby individual's own retirement decisions are often influenced by their spouses (Kim and Moen, 2002;Colie, 2003). Research has identified retirement-planning as an interdependent process, often negotiated, discussed and coordinated in the context of a relationship (Mock and Cornelius, 2007). Hurd (1990) and Blau (1998), have found that a third of couples, where both spouses are participants in the labour force at age 50, will retire within one year of each other. Similarly Johnson (2004) found that one in five married couples will have husband and wife retiring within the same year of each other. Figure 24 illustrates how the economic activity rates of men and women appear to converge, suggesting that the patterns of economic activity are becoming similar between the genders.

Figure 24: Economic activity rates by gender, (Great Britain), 1971-2006



Source: Court (1995) using Employment Gazette, April 1994

Existing research reports there has been an increase in couples choosing to take "joint retirement" (Pienta and Hayward, 2002;Casanova, 2010). Arguably, the converging economic activity rates of Figure 24 act as evidence to this trend. Further support of this phenomenon, is demonstrated by the increased probabilities of women to be in full-time work when they either have no partner or have a partner who is also in full-time employment (McKay and Middleton, 1998). In addition to evidence that divorce rates have increased, it is interesting to note that the full-time participation rates of women have also shown to have increased (Smeaton and McKay, 2003). Evidence surrounding

partner effects would suggest that these increases in full-time work uptake by women and the higher levels of divorce, are related, and thus contribute to encouraging women to extend their working lives (Smeaton and McKay, 2003). It can be anticipated that the synchronising of retirement by couples is likely to be a useful predictor for future retirement patterns (Colie, 2003).

Having a partner has been identified as a significant predictor of early retirement, particularly among women (Lund et al., 2001). Pienta and Hayward (2002) found in their analysis of the Health and Retirement Study (HRS), 1992, looking at the retirement plans and expectations of American couples, that women are often more influenced and willing to mould their own retirement plans to suit and synchronise with that of their husbands' plans. This was found to be particularly true if women needed to rely on their partners' retirement income or when they were in a satisfied relationship where they looked forward to spending more time with their partner during retirement (Centre for Research into the Older Workforce, 2004;Mock and Cornelius, 2007). However, when examining the predictors of retirement among men, it was apparent that men appear more influenced by their employers as opposed to their partners (McKay and Middleton, 1998;Vickerstaff, 2006). Research suggests that men plan more than women do in terms of their retirement, and this may be related to their more salient attachment to their work and consequently may be why they are less influenced by their female partners' plans (Mock and Cornelius, 2007). It is postulated that men's attachment to their work is related to their job status, whereby factors such as economic success/ high job status, family dependency/ resource and financial demands, among other factors, are often linked to the retirement decisions they make (Adams et al., 2002;Mock and Cornelius, 2007).

Interestingly, contradictory evidence surrounding female sensitivity to their spouses' retirement decisions, has been provided by Colie (2003). Colie (2003) explored the retirement decisions in household contexts using Waves 1-5 (1992-2000) of HRS ((the same dataset used by Pienta and Hayward (2002)'s research detailed in the previous paragraph)). The research by Colie (2003) found that men and women instead exhibit similar responsiveness to their own individual economic incentives such as social security and private pensions. However, within the context of a couple, husbands' retirement

behaviour was found to be very responsive to their wives financial incentives, while women were not responsive to their husbands' financial incentives. Colie (2003) suggests that this is due to the complementarities of leisure, that being where partners coordinate work and leisure to spend time together, being asymmetric (Deschryvere, 2005).

2.2.3.3 Health within the context of a couple and the influence this has for their economic activity in later life

In addition to verbal negotiations within the partnership context, there is evidence to suggest that a partner's health is influential upon economic outcomes in later life (Hagedoorn et al., 2001). For example, age is associated with health declines and the increased likelihood of workforce exit among both genders (Adams et al., 2002). Research shows that women have on average a higher life expectancy, however, they often marry men who are older than themselves (South, 1991;Young et al., 2005;Coles and Francesconi, 2011). This can result in women undertaking caregiving for their spouse, a factor which has been identified for reducing chances to work in later life (Dentinger and Clarkberg, 2002) (see sections 2.3 and 2.6.1).

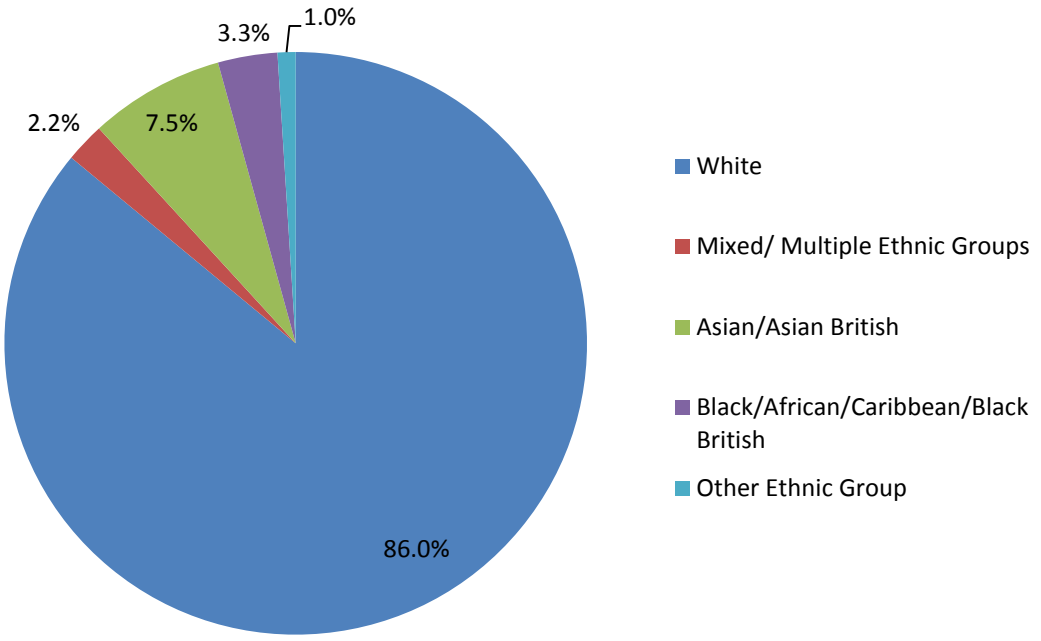
However, marriage has also been suggested to have protective health benefits (Pienta et al., 2000). For instance, research has noted that married persons have access to social support, better finances (particularly if both are in paid employment) and better quality of life (QoL) reports (Pienta et al., 2000;Phillipson and Smith, 2006;Kubicek et al., 2010). Generally, it is found that persons who report good health are more likely to extend their working lives (Poole, 1997) (see section 2.3), explaining perhaps why married persons who experience health benefits are more likely to be economically active up-to and beyond the SPA.

2.2.4 Ethnicity as a determinant of economic activity

The final demographic characteristic discussed, which has been identified as a determinant for influencing whether a person is economically active up-to and beyond the SPA, relates to ethnicity. Katbamna and Matthews (2006:5) define ethnicity as a fluid concept, comprising of a variety of features including 'skin colour, national or regional identity, culture, religion, country of birth,

language, dress and political affiliation'. Figure 25 illustrates the ethnic diversity of society in England and Wales for 2011.

Figure 25: Ethnic groups, (England and Wales), 2011.



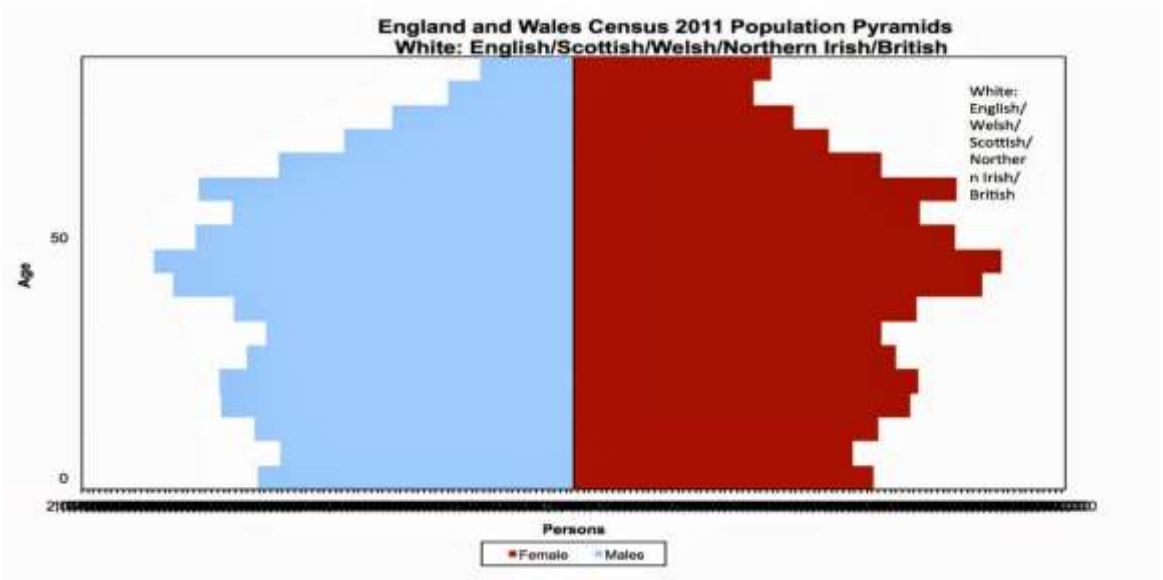
Source: ONS (2012b-b).

Evidently, white persons make up the largest percentage of ethnic groups however, other ethnic groups contribute to almost a quarter of the population.

2.2.4.1 Age structure of ethnic populations

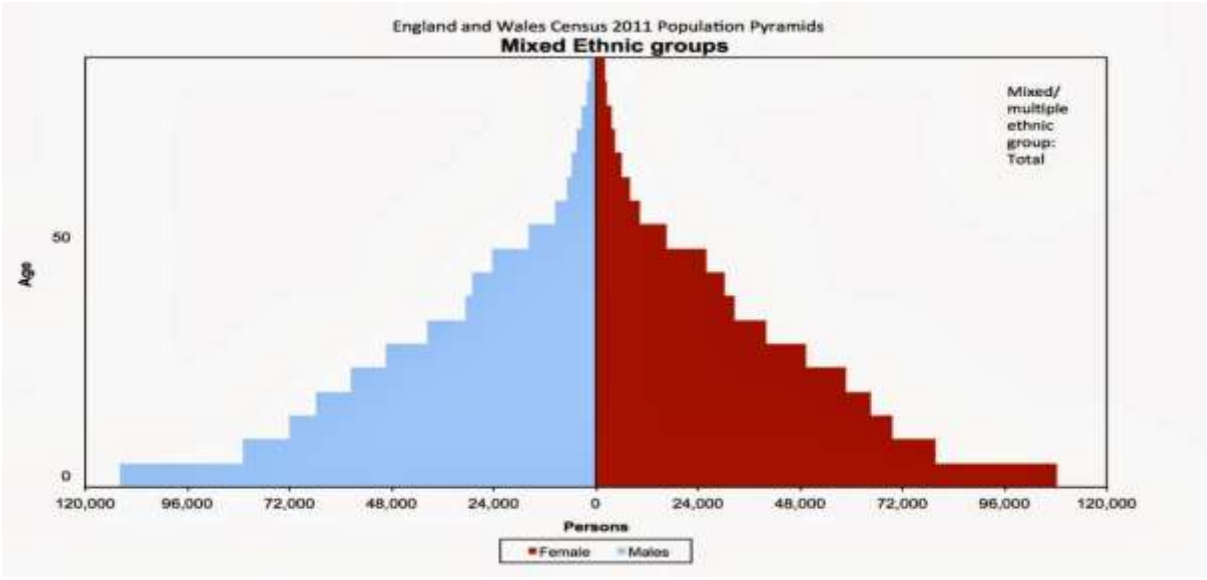
The age distribution of the ethnic minority population within England and Wales is considerably younger than that of white British individuals, illustrated by Figure 26 and Figure 27.

Figure 26: Age distribution for White Groups, (England and Wales Census), 2011



Source: (England and Wales Census, 2011)

Figure 27: Age distribution for Mixed Ethnic Groups, (England and Wales Census), 2011



Source: (England and Wales Census, 2011)

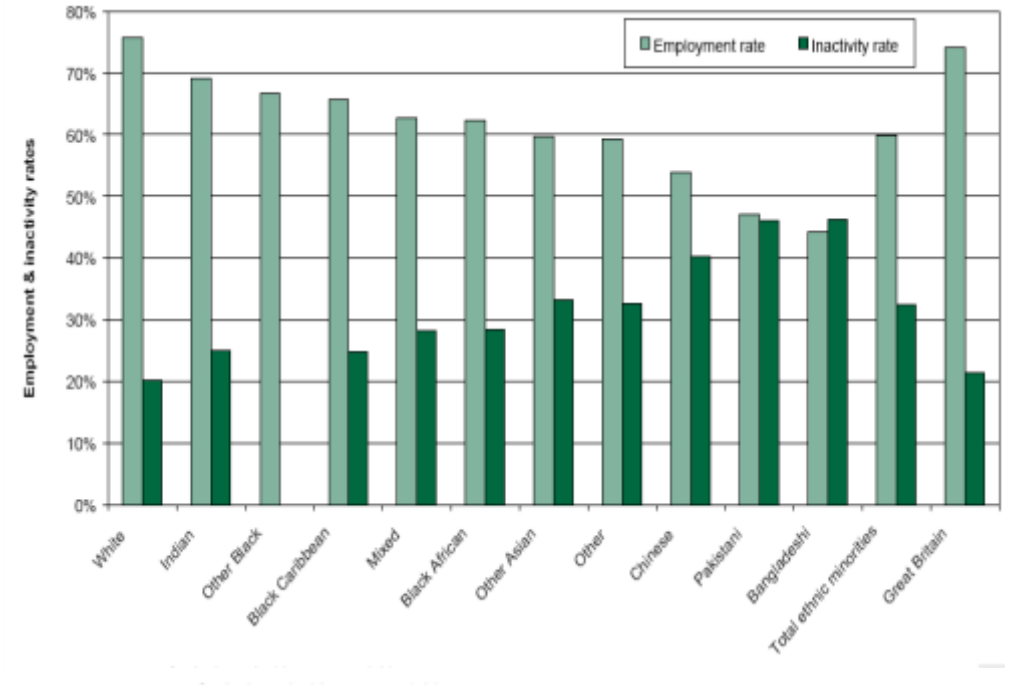
Nevertheless, with the projected number of Black and Minority ethnic (BME) populations set to reach 2.7 million by 2051, the ageing of these individuals is likely to be akin to the "White British" experience (discussed in section 1.2) (Katbamna and Matthews, 2006;ONS, 2012b-b;Smith, 2013). This increase in the BME population, poses significant implications and challenges for future

policy surrounding extending working lives and thus it is important that policy-makers recognise diversity when formulating policy targeting working in later life (Khan, 2012).

2.2.4.2 Working patterns of ethnic minority groups

Evidence has found that the working patterns of ethnic minorities differ from British white individuals (Burton, 1997;Evandrou, 2000;Jensen, 2005). For instance, Owen et al. (2000) have found that economic activity rates among white individuals are higher than that of minority ethnic groups, a finding which is further echoed by the results of Figure 28.

Figure 28: Employment and inactivity rates by ethnic group, (UK), 2008



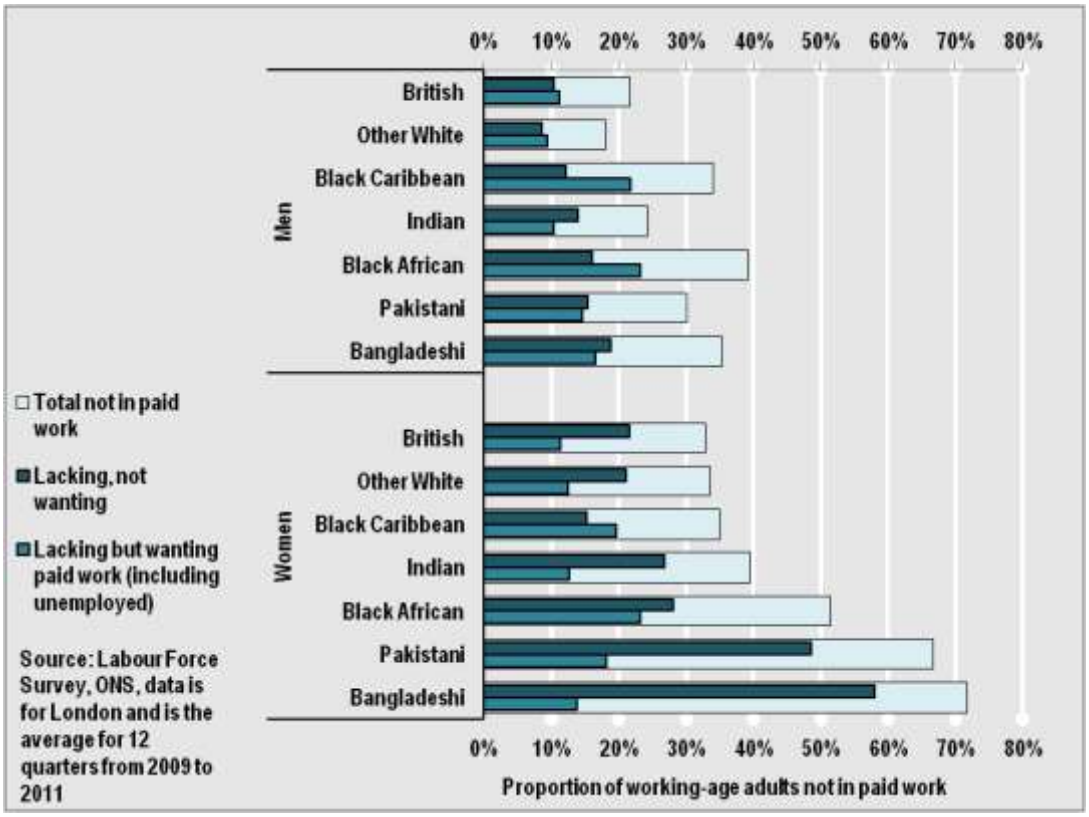
Note: Inactivity for "other black" was not available.

Source: Parliament (2008) using C&AG Report, Figure 4.

Building upon existing findings, other research has shown that Bangladeshi and Pakistani individuals, particularly unmarried women in such groups, exhibit the lowest rates of economic activity (ONS, 2005). Interestingly, Figure 28 and Figure 29, both suggest that Bangladeshi and Pakistani individuals are particularly disadvantaged in terms of economic activity and are more likely to report not being in paid work compared to other ethnic groups. Figure 29 suggests Pakistani women are the most likely to be economically inactive. This figure also shows that patterns of work, this instance being type of non-paid

work, among men and women, continue to show marked gender differences like those noted in section 2.2.2.

Figure 29: Working-age adults in London not in paid work by gender, ethnicity and type of non-paid work status, (London), 2009-2011



Source: (LFS, 2009-2011)Labour Force Survey, ONS data, 2009-2011.

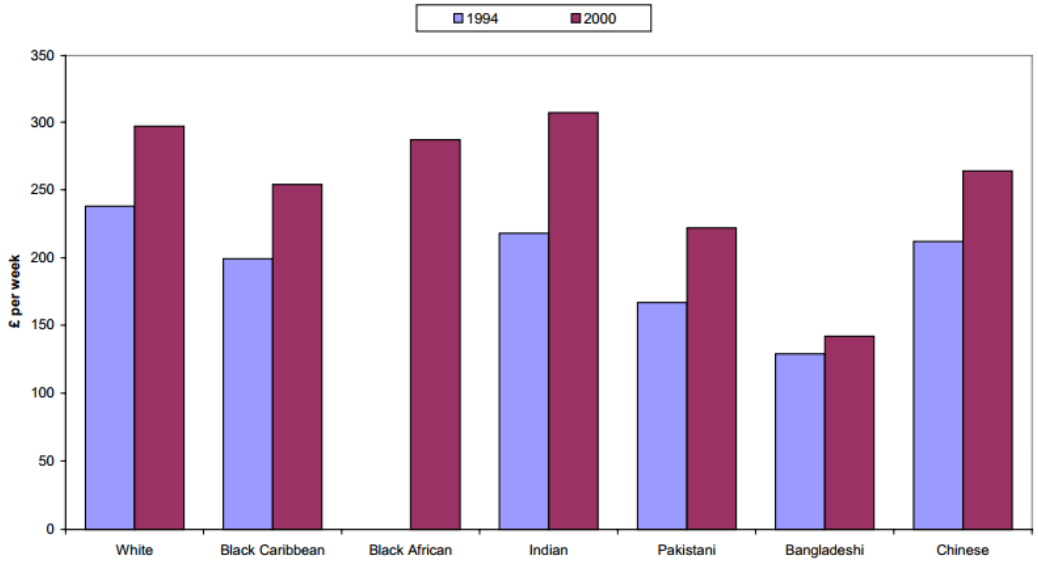
Ethnicity is identified as playing a key influence in shaping an individual's social identity/role (Tajfel, 1974;Hogg and Reid, 2006). Literature reports that minority groups tend to take on different occupations to those of their white counterparts, which arguably may be a result of social identity differences. Persons most likely to be in professional occupations are those from Indian, Chinese, White Irish and other non-British White groups while, those from Black, Bangladeshi and Pakistani groups, are among the least likely to be in professional occupations (ONS, 2005). Research by Evandrou (2000), further suggests that despite the diversity among ethnic minority groups, there is a tendency for individuals from such groups to report upon retirement that their last occupation was from a manual background. Literature surrounding the implications such occupations have for extending the working life are discussed in section 2.4.4 in more detail.

2.2.4.3 Education deficits and the influence this has for economic activity in later life

Barnes and Taylor (2006) note that migrants are at particular risk for arriving with a lack of UK/English (recognised) qualifications. A lack of recognised qualifications limits and hinders these individuals' abilities to find work, which may explain the less professional roles undertaken by migrants and their lower rates of economic activity, already discussed. Furthermore, the work of Owen et al. (2000) has found that economic activity rates decline dramatically after the age of 55 among all ethnic minority groups. This may be a clear demonstration of the socio-economic disadvantages imposed by educational deficits of such individuals, particularly those without UK recognised qualifications and who are less proficient in spoken English (Barnes and Taylor, 2006). Khan (2012) suggests that the first Wave of migrants arrived post-1948, and are now approaching retirement age. With this in mind, it can be postulated that many of the individuals who were born overseas, are likely to find getting employed in old-age even more difficult if they have not obtained UK recognised qualifications earlier in their lives. It can therefore be anticipated that similarly to their apparent differences of working patterns, ethnic minority groups are likely to also exhibit differences in their retirement behaviours.

Research demonstrates that there is a positive association between an individual's level of education, lifetime income, and reports of health and well-being (Ross and Wu, 1995;White, 2007;Dewilde, 2012). It is interesting to note the discussions surrounding wage gap differences of ethnic minorities and their white counterparts, as this may be a contributing factor for the working and subsequent retirement patterns of these individuals. Evidence from Platt (2006), whose work analysed the LFS 1994-2000, and compared the average hourly earnings of full- and part-time employees from a selection of ethnic groups, found substantial gender pay-gaps within all minority groups apart from Indian men, illustrated in Figure 30 and Figure 31 to follow. These two figures show that Indian, Bangladeshi and Pakistani individuals are on the lowest wages of the ethnic minority groups. These figures also demonstrate that men are consistently paid more than their female counterparts, once more suggesting a gender difference.

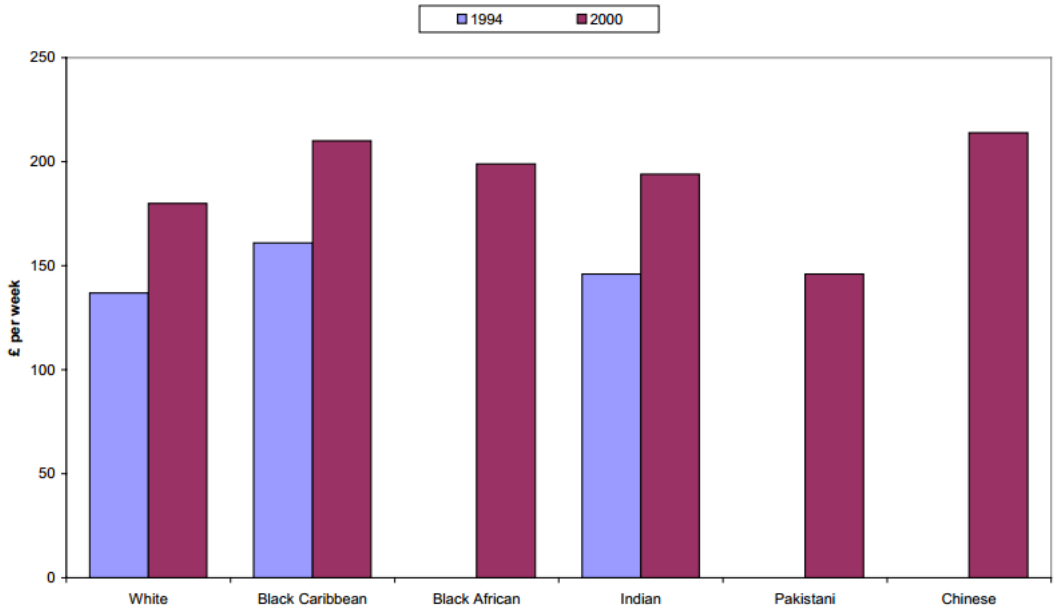
Figure 30: Average net weekly pay in main job (£ per week) men, by ethnic group, (Britain), 1994-2000



Notes: (i) Respondents aged 64 or younger; (ii) Question asked of employees only; (iii) Sample sizes for Black African (1994) net weekly pay are too small to be accurate and are excluded.

Source: Cabinet Office (2003) using LFS, 1994-2000, weighted data.

Figure 31: Average net weekly pay in main job (£ per week) women, by ethnic group, (Britain), 1994-2000



Notes: (i) Respondents aged 64 or younger; (ii) Question asked of employees only; (iii) Sample sizes for Black African (1994), Pakistani (1994) and Chinese (1994) net weekly pay are too small to be accurate and are excluded.

Source: Cabinet Office (2003) using LFS, 1994-2000, weighted data.

Platt (2006) notes that the average hourly female pay for minority women, was almost three times lower than that of the pay for minority men, whereby

Pakistani women were the worst affected. Figure 30 and Figure 31 echo this finding and show that these persons are indeed at increased risk for being on lower average weekly pay. The Low Pay Commission's first report on the topic of minimum wage, has recognised ethnic wage inequalities, identifying it as an area in need of further research (Platt, 2006). Lower wages often reflect a lack of access to job opportunities, providing a better understanding of why ethnic minority groups report to be from manual occupational backgrounds, while white persons are instead more likely to be in professional roles (see section 2.3.2 and 2.4 for more discussion of the influence this can have for extending working lives) (Cabinet Office, 2003). Moreover, it is likely that inequalities in wages may be a further contributory factor for such individuals to bring forward their employment exits.

2.2.4.4 Household influences on economic activity among ethnic groups

A final consideration surrounding the variable of ethnicity and its association with economic activity, relates to family and household influences (also previously discussed in section 2.2.3). Research suggests that individuals from ethnic groups tend to live in larger, multigenerational family households leading to more extensive exposure to potential familial influences upon their retirement decisions (Angel and Hogan, 1992;Himes et al., 1996;Flippen and Tienda, 1998). It is interesting to note that ethnic minority groups, particularly women, are more likely to be informal caregivers of intensive care (20+ hours per week) (Young et al., 2005). This supports the observations of Owen et al. (2000) who found that after the age of 55, exits from work are particularly high among women from ethnic groups (see section 2.6.1 for more details on caring influences). Notably, migration also plays an important role in the shaping of family structures (for example, influencing which family members are in the country) and consequently determines the household familial influences an individual is exposed to, outlined previously in section 2.2.3. Literature has noted that there are frequently distinctly different cultural expectations surrounding remittance flows of money, whereby working patterns among persons who fall into ethnic minority groups are likely to be influenced by these expectations which may determine whether they extend their working lives (Hammond, 2011). Additionally, the influence of one's

intention to return to country of birth, may also play a role upon their retirement and extending working life outcomes (Khan, 2012).

It is anticipated that the BME older population will have risen from 230,000 (2001 Census Data) to 2.7 million by 2051, highlighting the considerable policy implications for future retirement and pension provisions of these groups (Khan, 2012). There is an evident need for policy-makers to understand how to encourage these persons to extend their working lives by removing barriers which push them out of work early (Mann, 2001:180;Cabinet Office, 2003;Katbamna and Matthews, 2006:5).

2.2.5 Summary of demographic individual characteristics associated with economic outcomes

Literature discussed within this section has examined a selection of demographic factors in relation to economic activity among persons who are above/ below the SPA. Characteristics, which have been identified as associated with economic outcomes of later life, include an individual's age, gender, marital status and ethnicity. A positive association has been found between exits from economic activity and age (Adams et al., 2002). It is argued that this reflects the social identity of a person (Tajfel, 1972;Tajfel, 1974), which has been shown to be highly influenced by the factors of gender, marital status and ethnicity. A consistent trend noted across these individual characteristics relates to their links with health outcomes, whereby older adults tend to be less healthy (Townsend, 1959;Wheaton, 1990;Midanik et al., 1995;Poole, 1997). It appears that men are often disadvantaged in terms of their health as a result of their occupations which can be stereotypically male suited (physical labour), leading to their exits (Young et al., 2005;ONS, 2013c). However, women are more influenced by interruptions to their careers, often evoked by care of children and elders (Pylkkänen and Smith, 2002). Persons from ethnic backgrounds continue to exhibit these gendered trends, however are often yet more jeopardised in employment due to deficiencies of education and job opportunities (Khan, 2012). Married individuals are among the most likely to continue working beyond the SPA, and tend to report the best health (Pearlin and Johnson, 1977;Cherlin, 1980;Blau, 1998). Being married, provides links to social support in the form of a spouse and often children. There is

also evidence to suggest that marital status can influence decisions of retirement and working (Lund et al., 2001;Szinovacz et al., 2001;Szinovacz et al., 2012a). It is evident that demographic characteristics vary across individuals; however their influence as independent characteristics appears to be quite consistent across the literature (Phillipson and Smith, 2006). Finally, it was also apparent that demographic characteristics are linked to individuals' socio-economic status, providing yet more evidence that individual characteristics, which influence economic outcomes in later life, are diverse.

The next section, examines research findings surrounding health and its influence upon economic activity in later life.

2.3 Health characteristics of economic activity up-to and beyond the SPA

The second selection of characteristics which shall be discussed as part of this literature review, encompass both physical and psychological aspects of health (Lund et al., 2001;Morack et al., 2013) (see sections 2.3.6 and 2.3.7). The literature has found that a diverse range of techniques are used to assess a person's health, with measures often being distinguished as either subjective or objective (Bowling, 1997). Health is widely identified across the literature as associated with economic outcomes of later life (Vickerstaff, 2010;Robroek et al., 2013). However, it was consistently evident across the literature that health is influenced by additional characteristics (Bowling, 1997). The following sub-sections will identify key aspects of health and their association with economic activity in later life in greater detail.

2.3.1 The influence of age upon health and its association with economic outcomes

The literature reports that an individual's health (physical and psychological) has a tendency to get worse with increasing age (Kimani et al., 2012;WHO, 2013b) (see section 2.2.1). Ill-health has been associated with exits from the labour market, as it often reduces an individual's capacity and willingness to be economically active (Adams et al., 2002;Palmer et al., 2013). Although the influence of age upon health is recognised by legislation, whereby age is often

used as a reliable and objective predictor of workplace exits (Lund et al., 2001;Robroek, 2011;Bytheway, 2012), it should be noted that the effect of ill-health upon economic outcomes can also vary according to the age of the individual affected by illness. To demonstrate, it is interesting to note research by Macnicol (2015) who states that early exits from the labour market are most commonly associated with reports of ill-health, whereby younger individuals are more likely to report ill-health as the cause for their early exits. In light of this finding, it can be argued that older-workers who continue to be economically active are likely to be healthier. Other research, such as work by Idler (1993) who used longitudinal data to understand age differences in self-assessments of health, has found that older adults appear to give disproportionately positive health assessments. Other literature offers insight into this finding, and suggests that interpretations and expectations of health are likely to vary by cohort resulting in individuals having different understandings of what health, entails (Chen et al., 2007). Termed by some literature as "health optimism", this trend for older adults to report positively about their health, has been found by many other studies too (Jeste et al., 2013;Sörensen et al., 2014). Some evidence argues that optimism can be a buffer for health, while other evidence suggests health optimism is a method of coping used by older adults whereby they modify their traditional conceptualisations of health from physical/ functional definitions to ones based instead on personal or social characteristics (Peck, 1968;Borawski et al., 1996;Wurmab and Benyaminic, 2014).

Literature has found that healthy and disability-free life expectancies have increased simultaneously to longevity, resulting in the experiences of old-age to have become transformed (Lievre et al., 2007). Nevertheless, older ages show a distinct positive association with poorer health. The EWLA suggests that improved health at older ages, recorded by healthy life expectancy estimates, may permit persons to extend their working lives. However, it is imperative that the effects of extending the working life are monitored to ensure health and well-being estimates are maintained, or better, improved (Lloyd-Sherlock et al., 2012a).

2.3.2 Health-risk behaviours and their influence upon economic activity

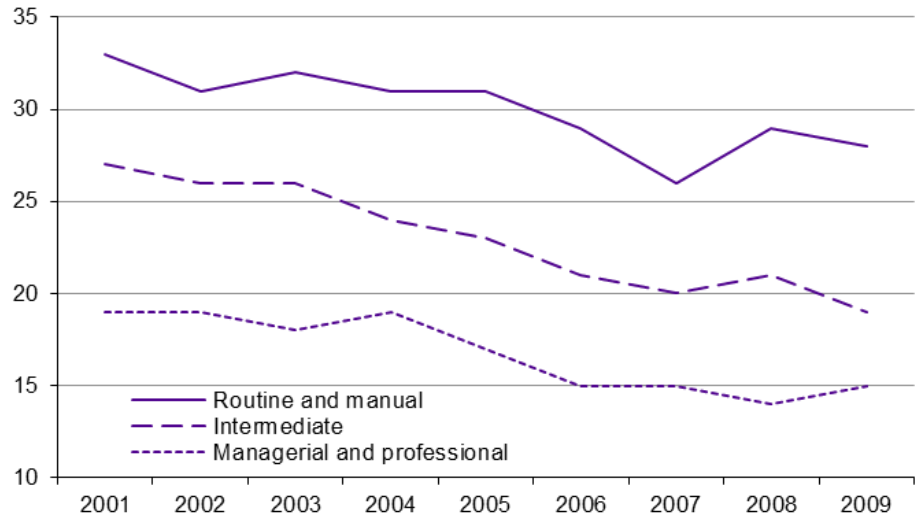
Pre-existing research has found that both ill-health and disability, play an influential role upon economic outcomes (Banks et al., 2006;Scholes et al., 2008;Banks et al., 2010). For instance, Vickerstaff (2006), using 160 semi-structured interviews examining employee experiences of the retirement process, found that 30% of reports accounting for early retirement were associated with an individual's own ill-health/ disability. Separate evidence has also shown ill-health to be associated with lost productivity at work, sick leave and absence (Lund et al., 2001;Houses of Parliament, 2011). Literature demonstrates that ill-health is often associated with an individual's own behaviour and lifestyle (Fraser et al., 1997). Interestingly, among those most likely to have ill-health, men and low earners are the most commonly affected (Lund et al., 2001;Houses of Parliament, 2011). These same individuals are also identified by the literature as being more likely to participate in health-risk behaviours (which can include behaviours or lifestyles involving tobacco use, alcohol consumption, sedentary lifestyle and obesity), suggesting that behaviour and health outcomes are interlinked (McNair, 2011;Robroek, 2011;Shacklock and Brunetto, 2011;White, 2012;Winkelmann-Gleed, 2012). Cross-sectional and longitudinal studies have shown that health-risk behaviours are associated with later life health problems, chronic conditions and mortality; which have also been related to exits from economic activity (US Department of Health and Human Services, 1990;McGinnis and Foege, 1993;Fraser et al., 1997;Lantz et al., 2001). This suggests that persons participating in health-risk behaviours are less likely to be economically active in later life.

According to the Social-Economic Gradient (SEG) of health, individuals from lower social positions, tend to exhibit poorer health (discussed further in section 2.4) (Adler et al., 1994). The Marmot Review (2010) notes that health inequalities result from social factors, including: child development, education, employment, working conditions, living standards, housing and neighbourhood conditions, among others (Marmot, 2010). In line with observations of this Review, Adler et al. (1994) and Berkman et al. (2014), report that health-risk behaviours are closely tied to socio-economic status

(SES) and health outcomes. Such findings help to guide public health policy in identifying individuals who are particularly at risk from exiting the labour market prematurely (see section 2.4).

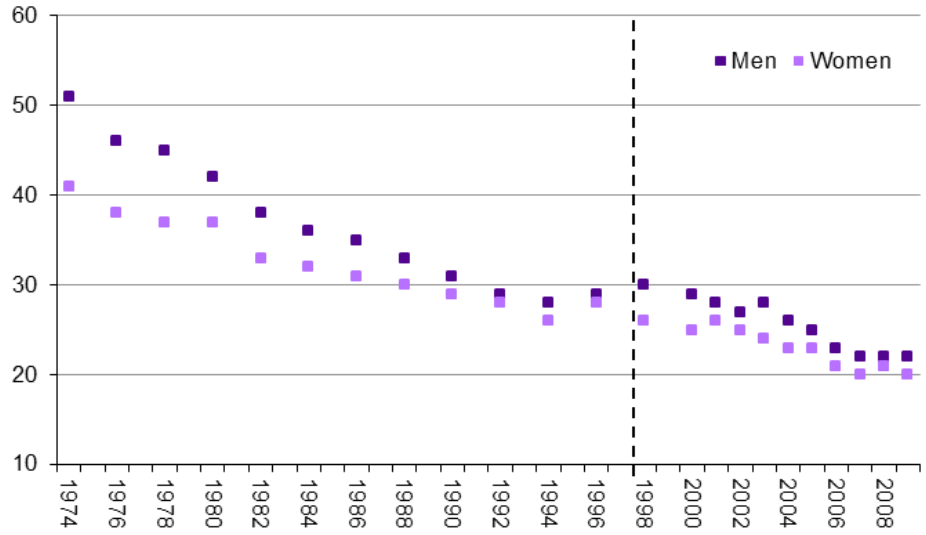
Research recognises some individuals are more susceptible to participating in health-risk behaviours (Sanders et al., 2005). Figure 32 and Figure 33 show the influence of smoking, controlling for effects of National Statistics Socio-Economic Classification (NS-SEC) status (referred to as occupational social class throughout this thesis) and sex.

Figure 32: Adult cigarette smoking level by household occupational social class (%), (England), 2001-2009



Source: ONS (2012b-a:11) using General Lifestyle Survey, ONS.

Figure 33: Adult cigarette smoking levels by sex (%), (Great Britain), 1974-2009



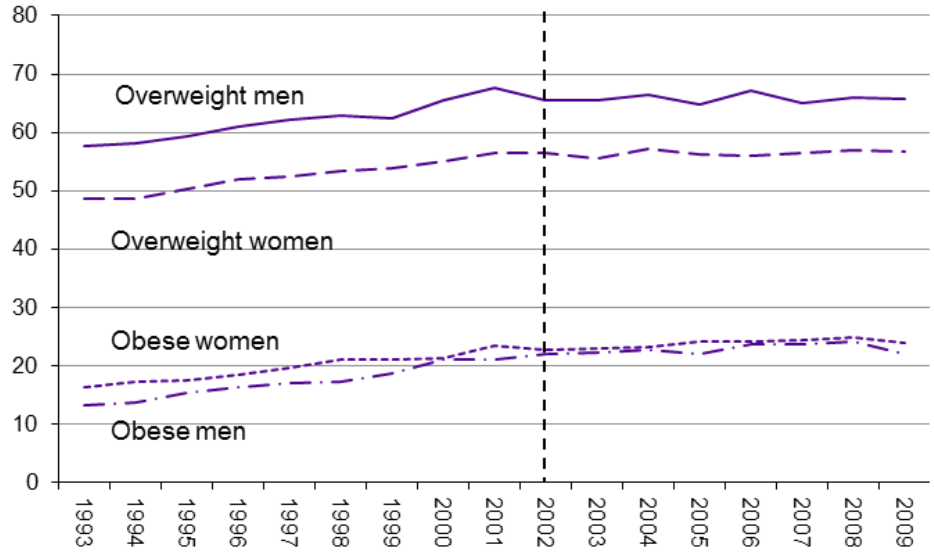
Source: ONS (2012b-a:11) using the General Lifestyle Survey, ONS.

Observing the findings of Figure 32 and Figure 33, it is apparent that smoking levels have declined in recent years, particularly since 2004. This finding lends support towards the conclusions drawn in section 2.2.1.3 surrounding the influence of policy upon individuals' behaviour. Arguably, declines in smoking levels are a response to public smoking bans, which were implemented in England at this time (The Health Act 2006). Interestingly, Figure 32 shows that those from manual occupational social class backgrounds are the most likely to smoke, supporting the observations of the Marmot Review surrounding health inequalities. Consequently, this also highlights individuals who are at the greatest risk for exiting employment (Marmot, 2010) (see section 2.4.4 for further evidence surrounding the influence of occupational social class). Figure 33 instead examines the influence of gender upon smoking levels. This figure clearly shows that men are more likely to smoke than women (see section 2.2.2). Interestingly, evidence has found men are more likely to work in manual occupations, highlighting that these individuals may face a double-disadvantage for participating in health-risk behaviours, which consequently are likely to influence whether they are economically active in later life (Charles and Grusky, 2005).

In addition to health-risk behaviours clustering among individuals, the simultaneous occurrence of such behaviours, has also been found (Sanders et al., 2005). Figure 34 illustrates percentage estimates of individuals who are

obese and overweight in England; calculated using their Body Mass Index (BMI). Evidently, these percentages have increased yearly. The OECD (2012) reported that on average in the UK, people work 1,654 hours per year, 32 hours per week (OECD, 2012). Further examination of these periods of time at work has revealed that a large duration of this time is spent sitting at a desk (Probert et al., 2008). Sedentary lifestyles, such as sitting for prolonged periods has been identified by Mackey (2013) to be positively correlated with chronic diseases such as obesity, illustrating how an ageing, and increasingly deskbound society, is at risk for becoming overweight or obese.

Figure 34: Adult obesity (BMI >30kg/m²) and overweight (BMI >25kg/m²) percentages by sex (%), (England), 1993-2009

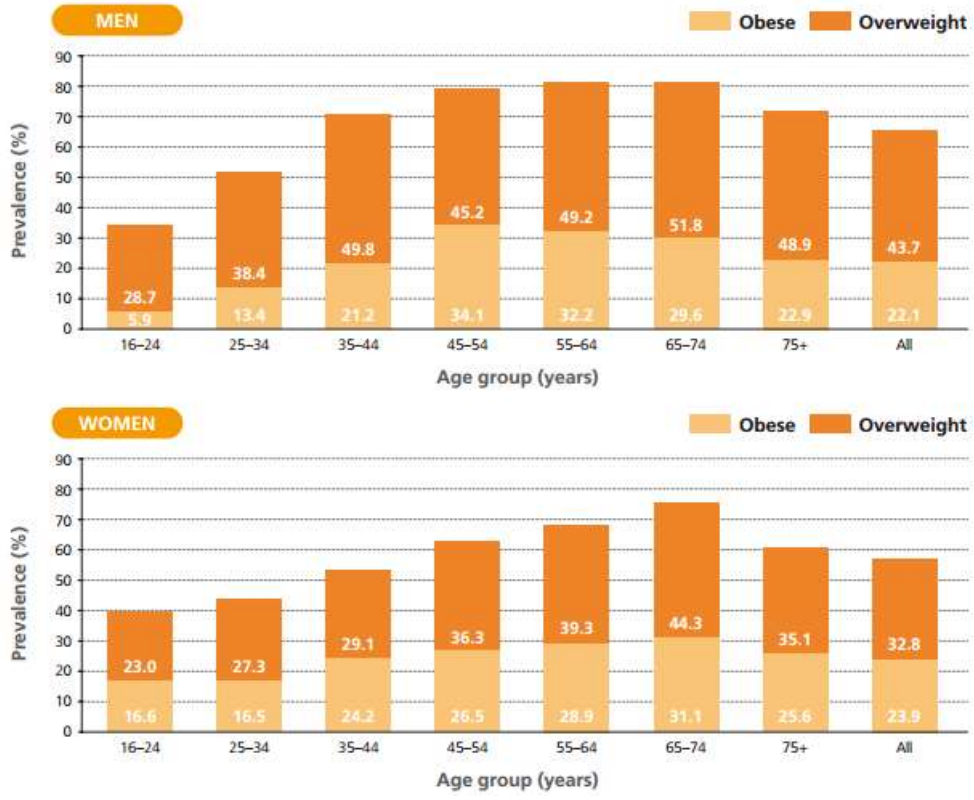


Source: ONS (2012b-a:12) using HSE, Department of Health (DoH).

Figure 34 shows a distinct gender difference in the reports of obesity and being overweight, whereby men appear more likely to be overweight, while women are more likely to be obese. The percentage of individuals reporting to be overweight exceeds that of obese individuals. Men report the highest levels for being overweight. Coupling this with evidence surrounding smoking also being more common among men, can help highlight how these individuals may be at greater risk for leaving the labour market due to the combination of health-risk behaviours they participate in. Being overweight/ obese, poses negative health effects such as heart disease, some types of cancer, high blood pressure, stroke and tooth decay (AgeUK, 2013). Interestingly, these health

problems are also associated with old-age declines. Consequently, it is important that policy-makers target individuals who are particularly at risk of high BMI's through either prevention or intervention strategies, if they are to help individuals in extending their working lives (Waddell et al., 2008;Rechel et al., 2009). Additionally, analysis of dietary differences across cohorts reveals that younger generations are consuming diets which are higher in salt, fat and sugar. It is believed that this has contributed to the obesity statistics seen in Figure 34 and Figure 35 and the apparent increases in BMI (Massiera et al., 2010). The National Obesity Observatory's analyses of the Health Survey for England (2009) have identified older adults (in particular those aged 55-74) are among those at greatest risk for obesity/ being overweight, as demonstrated by Figure 35.

Figure 35: Prevalence of overweight and obesity by age group, men and women (%), (England), 2009

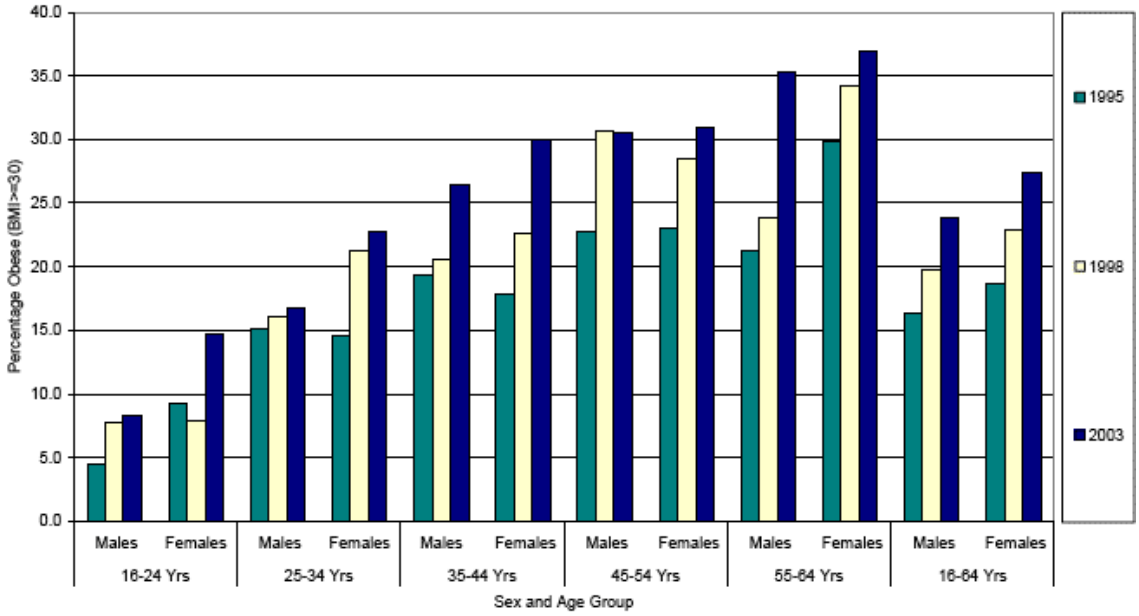


Source: National Obesity Observatory (2011:5) analysis of the Health Survey for England.

Although evidence suggests that persons aged 55-74 years old are among the most likely to be overweight, Figure 36 provides evidence from Scottish estimates, to show that obesity is increasing across all age groups, year-on-

year. Given that obesity has been associated with early retirement and health problems, it can be postulated that these increasing occurrences of obesity, may play a role in shaping economic outcomes in the future (Houston et al., 2012).

Figure 36: Levels of obesity, by gender and age group (%), (Scotland), 1995, 1998 and 2005



Source: The Scottish Government (2006) using the Scottish Health Survey.

Like the implementation of public smoking bans (e.g. Health Act 2006- encouraging a 'Smokefree England'), campaigns including the Department of Health's 1994, 5-a-day initiative, have provided incentives and encouragement for healthy eating, to help reduce obesity (National Cancer Institute, 1992). It is vital that such initiatives continue if those who are at risk from participating in such behaviours are to be discouraged (see Figure 32-Figure 36). Such discouragement is likely to promote positive health outcomes and consequently may provide people with more opportunities to be economically active in later life.

2.3.3 Job demands and their influence upon economic activity up-to and beyond the SPA

The evidence discussed surrounding health-risk behaviours has touched upon manual workers being more likely to smoke (see Figure 32). Other literature has also found that health tends to relate to an individual's occupation and working conditions (Hayward and Hardey, 1989;Adams et al., 2002;Houses of Parliament, 2011;McPhedran, 2012;Van Solinge and Henkens, 2014). Literature surrounding the influence of an individual's social occupational status is discussed in more detail within section 2.4.4. However, for the purpose of this sub-section, the link between occupation type and health outcomes will be the focus. One model which examines this association, is the "Job Demands-Resources" model (Bakker and Demerouti, 2007). This model helps to identify the balance between demands/barriers/negatives and resources/opportunities/positives, associated with one's job, which can be used to help predict whether someone is more likely to take early retirement (Kubicek et al., 2010). Evidence has found that cognitively demanding work, such as work which requires quick reaction times and information processing abilities, is associated with postponed retirement (Farrow and Reynolds, 2012). The Job Demands-Resources model (Bakker and Demerouti, 2007) suggests that cognitive and mental stimulation can lead to health benefits, including protection from diseases such as dementia; allowing these individuals to continue in employment (Bosma et al., 2003). Contrary to this, physically-demanding jobs (which require mobility, strength, balance, dexterity) are often associated with early retirement outcomes. It is postulated that these early exits often are a result of "wear-and-tear" effects and disabilities evoked by physically strenuous working conditions and age-related physical declines, induced by physically-demanding jobs (Pienta and Hayward, 2002;Kubicek et al., 2010;Farrow and Reynolds, 2012). For example, research by Johnson and Zaidi (2007) found that men aged 45+ years old, working in manual jobs, show declines in their earnings. Johnson and Zaidi (2007), believe that this finding comes due to age and wear-and-tear declines in physical strength, leading to exits from the labour market.

Problems associated with both physically and cognitively demanding work, such as declines in mobility, strength, dexterity and balance; sensory losses

including hearing and vision; and cognitive changes such as slower information processing and delayed reaction times, have been attributed towards workplace accidents (Farrow and Reynolds, 2012). Notably, these same factors have also been identified by the literature as affecting predominantly older adults, suggesting older-workers within these types of occupations are likely to be at an increased risk (Houses of Parliament, 2011:3;Farrow and Reynolds, 2012:4-5). In light of this evidence, employers recognise the potential benefits which can be ascertained from providing up-to-date health and safety/ health-promotion training opportunities such as physical handling, to their staff (Robroek, 2011;Winkelmann-Gleed, 2012). Older-workers are likely to benefit from such interventions which may reduce the risk and severity of potential accidents (Farrow and Reynolds, 2012). However, evidence has shown that these individuals often are limited in their access to such opportunities (Leuven and Oosterbeek, 1999;Leppel et al., 2012). In addition to the potential to avoid such problems, it should also be recognised that the benefits of prevention have been identified. These include improved fitness/ health, or leading to an appreciation of leisure time, consequently encouraging postponed retirement (US Department of Health and Human Services, 1990;Strain et al., 2002;WHO, 2002). This illustrates the additional importance of recognising the influence of other variables such as one's occupation type upon economic outcomes in later life (see section 2.4) (Pienta and Hayward, 2002;Parry and Taylor, 2007).

2.3.4 Gender differences and partnership effects upon health and their influence on economic outcomes.

Statistics have shown that despite greater longevity, chronic conditions and disability are more prevalent among women (Orfila et al., 2006). Although this may be a result of the physiological gender differences, other research has noted that women go to the doctor more often than men (Zunzunegui et al., 2008;Simon, 2010). Attending the doctor is associated diagnosis and improved health, access to medication and prevention interventions, thus arguably women's longer lives may be facilitated by such actions (Orfila et al., 2006;Greene and Hibbard, 2012).

In terms of the type of health issues men and women face in the context of a partnership, research has found psychological distress can be evoked in women due to their husbands' poor health (Hagedoorn et al., 2001), whereas men appear to be less affected by their wives' poor health (Hurd, 1990;Colie, 2003) (supporting the literature discussed in sections 2.2.2 and 2.2.3). A large amount of literature suggests that marriage holds protective benefits for chronic conditions (Pienta et al., 2000). Research has highlighted that men more commonly take on masculine/manual/physically-demanding jobs, which according to the Job Demands-Resources model has prominent links to ill-health outcomes. Literature has found that persons who work in occupations associated with 'extreme bending of back' and who have a partner, are more likely to retire early (McKay and Middleton, 1998;Lund et al., 2001). With shifts in gender equity and increases in "dual earning" families (where there are two earners in a household, commonly in the form of a couple), "joint retirement" is becoming increasingly popular (Hurd, 1990;Pienta and Hayward, 2002;Colie, 2003;Mock and Cornelius, 2007). It is argued that persons with a partner are more likely to leave employment early as they can either rely on their partner to bring in an income, or they may want to/ have planned to retire at the same time as their spouse (Pienta and Hayward, 2002). A further interesting factor is in relation to age. Women often marry older men, with old-age being highlighted as often evoking ill-health (Young et al., 2005). These factors combined, it becomes apparent how women may be influenced by the job demands of their husbands, which in turn, may influence their own economic outcomes.

2.3.5 Training opportunities, the importance of timing and the links it has to health

The literature on interruption/exit of one's career due to own poor health or that of a relative/ close other, suggests that re-entrance into the labour market becomes increasingly difficult as time spent out of employment accumulates (Pylkkänen and Smith, 2002). Research has also shown that those who are trained, are less likely to interrupt/exit their career (Rothwell et al., 2008). With this in mind, providing training opportunities early, before exit/interruption, individuals may be encouraged to return to work and/ or extend their working lives (Centre for Research into the Older Workforce,

2004;Winkelmann-Gleed, 2012). The timing of retirement decision-making and other decisions in an individual's life (discussed in sections 2.2.1.3 and 2.2.1.4), has been shown to play an important role in economic activity choices of later life (Dentinger and Clarkberg, 2002;Coles and Francesconi, 2011;Miller, 2011). Retirement-planning is defined by Kosloski et al. (2001:160) as the "broad set of cognitions and behaviours towards the event of withdrawal from work". Moen et al. (2000) illustrate findings surrounding the average age at which different cohorts began to plan for their retirement, shown in Table 4.

Table 4: Cohort differences in average age workers begin to plan for retirement across the period of 1923-1945, (America)

Cohort (DOB)	Average age workers begin to plan retirement
1923-1934	52
1935-1939	46
1940-1945	42 or 43

Source: Moen et al. (2000).
Note: DOB=Date of birth (in reference to this table, the DOB helps to determine the cohort an individual falls into)

Although Table 4 does not specifically refer to the baby-boomer cohort (1946-64) of interest to this research, it does provide a general understanding of the trends in retirement-planning among previous generations. Table 4 clearly depicts that with every new cohort, the average age individuals begin to plan for retirement becomes earlier. Despite this, it is evident that this planning consistently occurs during midlife (whereby individuals cannot necessarily accurately predict health issues that may arise and which may compromise their ability to be economically active). A key objective of the EWLA, focuses upon encouraging earlier retirement-planning (European Commission, 2012a;Vickerstaff et al., 2015). Using the evidence of Table 4, policy-makers and employers can become more aware of the average time individuals begin to plan for their retirement, enabling them to support individuals in recognising the importance of earlier retirement-planning, and to set up

structures to help them achieve this (Centre for Research into the Older Workforce, 2004).

Combining the literature discussed so far surrounding health, it is evident that the context in which an individual lives and works, can influence the health they are likely to report. The upcoming sections examine the role of physical and psychological health and their implications for economic activity in later life.

2.3.6 Physical health as a determinant of economic activity

From examining the literature, a selection of physical health factors were identified as having clear links to economic outcomes among persons who are approaching or who are aged above the SPA (Lund et al., 2001;Probert et al., 2008). Self-reported general health (SRGH), difficulties with activities of daily living (ADL)/instrumental activities of daily living (IADL) and limiting long-standing illnesses (LLSI), are among the most commonly identified health variables associated with economic outcomes, among older adults (Townsend, 1959;Bowling, 1997;Dwyer and Mitchell, 1999;McGarry, 2004;Banks et al., 2006;Taylor et al., 2007). These are assessed accordingly by the following sub-sections.

2.3.6.1 Self-reported general health (SRGH) as a determinant of economic activity

A key objective of policy-makers surrounds identifying persons who are vulnerable to poor health (WHO, 2002;Rechel et al., 2009;Ahtonen, 2011). A selection of techniques can be used to identify such individuals, however evidence has found that a person's self-rated health can offer a good prediction of mortality (Mossey and Shapiro, 1982;Gallop, 2012). In light of this, persons reporting "poor" self-rated general health (compared to those who instead report "excellent"), can be anticipated to be at greater risk of illness (DeSalvo et al., 2006). Mossey and Shapiro (1982) observed that elderly individuals reporting poor self-rated health are 2.92-2.77 times more likely to be at risk of early mortality than those who report excellent health. This is further supported by research which has found links between self-beliefs/ expectations and health outcomes (Mossey and Shapiro, 1982;Dwyer

and Mitchell, 1999;Manor et al., 2001;Van Dick et al., 2004) (refer to section 2.2.1.2 for more details on the self-fulfilling prophecy, self-beliefs and outcomes). In light of this evidence, it is anticipated that persons who report poor health are less likely to be economically active.

2.3.6.2 Activities of daily living (ADLs) & Instrumental activities of daily living (IADLs) and their association with economic activity

ADLs include basic tasks of everyday life (e.g. bathing, eating, dressing, toileting) (Wiener et al., 1990) whereas IADLs include more complex activities which are often necessary for an individual to function in a community setting (e.g. shopping, cooking, managing finances) (American Psychological Association, 2014). ADL's and IADL's are measured using self-report. ADL's and IADL's have been identified by research as posing an influence upon decisions associated with retirement and working in later life (Strain et al., 2002). Evidence has found that among respondents who report a work limitation, the incidence of specific health problems is often higher, demonstrating a clear association between self-report and diagnosis (Wiener et al., 1990;McMunn et al., 2009;American Psychological Association, 2014). Research by Dwyer and Mitchell (1999) found that among persons reporting work limitations, 63% reported severe difficulty with at least one ADL/IADL/functional limitation. Furthermore, these individuals also proved to be significantly more likely to report expecting to retire earlier (by approximately one year) (Dwyer and Mitchell, 1999). Research looking at data from the ELSA, has found evidence to suggest that common symptoms and conditions, such as depression or reduced physical mobility, can also predict early exits from work (Rice et al., 2010). This demonstrates how persons reporting problems with ADL/IADL's may be vulnerable to exiting the labour market prematurely (Rice et al., 2010).

2.3.6.3 Limiting long-standing illness (LLSI) and its influence upon economic outcomes

According to the Census 2001, a LLSI is defined as any long-term illness, health problem or disability, which limits an individual's daily activities. These activities can include the ability to work or remain economically active, hence their relevance to this research (Hertfordshire Council, 2012). Literature has

found that LLSI's affect approximately three quarters of the oldest-old (Tomassini, 2005). Having an LLSI has been associated with poorer self-reports of health, and can indicate a need for care (Tomassini, 2005). As has already been demonstrated by the self-report measures of general health and reports of difficulty with ADL/IADL's, negativity surrounding health is often associated with actual diagnosis, such as chronic disease and furthermore earlier exits from employment (Saastamoinen et al., 2012). In addition to older adults being more likely to report an LLSI, research has also found that lower social class status or unemployment, adds a significant risk of reporting an LLSI (Bartley and Plewis, 2001) (see section 2.4.4). On the other hand, protection from LLSI's has been linked to marital status, whereby married individuals are less likely to have long-term illnesses than single, or previously married persons; supporting research surrounding marriage holding protective benefits for extending working lives (discussed more thoroughly in section 2.2.3) (Arber, 1997;Stimpson et al., 2012;Van Hedel et al., 2015). The evidence however generally suggests that the report of an LLSI is associated with exits from employment, highlighting persons who may require encouragement to be economically active in later life (ONS, 2014).

2.3.7 Psychological health as a determinant of economic activity

In addition to physical health, later life has also been associated with increased risks to psychological health changes (Talaga and Beehr, 1989;Christ et al., 2007;Zaniboni et al., 2010). Research has found that one's subjective/self-perceived/psychological health is often related to objective/physical health outcomes (Kay et al., 1964;Lund et al., 2001;Morack et al., 2013). In light of the evidence discussed regarding physical health (section 2.3.6), it is anticipated that psychological health influences individuals' decisions surrounding extending their working lives in a similar way (Bound, 1991). This is explored in further detail by this section.

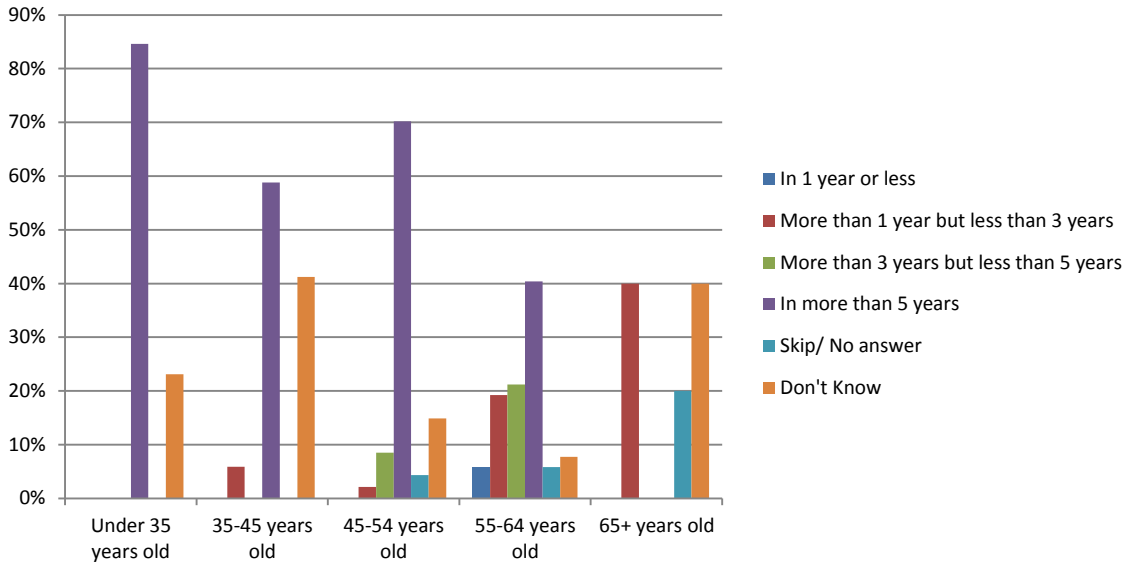
2.3.7.1 The association of depression and stress with economic outcomes in later life

Michie and Williams (2003) report that long working hours, work overload/pressure/stress, work-life imbalance, lack of social support, lack of control, lack of participation in decision-making and poor management, are

associated with psychological ill-health and work absences. These same factors, have been linked to early exits and can be anticipated to result in individuals being less likely to extend their working lives (Adams et al., 2002;Heponiemi et al., 2008;Houses of Parliament, 2011;Wahrendorf et al., 2012). Among the different types of psychological ill-health which were discussed by the literature, depression was prominently identified for reducing the chances of economic activity among older adults, while enjoyment derived from work, has been identified as a factor which encourages people to want to work for longer (Pearlin and Johnson, 1977;Christ et al., 2007;Siegrist et al., 2012;Kalokerinos et al., 2015). It is evident from the research surrounding psychological ill-health that the arguments presented can be inconsistent. For example, analysis of the ELSA, (Wave 5), by Banks et al. (2012), revealed a curvilinear relationship of psychological well-being with age in 2010-11, whereby those aged 60-79 years old are identified as the most likely to report good psychological well-being. Contrary to this, it has been reported that there is a 40% increase in the chances of a person suffering from clinical depression during retirement (Sahlgren, 2013). Interestingly, this same period has been associated with increased reports of physical ill-health conditions, once more demonstrating a relationship between physical and psychological health (Morack et al., 2013).

Consistently, distinct gender differences have been noted by the literature (see section 2.2 for details). The World Health Organisation (WHO) (2013b), found that gender differences affect psychological health, whereby women report psychological health problems which result in earlier labour market exits more often than men. Additionally, Banks et al. (2012) identify that age is linked to health. Banks et al. (2012) show risk for depression elevates during periods where individuals often work. Notably, these same periods of life have also been associated as peak times for retirement-planning/decision-making (Kennickell et al., 1997;Moen et al., 2000;Noone et al., 2010). Figure 37 demonstrates that individuals who expect to retire in the near future fall into the age group of 55-64, with younger respondents generally answering “in more than 5 years” or “don’t know”. Among persons below the age of 35-45, the response “in more than 5 years” was the most commonly reported, whereas the older groups were more able to pinpoint how near they anticipated being to their retirement.

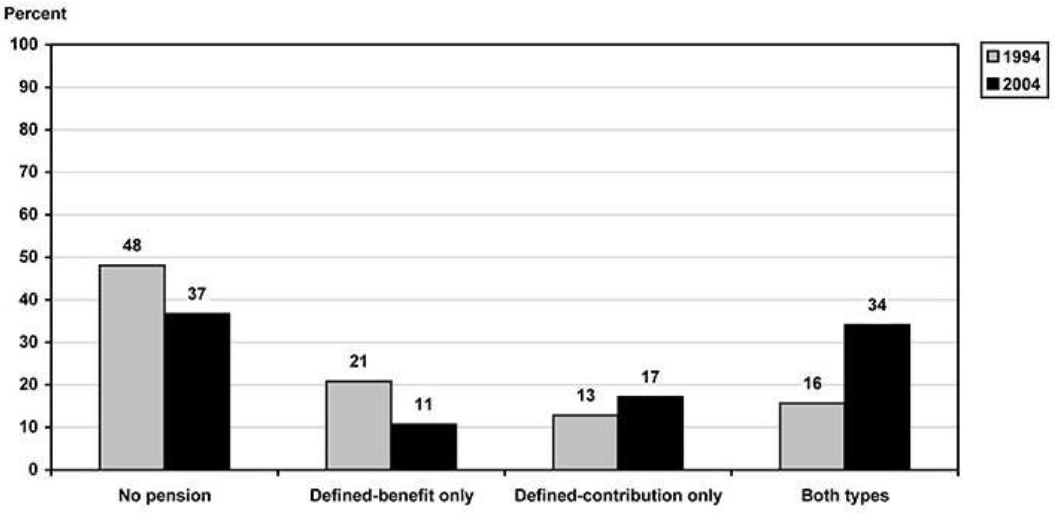
Figure 37: Retirement plans by age group, (US), 2002-2003



Source: Author's own, using table 7 of (Child et al., 2009)

Figure 37 shows that age is a significant determinant associated with retirement plans however, it is interesting to note that there is also evidence to suggest that there are cohort differences in planning behaviours for retirement (Moen et al., 2000). It has been argued that these differences may be a reflection of older-workers being less informed of the issues of an ageing population at the ages which younger cohorts can now begin to plan (Lusardi and Mitchell, 2007). Figure 38 presents evidence on the percentage of women aged 55-65 years old, with or without a pension, between the period of 1994-2004.

Figure 38: Percentage of women aged 55-64 years old who ever had a pension, by pension type, (US), 1994 and 2004



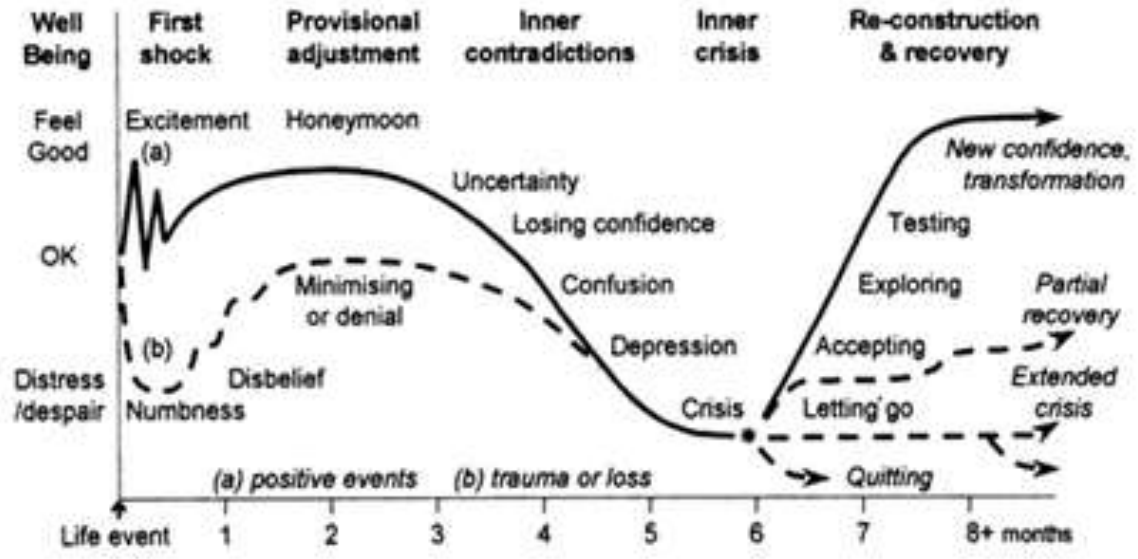
Source: (Iams et al., 2008) using the Health and Retirement Study (HRS)

Examining Figure 38, it is evident that the proportion of older women who participated in a pension plan, dramatically increased between 1994-2004. This reflects the increased labour-participation of women during this period and demonstrates a clear cohort difference. Evidently, as women have gained access to more opportunities to enter the labour market their ability to plan for their retirement has changed. In relation to cohort differences between men and women, retirement-planning is likely to change simultaneously to adjustments in legislation. One example, which is anticipated to reshape retirement plans relates to auto-enrolment pension schemes. Between 2012-2018, employers have been directed by the government to automatically enrol their employees who are over the age of 22, working in the UK and earning more than £10,000, into a work-based pension (GOV.UK, 2014). Consequently, these individuals will begin saving for their pensions from earlier ages. Another example of such policy adjustments relates to the recent 'Pension Freedoms' (April 2015), which has changed the way people claim their pensions. This legislation seeks to increase individuals' abilities to save, spend and invest (Cavaglieri, 2015). With the SPA increases being recent in their implementation, older generations are often perceived as "unprepared" for the new changes to legislation, which propose to increase the SPA (Beinhocker et al., 2008). These individuals have planned to retire at the original 60/65 SPA and have not accounted for the additional years they are now expected to wait

to receive a state pension. Policy-makers need to promote earlier retirement planning if to avoid younger generations also being 'unprepared'.

Work by Rosenkoetter and Garris (2001), has observed that retirees emphasise that their use of time in planning retirement is positively associated with their adjustment to retirement. It is anticipated that advanced planning can have psychological benefits, which may permit individuals to extend their working lives more effectively. There is an array of literature which believes that life/ role transitions are stressful periods, often demanding adjustment and can pose consequences for mental health (Wheaton, 1990). Stress and depression have both been associated with negative psychological health outcomes, demonstrating how transition periods may determine whether a person is economically active in later life (Böttcher et al., 2012;Tang and Burr, 2014). Moving out, getting married, bereavement, retirement, etc., are identified as key life transition periods. Figure 39 illustrates how there can be individual variability in terms of the phases of features of the transition cycle.

Figure 39: Phases and features of the transition cycle



Source: (Williams, 1999)

With specific reference to retirement as a life transition, Kim and Moen (2002) have found that the resources and context in which retirement occurs, appear to influence psychological well-being. Kim and Moen recognise transitions are often heterogeneous and unique to every individual. Van Solinge and Henkens (2008) and Kotecha et al. (2010) have found that pre-retirement anxiety

surrounding the social consequences of retirement and a lack of control over the decision, can cause adjustment problems to retirement. These same researchers have also noted that retirement satisfaction is primarily related to resource access such as finances, health and social support. A key finding of the work of Van Solinge and Henkens (2008) was in relation to the gradual process of retirement being a more successful means of transition. Van Solinge and Henkens (2008) found involvement with volunteer/ part-time work prior to retirement leads to the adjustment to retirement being easier. Literature has found strategies such as "bridge employment" to be particularly effective for encouraging retirement transitions to be gradual and phased (Hutchens, 2003;Stendardi, 2005;Chen and Chaung, 2012).[4] Additionally, this strategy could help individuals in extending their working lives (Vickerstaff et al., 2004;Vickerstaff, 2007). This is an area of policy which would benefit from more attention as it is clear it holds benefits and aids individuals in extending their working lives (Centre for Research into the Older Workforce, 2004).

2.3.7.2 The association of high and low quality of life (CASP-19) and economic outcomes in later life

A person's quality of life (QoL) is identified as an important aspect to consider when formulating social and health policy (Sim et al., 2001). A primary technique used to measure QoL, is the CASP-19 scale. CASP-19 is an operational measure, which consists of 19 Likert-scaled items, covering the four theoretical domains of: Control, Autonomy, Self-Realisation and Pleasure (Wiggins et al., 2004). The CASP-19 scale was originally developed to be used upon those aged 65-75 years old (Sim et al., 2001). There has been evidence to suggest that persons who report poor well-being are more vulnerable to becoming economically inactive (McMunn et al., 2009), illustrating how CASP-19 scores may be a useful way for policy-makers to identify persons needing encouragement to be economically active.

Interestingly, the main QoL measure used by research which uses the ELSA data-set, is CASP-19 (Blane et al., 2007). Evidence has found that a person's well-being can be promoted by the transition to retirement (Netuveli et al.,

[4] 'Bridge employment' being paid work taken on after retiring or alongside receiving a pension which provides an additional source of income; often flexible with ability to reduce hours in the future and which permits a person to remain economically active (Hutchens, 2003;Stendardi, 2005;Chen and Chaung, 2012)

2006;Blane et al., 2007;Siegrist et al., 2007;Banks et al., 2008a). Furthermore, research has highlighted individuals who are in a low social position, who are unemployed, who are male, divorced/widowed, with poor health or who have a low income, are at greatest risk of lower well-being and low QoL scores (Netuveli et al., 2006;Blane et al., 2007;Siegrist et al., 2007;Banks et al., 2008a). Evidence such as this, helps to illustrate persons who may be most affected in terms of economic outcomes.

2.3.8 Summary of health characteristics associated with economic outcomes

The literature examined by this section has revealed that health is a complex concept encompassing many factors. From the literature explored, it was clear that both physical and psychological health can influence a person's decision surrounding economic activity in later life (US Department of Health and Human Services, 1990;Midanik et al., 1995;Dwyer and Mitchell, 1999;Pinquart, 2001;WHO, 2002;Michie and Williams, 2003).

The literature has found health is often a consequence of an individual's own actions, e.g. their health-risk behaviours and occupation type. However, it is also evident that factors beyond the individual's control can pose consequences, such as a person's gender and training opportunities presented by an employer (Fraser et al., 1997;Lantz et al., 2001;Dinca-Panaitescu et al., 2012;Doubeni et al., 2012;Kimani et al., 2012;Saito et al., 2012;King and Pickard, 2013). Building upon the theory of Social Identity (Tajfel, 1974), individual expectations and societal beliefs, can influence a person's health (McGarry, 2004;Lievre et al., 2007). This was demonstrated by evidence surrounding women and the influence of their husbands' health and by findings, which have suggested that training can be useful as a preventative strategy, which illuminates the importance of employers. Overall, it is evident that health plays a significant role in determining economic outcomes in later life. Often, health is accompanied by other factors, highlighting the importance of acknowledging characteristics in combination if to understand their holistic influence on economic outcomes.

2.4 Socio-economic characteristics of economic activity up-to and beyond the SPA

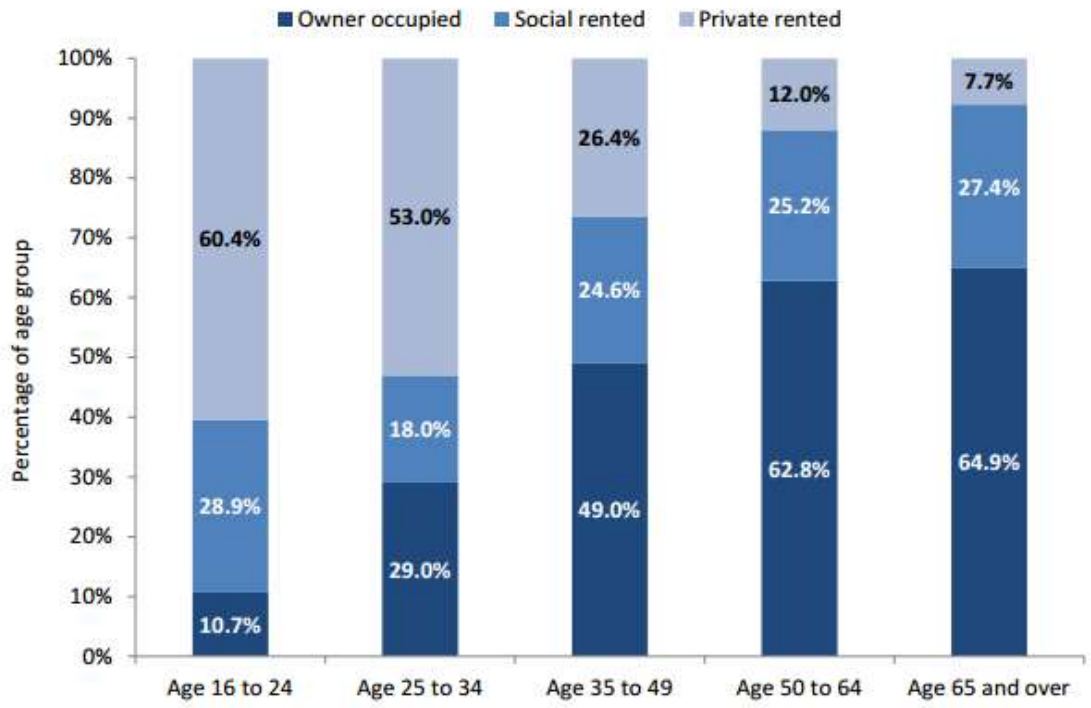
A third set of factors identified by the literature as associated with economic outcomes of later life, relate to socio-economic characteristics which can range from financial assets, to education level, to social status within society. Two prominent theories highlight the importance of these characteristics. To begin, the Cumulative Advantage-Disadvantage (CAD) Theory suggests that there is a "systematic tendency for interindividual divergence in a given characteristic (e.g., money, health, status) with the passage of time" (Dannefer, 2003:pg 327;Ferraro and Shippee, 2009). More simply, this theory suggests that as individuals' age, they accumulate advantages/ disadvantages, resonating popular sayings such as "*the rich get richer, the poor get poorer*" and what Karl Marx called the Law of increasing poverty (Dannefer, 2003). The CAD theory, lends support towards the second theory of interest, which is the Socio-Economic Gradient (SEG) (see also section 2.3). The SEG theory suggests that a person's socio-economic status (SES) affects the life-course a person leads and consequently their economic outcomes (Adler et al., 1994;Marmot, 2010). The SEG highlights how there are often gaps in the life-course outcomes of higher and lower SES individuals, as those falling into higher status groups tend to have more favourable outcomes than their lower socio-economic status counterparts. One example of a SEG relates to life expectancy. In 2002-2006 the gap at age 65 for life expectancy of the lowest and highest social status classes was 3.5 years for men, and 3.2 years for women (ONS, 2012b-a). Evidence supporting these social gradients helps to demonstrate the influence socio-economic variables have for extending the working life. Socio-economic characteristics are discussed in more details by the following sub-sections.

2.4.1 Housing tenure as a determinant of economic activity

Research suggests that housing tenure can provide a good indication of a person's lifetime income and wealth (Dalstra et al., 2006). Figure 40 examines reports of housing tenure by age group in London, 2011. Although this figure can only be confidently generalised to London, the findings suggest that older

adults (aged 50+) are more likely to own their property, while younger adults more frequently rent.

Figure 40: Tenure by age, (London, England), 2011



Source:(Greater London Authority, 2013)

According to the prominent Oswald hypothesis, which examines the relationship of labour supply and housing tenure, homeowners are more likely to report being unemployed, or economically inactive (Battu et al., 2008;Isebaerta et al., 2015;Kantor et al., 2015). Research by Battu et al. (2008) echoes this hypothesis, and has found that homeowners tend to have reduced mobility, an aspect which has been linked to unemployment (Jakobsson et al., 2011;Lyons et al., 2012). However, further examination reveals that these same individuals are often unemployed for shorter durations than renters (Battu et al., 2008). Given unemployment has links to increased risk for early exits (Banks et al., 2008b;Battu et al., 2008), it can be anticipated that persons who are owner-occupiers are less vulnerable than renters to leaving the labour market early. Research has demonstrated that in most countries, a greater proportion of renters have a lower education and receive lower incomes (Dalstra et al., 2006). Both of which, are factors associated with labour market

exits, demonstrating how these individuals may be less likely to extend their working lives.

2.4.2 Car access as a determinant of economic activity

Transport, is a further consideration associated with employment extension opportunities for older-workers. Research by the Working Late Project (2013), has found journeys to work are particularly influential upon retirement decisions. They suggest that concerns surrounding security, cost, timing, fear and a sense of lost control, can all contribute towards individuals favouring to exit employment as opposed to using public transport, which could allow older adults to extend their working lives. This appears particularly true when an individual's own private means of transport is restricted, for instance due to age-related declines such as poor eyesight, which can limit driving ability (Ong, 2002).

Giving up driving can restrict mobility to access services and shops and can limit older adults independence, control, maintenance of status, inclusion and travel capacities (Netuveli et al., 2006;Davey, 2007;Musselwhite and Haddad, 2010). Evidence to support the benefit of car access in reference to extending working lives, reports that persons who have car access are unemployed for shorter durations than those without and tend to report having a better QoL (Dargay and Hanly, 2007). Persons under 65 are the most likely to have access to a car, while those above the SPA and females, are the least likely (OECD, 2001;Raphael and Rice, 2002;Gurley and Bruce, 2005;Baum, 2009). It has been suggested that older adults could benefit from accessing alternative forms of transport to permit them to extend their working lives (Filakti and Fox, 1995).

2.4.3 Education as a determinant of economic activity

Johnson and Zaidi (2007) identify education as a key determinant associated with working patterns, lifetime earnings and employability prospects. With trends across the population exhibiting evidence for transitions from education into the labour market becoming postponed for both men and women, resulting in fewer years in the labour market (see previous Figure 14 and

Figure 13), there are concerns surrounding limited pension contributions which may lead to financial insecurity in retirement (Houses of Parliament, 2011).

In addition to fewer years within the labour market, a person's education often determines the occupation they will take on, supported by the findings discussed in section 2.2.4. McKay and Middleton (1998) suggest that individuals who are well qualified and who have received recent training, are among the most likely to be economically active. Research has shown that occupation type can pose implications for the pension contributions an individual makes throughout their lifetime (Meyer et al., 1993;Griliches and Mason, 2010;McPhedran, 2012). Despite extensions in education offering individuals more opportunities to gain qualifications, a SEG remains. Johnson and Zaidi (2007) provide evidence of cohort differences in obtaining university qualifications. However, research has also shown that individuals whose parents come from professional occupational backgrounds have a greater likelihood of obtaining similar qualifications, suggesting a SES difference (Johnson and Zaidi, 2007). Lain (2012) coined the term "*Lopaq*" for occupations which pay low wages, require fewer qualifications and are part-time (often termed as "blue-collar" work) (Dewilde, 2012). Lopaq/ blue-collar professions tend to involve physically-demanding tasks (Dewilde, 2012;Lain, 2012). According to the "Job-Demands-Resources Model" (Bakker and Demerouti, 2007) (section 2.3.3) such tasks are regularly associated with poor health outcomes demonstrating how a person's education may contribute to the type of work they undertake and the health outcomes they experience in later life (Johnson et al., 2007;Mermin et al., 2007;Mermin et al., 2008). Furthermore, evidence from Lantz et al. (2001) suggests that individuals' working on low incomes, tend to live in poorer housing, have worse working conditions, have less access to high quality food and health care and have reduced social support. Conditions such as these have been associated with issues relating to health, which consequently may limit these individuals' ability to continue working (Marmot, 2010). Research by Robroek (2011) has found that men and women from lower SES backgrounds are 3.4 and 2.9 times respectively, more likely to report poor health. Furthermore, individuals with lower education levels (primary school, lower and intermediate secondary schooling, or lower vocational training), are 1.9 times more likely to take sick leave than those with higher levels of education (higher vocational schooling or

university), providing yet more evidence for a SEG effect (Robroek, 2011). Scholes et al. (2008), who conducted analysis on the ELSA has shown that women are less educated than men, highlighting a gender difference, and may indicate that women (due to being less educated) may be disadvantaged in terms of SES, a trend also noted by the other socio-economic variables. Finally, it is noted by empirical literature that individuals from lower SES groups participate more regularly in health-risk behaviours (see section 2.3.2), which have been linked to poor health outcomes and having implications for early labour market exits (Fraser et al., 1997;Lantz et al., 2001;Dinca-Panaitescu et al., 2012).

Evidence has shown that individuals of lower SES are the least likely to make plans for their retirement, highlighting how individuals already placed at a disadvantage in terms of the SEG, may be hindered further as a result of other factors which relate to them being from lower SES groups. Helping individuals to plan their retirement in a timely manner, may allow them to make informed decisions surrounding exiting employment. To help identify persons who are from lower SES groups, occupational social class can be useful in helping to identify where a person is likely to fall upon a social gradient, bringing us to the final variable, which is discussed by this section of the literature review.

2.4.4 Occupational social class (NS-SEC) as a determinant of economic activity

A frequent measure of SES is the National Statistics Socio-Economic Classification "NS-SEC", a measure which is used in many official statistics and surveys, to group individuals in accordance with their occupation, employment relation and employment conditions (Galobardes et al., 2006b). Among research which has used this classification measure, inequalities of life expectancy and mortality are reported (Griffiths and Fitzpatrick, 2001;ONS, 2012b-a). Already in discussions relating to job-demands (section 2.3.3), literature has found that a person's occupation can influence the type of work that they undertake, which can have links to health and economic outcomes.

Trends in occupational social class have revealed that men are twice as likely as women to be in higher managerial and professional roles, whereas women are more likely to be in intermediate occupations (Hall, 2006;ONS, 2013g).

Married or cohabiting couples with dependent children are also more than twice as likely as lone parents with dependent children to be in managerial and professional households (Hall, 2006). A person's occupational social class has been associated with factors including education and finances (ONS, 2013c). For instance, work by Young et al. (2005) found that those of higher SES are more able to purchase care, suggesting that these individuals are often wealthier. Interestingly, Young et al. also found that individuals from higher SES backgrounds demonstrate a greater ability to negotiate care, which they suggest reflects that these individuals are also more intelligent. Furthermore, research demonstrates that such individuals regularly exhibit a greater understanding of the financial implications associated with employment exits (Vickerstaff, 2006). Given that those falling into blue-collar professions/ routine manual jobs are more likely to experience health problems and to be from low SES groups, helps to highlight how individuals in such groups may be at greater risk for exiting the labour market early (Dewilde, 2012). Research has found that caring responsibilities can often limit an individual's ability to be in paid employment (Loretto et al., 2005;Vickerstaff et al., 2008;Vickerstaff, 2010). For example, there is evidence to suggest caregivers often report having smaller incomes and restricted opportunities to contribute towards a pension scheme compared to individuals who are in paid employment (Rosen and Jerdee, 1990;Dentinger and Clarkberg, 2002;Navaie-Waliser et al., 2002;King and Pickard, 2013). Evidence such as this, can demonstrate how those who are already at a disadvantageous position upon the SEG, such as women who are more likely to be carers in midlife and to have a lower level of education, may experience further problems as a result of their lower SES (Scholes et al., 2008;Vlachantoni, 2010). Such a status is likely to lead to an increased likelihood for an individual to work in a manual occupation or roles which have been proven to be associated with poorer health outcomes which thus require close family to undertake caregiving duties which in effect will further reduce the total household income (Young et al., 2005).

2.4.5 Financial assets and their influence upon economic activity

Policy has often used fiscal incentives to influence the working patterns of individuals (Swanson, 2004;Auerbach et al., 2010;Chai et al., 2013;Cribb et al., 2013a). For example, the reduction of state generosity is a key feature of the

EWLA, as policy has shifted towards more earning-related benefits, placing more responsibility upon individuals themselves for their pensions (Weyman et al., 2012). Research has found that personal finances have a strong positive relationship with individuals' retirement decisions (Beehr, 1986;Talaga and Beehr, 1989;Adams et al., 2002;Gough et al., 2008;Winkelmann-Gleed, 2012), and that lengthier careers improve financial security in old-age (Mermin et al., 2007). For example, Vickerstaff (2006) found that encouraging individuals to save for longer, reduces the chances of pensioner poverty. Mermin et al. (2008:pg 1) highlight the potential benefits of encouraging economic activity in later life in their quote: "If boomers were to delay retirement, the economy could produce more goods and services, boasting living standards for both workers and non-workers and generating additional tax revenue to fund all kinds of government services". The association between economic activity and pensions is explored in more detail by the next sub-section (2.4.6).

2.4.6 Pension scheme membership as a determinant of economic activity

The link between pensions and economic activity outcomes is widely established across the literature (Ginn and Arber, 2000;Abraham and Ledolter, 2006;Phillipson and Smith, 2006;Banks et al., 2014;Eurostat, 2014;Vlachantoni et al., 2015). Receipt of a pension can provide a relatively objective measure of retirement, frequently coinciding with the SPA and withdrawal timings of the state pension (Eurostat, 2014) (see also section 2.2.1.1).

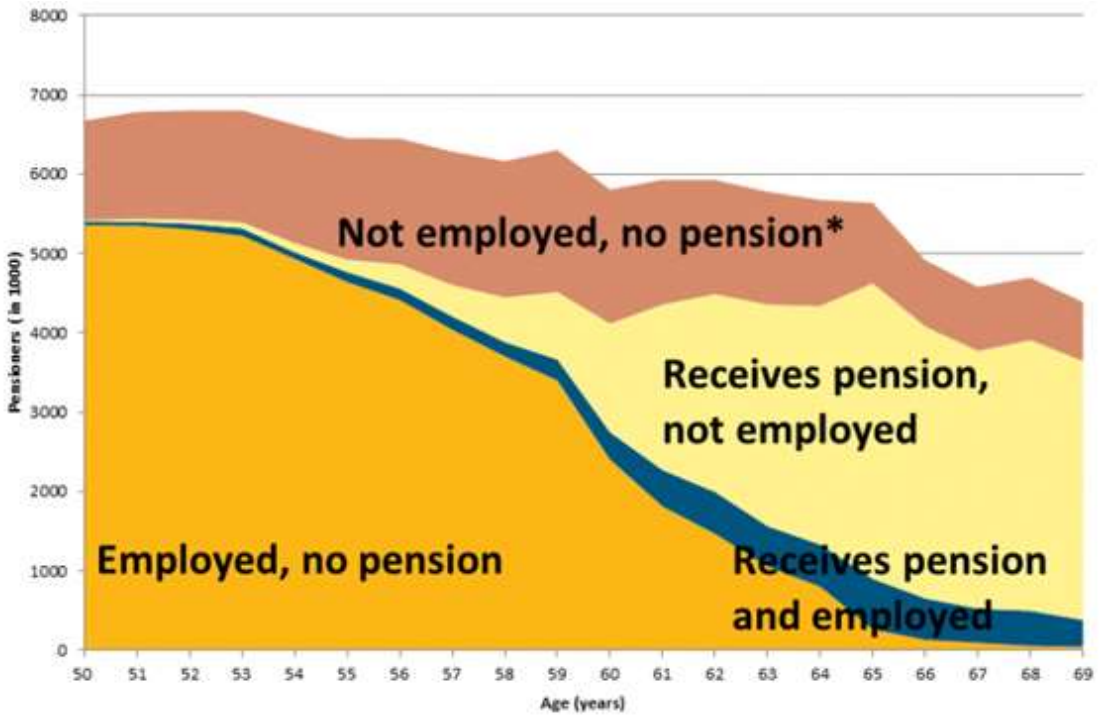
In Britain, pensions predominantly are either state-provided or non-state (occupational and private) provided. It has been argued that the relatively low-level state pensions in the UK, have led to private pensions playing an important role in terms of financial preparedness for retirement and providing significant incentives to work at older ages (Banks et al., 2014). The EWLA has placed a significant emphasis upon the role of private pensions in encouraging saving for later life in an appeal to improve individuals' financial security in later life. An example of such policies is the auto-enrolment initiative, which has encouraged individuals to start saving for their pension earlier in life (Silcock et al., 2012;GOV.UK, 2014). Evidently, much of the emphasis surrounding private pensions has come too late for the baby-boomer

generation, however it is interesting to examine the effect that pension scheme membership can have on economic activity outcomes as a reflection of legislation encouraging individuals to be part of such pension schemes.

Evidence from Vlachantoni et al. (2015), who analysed data from the UKHLS to explore patterns of employment and pension scheme membership, identified both demographic and socio-economic characteristics to affect one's odds of working for an employer who offers a pension scheme. Older, male and married individuals demonstrated a strong association with belonging to a pension scheme, while persons with a low educational level or renting their home, showed negative associations with pension scheme membership (Vlachantoni et al., 2015). Ginn and Arber (2000) in their analysis of the 1993/4 and 1994/5 General Household Survey, present similar results to Vlachantoni et al. (2015) and conclude that employees' pension arrangements are associated with individuals' relative advantage in the labour market.

Examining Figure 41 which uses European data, the links between pension scheme membership status and economic activity can be better understood. Evidently, with increasing age the number of employed adults and not receiving a pension, decreases, while the number of adults receiving a pension and not being employed, increases (see also section 2.2.1.1 on the association of age with economic activity).

Figure 41: Number (in thousands) of employed persons and recipients of old-age pensions, aged 50-69, EU-28, 2012



(*) The group 'Not employed, no pension' may include persons who do receive an old-age pension, if they stopped working at 49 or younger. Pensions other than old-age pensions are not included in this figure and were not taken into account when forming the groups shown here.

Note: The target definition for old-age pensions includes pensions which are of any of the types: public or private, voluntary or mandatory, defined contribution or defined benefit.

Source: (Eurostat, 2014); using LFS 2012 data

Examining Figure 41, the number of individuals who report to receive a pension whilst they are employed, comprise the smallest proportion of individuals; increasing only slightly among those aged beyond 60. Existing research has argued that people continue to work despite receiving a pension for financial and non-financial reasons (Eurostat, 2014). Financial reasons are suggested to include the purpose of establishing or increasing one's pension entitlements for the future to provide a sufficient and sustainable individual and household income, while non-financial reasons tend to relate to factors such as job satisfaction (Eurostat, 2014). Research has noted that individuals of lower socio-economic status are more likely to report financial reasons for extending their working lives, while individuals from higher socio-economic positions tend to report non-financial reasons (Dubois, 2016). Evidently, a complex interplay of factors are associated with economic activity outcomes. Although the links between pensions and economic activity are evident,

literature exploring the association between pension scheme membership *status* and economic activity is scarce, identifying a gap where this study contributes.

2.4.7 Summary of socio-economic characteristics associated with economic outcomes

The third section discussed by this literature review has examined the associations between socio-economic characteristics and economic outcomes among older adults. From the previous sections, which have examined the role of demographic and health characteristics, the interlinked influence of socio-economic variables has been apparent (Barron et al., 1952;South, 1991;Adler et al., 1994;Griffiths and Fitzpatrick, 2001;Gjonça and Calderwood, 2003;Macintyre et al., 2003). Examining literature which focused on specific socio-economic variables, financial variables such as pension scheme memberships, home-ownership and car access, have been associated with economic activity (Wedderburn, 1965;Filakti and Fox, 1995;Macintyre et al., 1998;Ginn and Arber, 2000;Griliches and Mason, 2010;Doubeni et al., 2012;Skopek et al., 2012). Interestingly, sections 2.2 and 2.3 have identified research which has shown that higher levels of education and occupations which require managerial or professional skills, are positively associated with economic activity in later life, further confirmed by the evidence found by this section (Ross and Wu, 1995;Dalstra et al., 2006;James and Sharpe, 2007;White, 2007;Fidler et al., 2009;ONS, 2011b;Beck and Quinn, 2012;Fehring and Herring, 2012;Kimani et al., 2012). This provides both supportive and conclusive evidence in helping the researcher to identify persons who are more likely to extend their working lives and be economically active in later life. A final interesting aspect of the research reviewed found that those who are likely to be economically inactive tend to show the exact opposite characteristics to those who are likely to be economically active. For example, not having access to a car is associated with economic inactivity, whereas car access is associated with economic activity (Barron et al., 1952;South, 1991;Adler et al., 1994;Griffiths and Fitzpatrick, 2001;Gjonça and Calderwood, 2003;Macintyre et al., 2003). The findings of this section have helped to enhance our understanding of the socio-economic individual characteristics that are associated with economic activity among older adults.

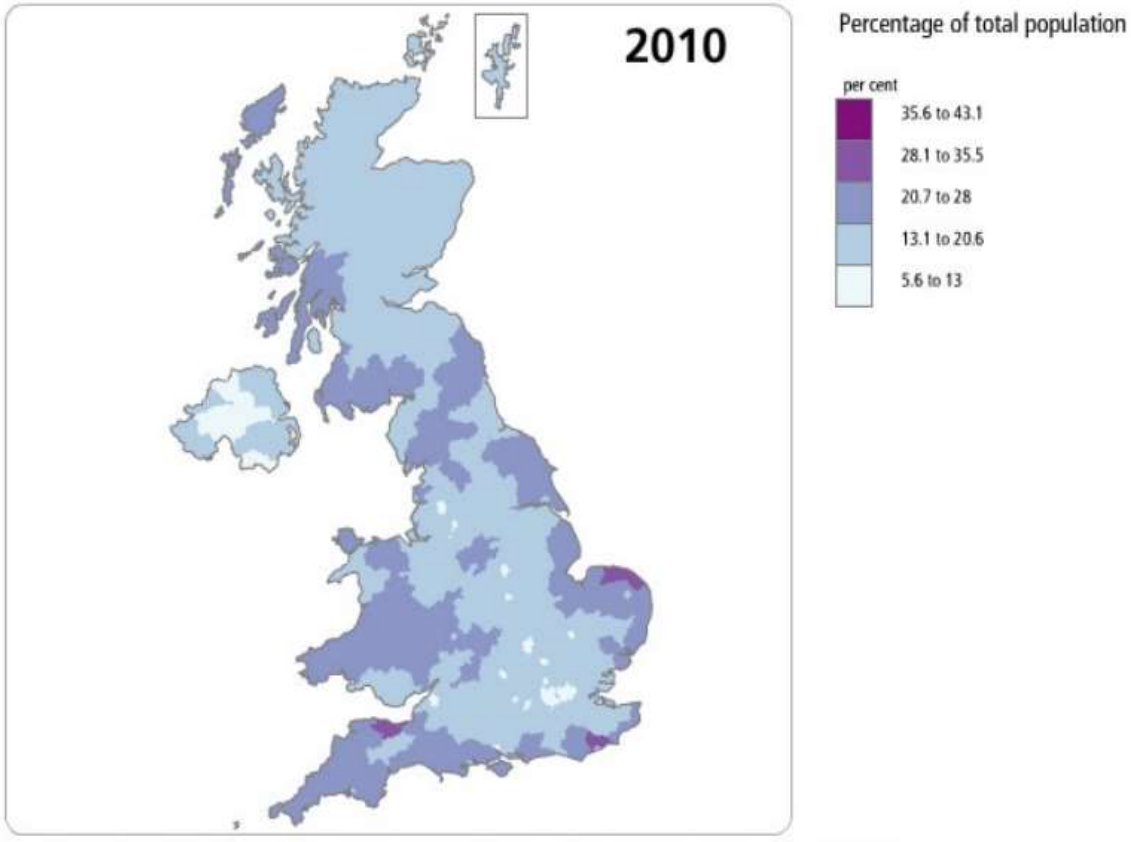
2.5 Geographical characteristics of economic activity up-to and beyond the SPA

A fourth set of variables identified by the literature as associated with economic outcomes in later life pertains to an individual's location of living. According to the literature, the geographical location of where somebody lives is associated with outcomes of economic activity among older adults (Smeaton and McKay, 2003;Young et al., 2005;Uzzoli and Szilágyi, 2009). This section will explore these associations in more detail.

2.5.1 Region as a determinant of economic activity

Figure 42 provides a useful illustration portraying where the highest percentages of the total population who are aged above 65 live in England.

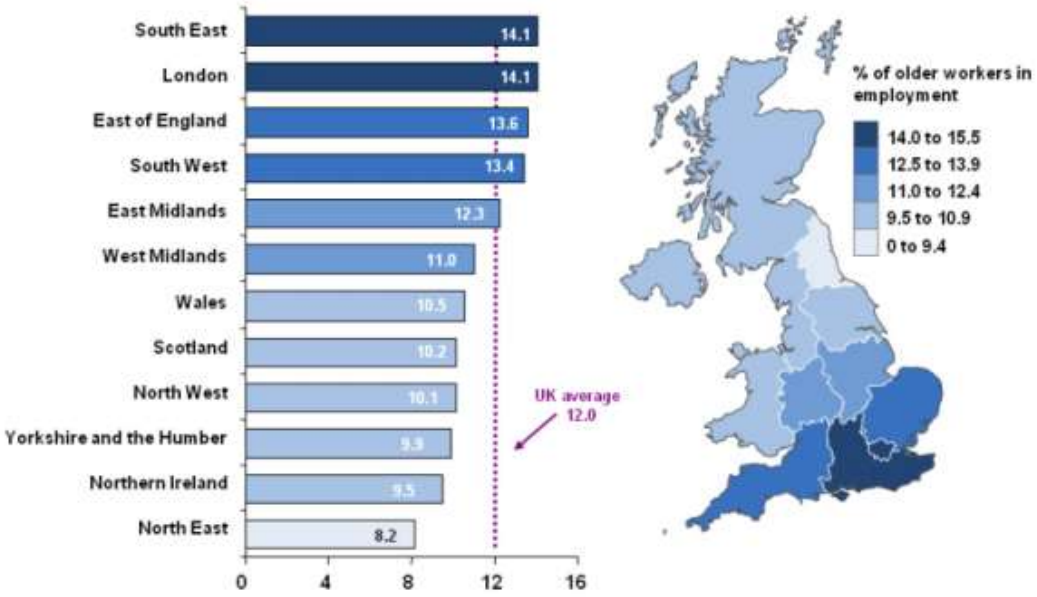
Figure 42: The ageing of the UK: Percentage of total population aged 65+, (UK), 2010.



Source: ONS, WG, NRS, NISRA: Data Population Estimates 1992-010; 2008-based National and Subnational projections 2011-2033; Older peoples day 2011 ONS.

Further research has found that patterns of employment tend to vary by region (Young et al., 2005;Uzzoli and Szilágyi, 2009;Porcellato et al., 2010). The South East, East Anglia, South West, West Midlands and the North of England, have been identified by McKay and Middleton (1998) as boasting the highest rates of older-adult full-time employment. In contrast, Wales, East Midlands, Yorkshire and Humberside, have demonstrated the worst prospects for older-worker employment (McKay and Middleton, 1998). The ONS provides a useful visual representation through their 2012 report of older-workers in the labour market (shown by Figure 43), supporting the observations made by McKay and Middleton for these regional differences. However, it should be noted that these results might be a reflection of the higher absolute numbers of older adults in these areas demonstrated previously in Figure 42 (Cory, 2012).

Figure 43: Older-worker employment rates by UK region, (UK), 2012/2011



Source: Annual Population Survey (APS), ONS.

The prevalence of different types of employment vary significantly between regions. For example, Southern and Eastern regions report self-employment among adults aged between 50 and the SPA to be most common, while in the North East and North West this type of employment is the least common. Unsurprisingly however, the areas with the lowest rates of employment also

appear to have the highest permanent sickness/disability rates and the highest proportion of retired individuals (Cory, 2012).

Disparities in labour market performance can also be influenced by the employment specialisation of the region. For example, Wales and the North-East of England are often perceived to have suffered in terms of their overall labour market performance due to employment in these areas often being concentrated on traditional industries such as coal-mining, iron and steel production (which have experienced declines in terms of the shares they have of world markets) (Robson, 2009). In contrast, London and the South-East of England, whose specialisations focus instead on service sector activities such as financial and business services, are suggested to have far better overall labour market performance as these specialisations appear to be thriving (Robson, 2009).

A final factor relating to geographical/regional differences can be observed from a national/ global level. It is apparent that the average retirement age in some countries are considerably higher, insinuating that their methods for encouraging working lives are more effective (refer back to Table 3). For example, Denmark shows particularly good rates of extensions in working lives (Pylkkänen and Smith, 2002;Jensen, 2005). By examining the incentives and policies in place among other contexts and countries, governments may be able to become more informed in effective policy which can encourage individuals to extend their working lives (Reday-Mulvey, 2005).

2.6 Caring characteristics of economic activity up-to and beyond the SPA

The final selection of variables identified by the literature as associated with economic outcomes, relates to caring characteristics.

2.6.1 Caregiving: time and provision and their influence as individual characteristics of economic activity in later life

It is evident from the literature discussed in relation to section 2.3, that health is a significant factor relating to economic outcomes of later life (Vickerstaff, 2010). One's own personal ill-health however, is not the only contributing

factor to economic outcomes in later life. There is further evidence to suggest that kin health is also influential. Caring duties often relate to elder and child-care, however, research suggests that other family and friends can also evoke demands for such support (Dentinger and Clarkberg, 2002;Navaie-Waliser et al., 2002;Young et al., 2005).

Throughout the literature, women appear largely responsible for caregiving duties (Pavalko and Artis, 1997). However, from examining the literature more closely, it is evident that the provision of care is only more dominantly provided by women before they reach later life, whereas men become the most likely to provide care during later life (AgeUK, 2015). Evidently, research has demonstrated that caring may result in early employment exits which can lead to reduced chances for extending the working life (Dentinger and Clarkberg, 2002;Pylkkänen and Smith, 2002). Commonly throughout the literature, research suggests that the burden of caregiving creates challenges in balancing work and home responsibilities, often resulting in carers neglecting their own health (Conde-Sala et al., 2010). Health has strong links to economic activity outcomes and it can be anticipated that caring may influence whether an individual is economically active later in life (Vickerstaff, 2010). Literature commonly recommends that policy-makers need to help employers and individuals to acknowledge the importance of a home-life balance, to accommodate for declining health and to meet desires to enjoy one's leisure whilst still able to. One suggestion to achieve this is through *flexible working* (Platman, 2004;Loretto et al., 2005;Siegenthaler and Brenner, 2008). As identified through the notions of bridge/gradual retirement, flexible working enables older-workers to employ their ability to choose and have control over their working lives, through reduced hours, working from home, flexi-time, choosing the times at which they travel, etc., which in turn has been identified as one effective method for extending the working life. Self-employment is identified as one way, particularly exercised by those from higher socio-economic backgrounds, whereby when questioned, individuals express the flexibility of working enabled them to extend their working lives. With this in mind, by encouraging and enabling those from lower socio-economical groups who are often at increased risk for providing care, possibly through employer interventions to access flexible work, extensions in working lives may also be facilitated (Loretto et al., 2005).

The provision of care and the length of time spent caring shall now be discussed, surrounding its influence on economic activity.

2.6.1.1 The influence of providing care upon economic activity up-to and beyond the SPA

Patterns of epidemiology reveal that non-communicable, chronic diseases are among the most prevalent causes of mortality, morbidity and disability, particularly in later life within modern western societies (Daar et al., 2007). With longevity extending, research suggests that many morbidity cases are becoming postponed until later life. However, these postponements combined with an ageing population, suggest that there is likely to be an increased demand for care in the future (Arno et al., 1999;Young et al., 2005;Lievre et al., 2007;Rechel et al., 2009). It is anticipated that the long-term care needs of persons with these chronic conditions will be provided by the individuals' families (Arno et al., 1999). Literature surrounding postponed mortality and morbidity outlined in sections 2.2.1.4 and 2.3, have also demonstrated that the prevalence of chronic conditions have increased. Chronic conditions, which tend to demand more intense levels of care, have been linked to carers feeling burdened by their responsibilities and has been associated with carers experiencing greater levels of depression and illness themselves (Ho et al., 2005;Conde-Sala et al., 2010;Richardson et al., 2013). Research has found that carers who feel burdened, are more likely to leave the labour market early and to experience poorer health and well-being (Evandrou and Glaser, 2003;Rechel et al., 2009). The demands to provide care for a large ageing population, is anticipated to evoke even greater carer burden and may result in additional exits from the labour market with yet more people in need of receiving care themselves as a result of acting as carers (Horemans, 2012).

Women were identified in Section 2.2 as being the most likely individuals to take on the role of caring, except in later life (Brody, 1981;Pavalko and Artis, 1997). Evidence has also found that it is women who are more likely to work in lower skilled occupations (Johnson and Zaidi, 2007). Interestingly, evidence has found that there are wage disparities between men and women, as the work-life choices favoured by women may consequently place them at a disadvantage on the SEG (Lund et al., 2001;Johnson and Zaidi, 2007). Arthur (2003) suggests that money can enable an individual to have choice and

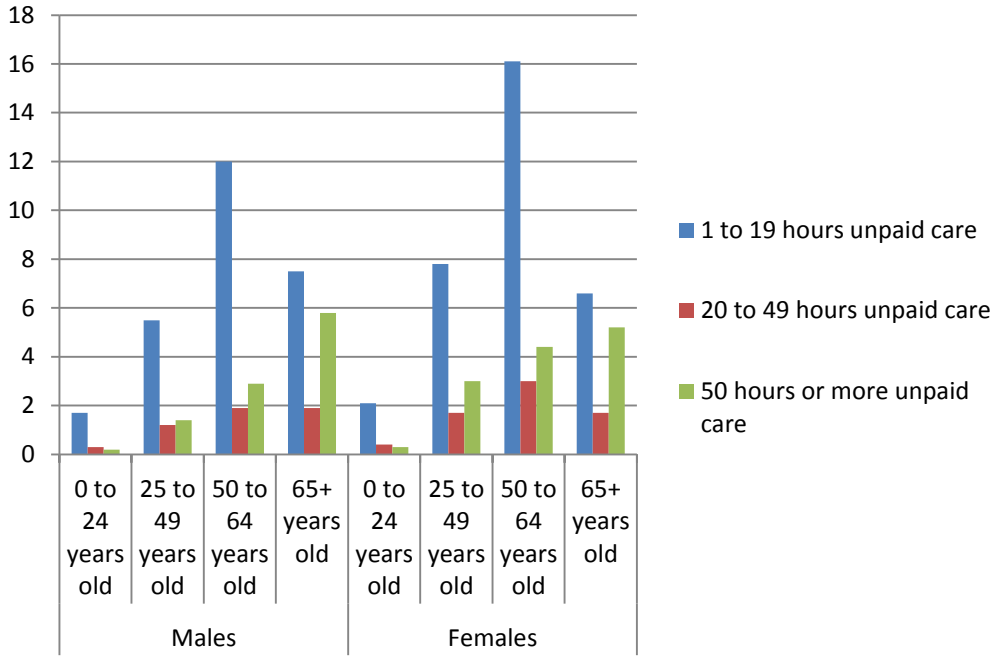
control over their decisions regarding retirement. Despite efforts by policy-makers to promote equal treatment within the workplace, such as the introduction of the Equality Act 2010, women continue to face challenges regarding being in the workplace, which may contribute to their uptake of caring responsibilities. Therefore, it is essential that policy continues to address issues of gender disparities related to opportunities within the workplace, if to help encourage women to extend their working lives.

Overall, it is evident that caring can place a restriction upon an individual's ability to extend their working life. Burdens associated with caring need to be overcome if persons are to be encouraged to continue with their working lives, whether that is through providing informal care or as part of paid employment, more support to carers is needed.

2.6.1.2 Time spent caregiving and the implications this has for economic activity in later life

As has been discussed in relation to provision of care, women often are the most likely to take on caregiving responsibilities (Dentinger and Clarkberg, 2002). Women are reportedly 40% more likely to provide care external to their own household (Arber and Ginn, 1990). In terms of actual time spent providing care, evidence suggests that on average women report spending 50% more time caring than men (Dentinger and Clarkberg, 2002). Figure 44 confirms that women consistently provide more care than men, except beyond the age of 65.

Figure 44: Number of hours provided of unpaid care per week, by gender and age (%) (England), 2011



Source: (ONS, 2013h-a)

Literature examining the influence of work-life balance suggests that increased amounts of time spent providing care, results in a person's own leisure time and time spent working, to reduce (Pylkkänen and Smith, 2002;Yeandle, 2005). With this in mind, women may be more likely to leave the labour market early as opposed to extending their working lives as a consequence of providing more care than their male counterparts across the life-course, and thus are likely to need added support if to extend their working lives alongside such responsibilities.

2.7 The conceptual framework of this thesis

From completing this literature review it was established that factors which influence economic outcomes among older adults, are complex. Understanding the individual characteristics associated with economic activity among older adults, is significant to research by social scientists, as it can help capture which dimensions have an important influence over economic activity outcomes among individuals in later life. The studies reviewed in this chapter,

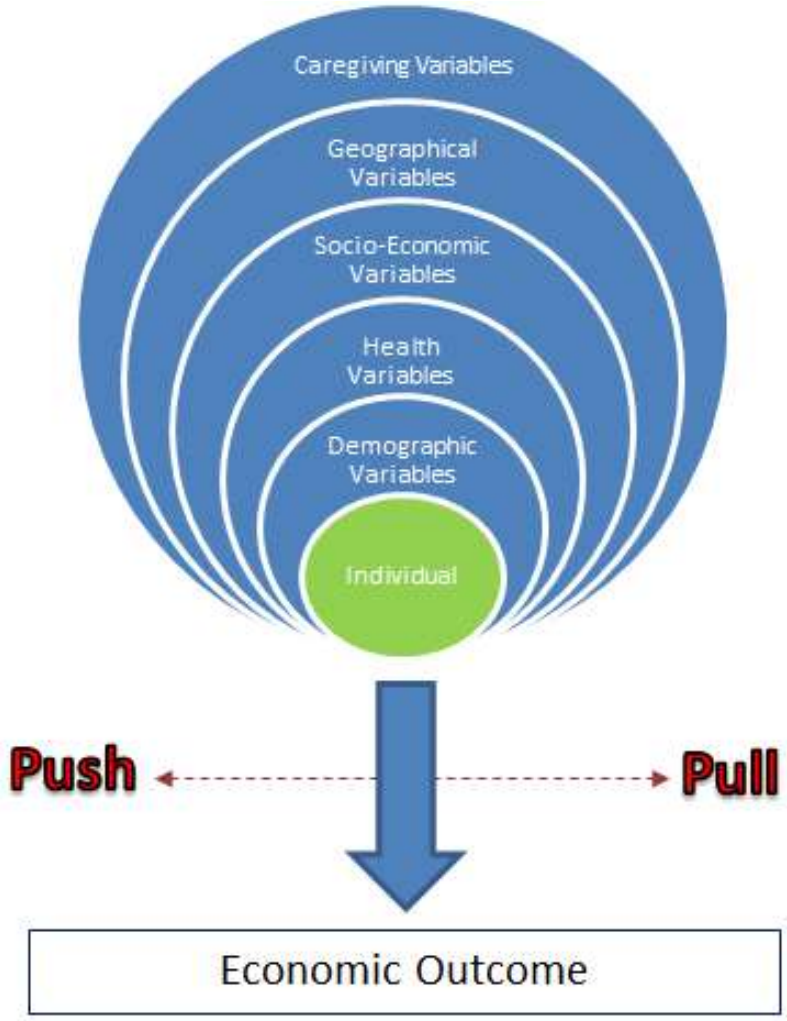
have emphasised that a variety of factors influence economic activity in later life, including demographic, health, socio-economic, geographical and caring variables. However, evidently pre-existing literature appears limited in examining these factors in combination.

Push-pull hypotheses are used to demonstrate factors associated with individuals doing or not doing something and have a wide application across social contexts (e.g. marketing) (Kirkwood, 2009). The push-pull hypothesis has direct application for the context of extending working lives (Jensen, 2005;Kirkwood, 2009;Stibich, 2011;Fehring and Herring, 2012), for example, Jensen (2005) refers to push, pull and jump explanations of why, or why not, older-workers exit the labour market. This hypothesis was a significant contribution to the understanding of which individual characteristics are associated with economic outcomes of later life, and acts as a principal feature of the conceptual framework underpinning this research (Fehring and Herring, 2012).

Evidently, the literature has shown that among variables associated with extending the working life, the relationships of these characteristics are frequently dependent and influenced by other variables. For example, a person's health can relate to the occupation they have. Variable influences have often been shown to be dichotomous. For example, good health is associated with pulling people into staying economically active, while poor health can push people out of the labour market. This fluid relationship supports the ideas of the push-pull hypothesis, which suggests that the direction of the outcome is heavily influenced by the factors that push or pull it.

The conceptual framework of this thesis, illustrated in Figure 45, captures the main variable themes, which were revealed from the literature reviewed in this chapter. This framework also helps to guide the present study in its choice of research questions, rationale, methodological strategies and analysis.

Figure 45: Conceptualising individual characteristics associated with economic outcomes among older adults



Note: Economic Outcome=economic activity or inactivity of individuals
Demographic variables include: age, gender, marital status, ethnicity
Health variables include: self-reported general health (SRGH), limiting long-standing illness (LLSI), Quality of life (CASP-19)
Socio-economic variables include: housing tenure, highest level of education, car access, occupational social class (NS-SEC), pension scheme membership
Geographical variables include: region
Caring variable includes: caring status
Source: Author's Own.

As indicated by Figure 45, the individual characteristics associated with economic activity among older adults are multifaceted. They can encompass: demographic characteristics (age, gender, marital status and ethnicity), health characteristics (self-reported general health, QoL, LLSI reports), socio-economic characteristics (housing tenure, car access, education, occupational social class and pension scheme membership), geographical characteristics (e.g. region) and finally, caring characteristics (caring status). Although these

variables have been shown by existing literature to influence economic outcomes up-to and beyond the SPA independently, it has been noted that there are also overlaps between their influences as independent variables. For example, a person's age has implications for their health and chances of owning a property (Macintyre et al., 1998;Frogner, 2002;Dalstra et al., 2006). For this reason, the conceptual framework presents the variables in collective sets (demographic, health, socio-economic, geographical and caring) organised into converging blue arches, which together centre upon a green circle labelled as the 'individual' (which illustrates the person to which these characteristics belong). The arches are ordered so that the themes most personal to the individual are proximally closest to the centre. For example, factors such as gender, which fall under the theme of demographic variables are located within the archway closest to the individual, while the variable of caring status, although still relevant to that individual, is a factor influenced by the outside world (i.e. others ill-health), thus it falls as the outer-side arch.

Directly below the archway formation, is a bold blue arrow, which points towards a box containing the words 'Economic Outcome'. This box illustrates the economic activity outcome (i.e. active or inactive) relevant to the individual. However, before this arrow reaches the outcome box, a smaller, red dashed arrow intercepts it. Dashes are used to highlight that this influence is not fixed and can go in either direction. At each side of this two-ended dashed arrow, are the words 'Push', and 'Pull'. These words reflect the push-pull hypothesis. The word 'push' is used to show the way some factors will have a push influence over the economic outcome (pushing towards an economically inactive outcome), while the word 'pull' relates to factors which have a pull influence over the economic outcome (pulling towards an economically active outcome). Through using dashes, the fluid nature of the push-pull relationship, is made evident. Furthermore, through intercepting the main blue arrow that meets with the economic outcome, the number of push and pull characteristics can calculated and compared, helping the researcher to determine if the economic outcome of an individual is more likely to be economic activity/ inactivity.

2.8 Summary and limitations of the literature on the topic of economic activity up-to and beyond the SPA

From examining the literature and research findings outlined throughout this chapter, it is apparent that the individual characteristics of economic outcomes among older adults, are varied and complex (Centre for Research into the Older Workforce, 2004). Beginning with the literature identified relating to demographic characteristics associated with economic activity in later life, it was apparent that gender, age, marital status and ethnicity, all appear to play a significant role. The literature observed that the career trajectories of men and women tend to be very different (Johnson and Zaidi, 2007). Evidently, women, particularly those sandwiched between the responsibility of child and elder-care duties, find it difficult to achieve a work-life balance, often opting to exit work entirely or interrupt their career, as opposed to staying economically active (Pylkkänen and Smith, 2002). In light of this, women are often placed at a disadvantage for career advancement and training opportunities which can act as a contributory factor for their career decisions (Quick and Moen, 1998;Merkes, 2003). Among the literature reviewed, one's cohort, ethnicity and location-of-living all also appear to influence whether a person is economically active in later life. This demonstrated that variables were rarely independent in their influence, highlighting the complexity in understanding what determines whether someone extends their working life (Adler et al., 1994;McKay and Middleton, 1998;Pienta and Hayward, 2002;Khan, 2012).

Following the examination of evidence surrounding the influence of demographic factors, health was also inspected. Evidently, the role of age-related declines of ill-health forms only one small part relating to the influence of health. Health-risk behaviours such as smoking and poor diet, and occupation-type/job demands, are also key examples of influences which may contribute to ill-health, and can affect the chances of an individual extending their working life (Adler et al., 1994;Marmot, 2010;Farrow and Reynolds, 2012;Lloyd-Sherlock et al., 2012a).

Socio-economic factors were also identified as significant characteristics associated with economic outcomes among persons in later life. Financial assets including car access and home-ownership, were identified as important

factors associated with decisions to retire, often enhancing an individual's choices and occupation access (Adler et al., 1994). However, there was evidence to suggest that access to finances tend to vary across individuals (Hershey and Mowen, 2000;Montalto et al., 2000). In addition to finances, pension scheme membership, a high level of education, and coming from a higher occupational social class can have positive benefits for a person extending their working life, illustrating the many dimensions, which influence economic activity in later life.

Finally, aspects such as the location-of-living and caring status have been identified as playing a role upon economic activity outcomes (Young et al., 2005;Bonnet et al., 2010). Evidently, the provision of care can often place greater pressures upon persons to exit the labour market. However, this is largely influenced by an individual's age, the intensity of care that is required and the 'carers' present economic activity status.

Overall, it is clear an array of push-pull influences are involved with the decision to retire or extend one's working life (Jensen, 2005). Using the findings of this review, the researcher could more easily identify the gaps and limitations of existing literature surrounding the topic of extending working lives and the individual characteristics associated with economic activity among older adults. It has been clear throughout reviewing the literature on this topic, that predominantly research on the topic of individual characteristics associated with *retirement* appears to be more widely available than research which instead examines the individual characteristics of *economic activity* when individuals are approaching, or who have already reached the SPA. Among research that concentrates on extending working lives, it is evident that the data used often is less recent than that used by the proposed research. Additionally, it is recognised the timing of the present research falls into a unique period, during policy flux (Schaar and Matthiesen, 2011). This adds to the contribution of this research as it can consider the individual characteristics of economic activity when a person is either below or above the SPA, prior to full implementation of policy targeting extending working lives, which can help inform policy. It will also be concentrating on a group of individuals who are pin-pointed throughout the literature as posing a significant issue for the future and who have evoked many of the concerns

surrounding the need to extend working lives (baby-boomers, aged between 50-74 years old). Furthermore, often characteristics are examined in isolation as opposed to in combination. This research endeavours to provide a recent and holistic assessment of individual characteristics associated with extending the working life. A broad understanding of factors which have been identified by other research help the researcher in narrowing this study in selecting appropriate variables. However, through conducting this review a better understanding has been achieved, helping the researcher be more critical and aware of the overlapping influences of variables, which will help in the interpretations of their associations. This research will contribute to an under-researched field of interest and can help to develop the understanding of which individual characteristics are associated with economic activity when individuals are aged above/ below the SPA, which is so urgent if to allow for a sustainable welfare system to be restored in the future.

3. Chapter 3: Methodology

3.1 Introduction

The Literature Review (chapter 2), has examined theoretical and empirical evidence surrounding the topic of extending the working life and has been useful in identifying previous research, which examines individual characteristics associated with economic activity among older adults. The present chapter's purpose concentrates upon the methodological aspects of past literature, assessing which research methods are the most appropriate to address the research questions of the present study.

This chapter opens with a discussion of the study design for this research (section 3.2), followed by a description of the dataset selected (section 3.3). Details of the study population and analytical sample are then presented (section 3.4). A data analysis plan follows, providing specific information on the dataset preparation and the key concepts and measurements, which helped the researcher in operationalising the selection and creation of the outcome and explanatory variables (section 3.5). Section 3.5.2, presents a descriptive profile of the study population including details of respondent numbers. Following this, the bivariate analysis methods used by this research are outlined and the preliminary findings of two correlation matrices are discussed (section 3.5.3). Section 3.5.4, then explores the multivariate analysis techniques selected by this research, including details of the binary logistic regression analyses, which were used. Information surrounding the weighting techniques implemented to ensure the sample reflected the true population is also described (section 3.6). Finally, section 3.7 presents a summary of this chapter.

3.2 Study design

This research aims to examine which individual characteristics are associated with economic outcomes among older adults. In particular, this research seeks to identify the variations in demographic, health, socio-economic, geographical and caring characteristics of economically active and inactive

individuals (men and women), who are approaching (50-up until the year prior to reaching SPA), or who are above the SPA (SPA-74 years old).

The thesis research questions are:

RQ1:	a) Among men and women aged over the SPA (defined as 60 for women and 65 for men) in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are over the SPA and economically inactive in 2010?
RQ2:	a) Among men and women aged between 50 years and the SPA in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are below the SPA and economically inactive in 2010?
RQ3:	Using the results of RQ1 and RQ2, what are the most pronounced differences between persons who are economically active or inactive below and above the SPA?

This study was quantitative in nature due to the interests of the research questions in exploring 'associations', 'differences', 'factors', characteristics' and 'comparisons'; suiting the use of statistical methods. Although mixed methods were considered, focusing on purely quantitative methods allowed greater depth to the analysis and thus was preferred (see section 6.5, to explore options for future analysis).

A cross-sectional survey design was chosen as it allows the analysis of a large number of individuals to be analysed at a single point in time, producing quantifiable data in relation to two or more variables with the capacity to detect patterns of association; directly relevant to the current study's research questions (Bryman, 2008).

Similar studies to the current, have used this design type; for instance, Shacklock and Brunetto (2011) employed a cross-sectional survey design when investigating factors associated with Australian older adults' intentions to extend their working lives, while Hokema and Scherger (2015) used a cross-

sectional, mixed method design, to investigate the causes and reasons for employment beyond the pension age.

A mixture of descriptive, bivariate and multivariate analysis techniques were adopted by this research. This permitted the researcher to vary the level of detail obtained from the analysis conducted. Descriptive and bivariate analytical methods were useful in exploring the less complex associations between economic outcomes and demographic, health, socio-economic, geographical and caring characteristics. Multivariate analysis built upon these findings and permitted the researcher to conduct more detailed explorations between multiple characteristics and their relationships with economic outcomes (see section 3.5.4 and chapter 5). Together this analysis helped to produce a robust contribution of evidence, deepening our understanding of factors associated with economic activity in later life.

3.3 Data: The English Longitudinal Study for Ageing (ELSA)

The data used by this study was from the ELSA; a large scale, nationally representative, longitudinal panel survey, which collects information on individuals aged 50+ and their partners, who live in private households in England. The ELSA's sample comes from households who previously responded to the Health Survey for England (HSE) between 1998, 2004 and 2006. Eligibility for the ELSA sample was based on individuals responding to the HSE and living with at least one person aged 50+ who gave permission to be re-contacted in the future (Taylor et al., 2007). The ELSA is conducted in 'Waves', every two years. The first Wave was in 2002 and the most recent Wave was in 2012 (Wave 6) (Batty et al., 2014). The ELSA's datasets include variables that add to our understanding of what it is like to grow old within the 21st century, which can help the government to plan health-care services and pension systems for the future (The Institute for Fiscal Studies, 2011;NatCen Social Research, 2012;ADLS, 2013).

Each Wave of the ELSA uses interviews comprised of a face-to-face Computer Assisted Personal Interview (CAPI) and a self-completion questionnaire. Due to attrition, refreshment samples were drawn from HSE 2002-2004 for ELSA Wave

3, and HSE 2006 for ELSA Wave 4, and were used to replace and represent the youngest people within the sample as well as respondents who were not contactable, or who had passed away (Scholes et al., 2009;Cheshire et al., 2012).[5]

In addition to the ELSA datasets, datasets including the Labour Force Survey (LFS), British Household Panel Survey (BHPS) and the United Kingdom Household Longitudinal Study (UKHLS/Understanding Society) were also considered by this research. After deliberation, the ELSA dataset was chosen as most suitable for this research, on the foundation of three key reasons. Firstly, the ELSA dataset includes a wide range of socio-economic and health indicators, such as self-reported general health (SRGH), housing tenure and highest educational qualification, all of which have been identified by previous research for their association with later life economic outcomes (Poole, 1997;Frogner, 2002;ONS, 2011b).

A second strength of using the ELSA, relates to its large sample size of approximately 10,000 respondents and their partners, which enhances the reliability of the results and provides insight into potential household influences upon economic activity in later life. Such a sample size, was facilitated by the high response-rates of between 70-90% which resulted in little missing data (NatCen Social Research, 2012) (see section 3.5.2.1 for detailed sample sizes).

A final strength in using the ELSA, relates to it being a secondary dataset. This removed the need for the researcher to collect their own data. Although this reduced familiarity, the researcher had adequate time to acquaint with the dataset before performing analysis. Additionally, secondary data gave the researcher access to a nationally representative sample without the associated expenses and time-constraints of conducting a new survey.

Although the ELSA was chosen based on its advantages, weaknesses of this selection were also recognised. Firstly, the ELSA is restricted to England, limiting the researcher's ability to generalise the findings of the research to the

[5] This research used Wave 5 (2010) of the ELSA dataset as this was the most recent Wave to have been released when this research first began and there did not appear to be much advantage from comparing trends of earlier Waves as preliminary analysis had found the patterns were very alike.

rest of the UK. However, understanding the work and retirement patterns in the English context, can offer lessons for understanding patterns of economic activity up-to, and beyond the SPA in other developed country contexts (Black, 2013).

A second disadvantage to using the ELSA dataset, relates to weighting the data. Weighting is designed to address principally two problems, the first being unequal probability, the second to deal with non-response (Babbie, 2015). However, theoretically weighting is never perfect as of course, the numbers it produces are estimates. Despite this, the ELSA weights are designed to permit researchers to re-proportion the sample to meet their preferences, whereby such scaling does not alter the representation of age/ gender groups. This research adjusts the original ELSA sample and focuses on individuals aged between 50-74 years old. Although weighting can never be flawless, the ELSA allows the original sample to be stratified to suit the preferences of this research and the analytical samples used (see section 3.6 for details on weighting).

A final weakness of using the ELSA, relates to its focus on private households, which restricts the ability of this research to generalise to other household contexts (Larsson, 2009). Wave 3 onwards, included interviews with respondents who lived in institutions or residential care, permitted through following the moves of core members who had subsequently moved into these settings. Research has found that older adults are increasingly living in accommodation which is alternative to private households (Kavanagh and Knapp, 1998). In Britain alone, the number of elderly institutional care places doubled to 530,000 between 1980-1995 (Kavanagh and Knapp, 1998). Although a small percentage of older adults live in care homes, Pannell et al. (2012) report that 93% of older adults live in mainstream "ordinary" housing (including the family home or rented accommodation), whereas only a minority (7%) live in specialist, elderly-focused housing alternatives. Furthermore, this 7% is shown to be largely comprised of individuals within the "oldest-old" groups (85+ year-olds) (Grundy and Glaser, 1997). The sample of this research focused upon "younger" older-persons, aged between 50-74 years old, thus those more likely to be living in alternatives to private households

(e.g. elderly-focused housing) were omitted from the analytical sample, as they were not a key feature of this research's interests.

3.4 Study population

Table 5 provides information on the number of respondents across the ELSA, Waves 1-5. Evidently, respondents fell into 'Core' and 'Non-Core' member groups (frequencies shown in Table 5). *Core members* were defined as individuals who lived within participating HSE households and who met the age criterion for the ELSA (50+ years old). This group also included partners of Core members who were aged 50+ (*Core Partners*). Alternatively, respondents were classed as *Non-Core members.* This group included individuals who did not fall into the Core member groups such as *Young, Old and New partners*.

Core and Non-Core member groups were either *original sample members*, meaning they had participated in the original sample; or *refresher sample members,* recruited after the collection of the original sample (to account for attrition). Table 5 also provides the number of respondents analysed by this research, comprising the *analytical sample* (see also Appendix 1).

Table 5: Core and Non-Core member respondent frequencies of sample, ELSA, Waves 1-5, (2002-2010)

ELSA WAVE	Original Sample: Core Members & Core Partners (50+) (N)	Original Sample: Non-Core (Partners: young YP and new NP) (N)	Refresher Sample: Core Members & Core Partners (50+) (N)	Refresher Sample: Non-Core (Partners: young YP and new NP and old OP) (N)	Analytical Sample (50-74 years old-all respondents)
Wave 1 (2002)	11,392	708 (YP=636 NP=72)	n/a	n/a	9,072
Wave 2 (2004)	8,780	652 (YP=501 NP=94 Core partner=57)	n/a	n/a	6,996
Wave 3 (2006)	7,623	415 (YP=312, NP=103)	1,276	457 (YP=294, OP=142, NP=21)	7,167
Wave 4 (2008)	6,724	395 (YP=276, NP=119)	3,275	656 (YP=345, OP=271, NP=40)	8,345
Wave 5 (2010)	6,366	407 (YP=281, NP=126)	2,892	609 YP=318, OP=229, NP=62)	7,433

Note: n/a=refreshment samples were not included until wave 3, hence no values entered.
YP=young partners
OP=old partners
NP=new partners

-Black cells illustrate sample sizes relevant to Waves 1-4, which were excluded from the analysis of the current study, but are important to show as they contribute to the Wave 5 sample.

-To see the sample numbers of the Above/ Below the SPA groups see Table 6.

Source:Taylor et al. (2007);Scholes et al. (2008);Scholes et al. (2009);Banks et al. (2012:chapter 5);Cheshire et al. (2012) & Author's own analysis of ELSA 2002-2010.

The current study is interested in identifying characteristics associated with economic outcomes of older adults. Exploring the literature, it was noted that *older-workers* are most commonly defined as being aged '50 years old and older' (DWP, 2010a;Yeomans, 2011). Evidently, research has found that individuals aged over 75, have significantly lower rates of economic activity than other 'older-workers'. Many studies exclude 75+ year-olds from their definition of an 'older-worker', as they appear to be different compared to individuals aged between 50-74 years old. The current study replicates this

practise and defines the target sample as individuals aged between 50-74 years old.

Eligibility for a state pension is recognised as a relatively objective measure of retirement (Smeaton and McKay, 2003). The employment rates of individuals appear to decrease significantly post-SPA; the age where qualify to receive a state pension (Smeaton and McKay, 2003;Crawford and Tetlow, 2010). Although there is significant evidence to show that working beyond the SPA and deferring the receipt of a state pension, has many financial and personal advantages (e.g. earning without paying NI contributions, increasing savings, extending pension contributions, providing individual with meaningful tasks or stimulating activities to do, etc.) (Mermin et al., 2007;Clayton, 2008;Hedges et al., 2009;Oakman and Wells, 2012;Dowling, 2013), there remains evidence to show that some people are willing to forfeit these benefits. For some, this appears to be a matter of choice, to avoid for example, the constraints of the labour market; while for others, such as those who have experienced life crises (e.g. redundancy, divorce, inadequate retirement planning, ill health or domestic responsibilities), the decision to remain economically active is less out of a choice and instead more of necessity (Barnes et al., 2004).

The ability to identify whether an individual is eligible for a state pension, or is technically in a position to be preparing and planning financially for their retirement, was of particular interest to this study as it could help to improve our understanding of the factors associated with extending working lives and early labour market exits (Nussbaum and Coupland, 2008). Financial aspects of retirement planning and preparation, in particular the SPA and pension provision, have been shown to be particularly influential upon economic outcomes (Berry, 2010) (discussed further by section 2.4.5). By using the SPA as a threshold in defining two groups of the analysis of this study, the researcher could control for whether a person a person was eligible for a state pension and thus determine whether this had any effect on the characteristics which were associated with economic outcomes (Kennickell et al., 1997;Montalto et al., 2000;James and Sharpe, 2007;Banks et al., 2010).

The SPA defined by this research was 60 for women and 65 for men. This definition matches the SPA regulations enforced before the 'Pensions Act

1995', which has been stable since the 1940 Old Age and Widows' Pensions Act and ensured a consistent definition of SPA was used. The researcher acknowledged that this did mean that for some respondents their actual SPA would differ to the SPA definition used by this study however, it was anticipated that the majority of the analytical sample would relate to the definitions that were selected, and if there were differences, the effect would be minimal (see section 1.2.2 for legislation details).

By de-coupling the concepts of SPA and economic activity, an exploration of the factors associated with 'economic inactivity among those below the SPA' (aged between 50-59/64) (or early exits from the labour market) and 'economic activity among those above the SPA' (60/65-74 years old) (or postponed retirement) could be conducted.

A breakdown of the total analytical sample and the sample sizes of respondents who fell into the groups labelled as 'above' and 'below' the SPA are presented in Table 6.

Table 6: Analytical sample and Sample group frequencies, ELSA, Waves 1-5, (2002-2010)

ELSA Wave	Analytical Sample (All respondents 50–74 years old)	Above the SPA (Men and Women)	Below the SPA (Men and Women)
Wave 1 (2002)	9,072	4,034	5,038
Wave 2 (2004)	6,996	3,422	3,574
Wave 3 (2006)	7,167	3,081	4,086
Wave 4 (2008)	8,345	4,063	4,282
Wave 5 (2010)	7,433	4,039	3,394

Note: Black cells relate to the waves 1-4, which were not used in the analysis of this thesis, but are of interest as points of reference

Source: Author's Own, Unweighted N values

3.5 Data analysis: Methodology and plan

This study uses cross-sectional analysis to examine Wave 5 of the ELSA dataset (2010) (see section 3.2 on the justification of this type of analysis for this

research). A combination of statistical methods were used. Techniques included descriptive, bivariate and multivariate analysis, all of which are detailed more thoroughly within this chapter. Throughout this study, the software IBM Statistical Package for the Social Sciences (SPSS) Versions 20 & 23 were used.

3.5.1 Preparing the dataset for analysis

Since the data was secondary, the researcher's familiarity with the dataset was lower than if primary data had been collected (see section 3.3 for reasoning for using a secondary dataset). However, there was ample opportunity for the researcher to familiarise with the dataset before beginning analysis, enhancing her ability to understand how the data had been collected, to identify variables which were most appropriate in helping to answer the research questions of this thesis, and to categorise variables appropriately (Berthold and Hand, 2007). The literature review was also useful in guiding the researcher in the selection of variables; highlighting gaps in the existing body of evidence, demonstrating the significant associations between variables that have already been uncovered and outlining the coding and methodological techniques commonly used in exploring these associations. Variables were organised as "outcome" and "explanatory" variables (see Table 7).

Table 7: Outcome & explanatory variables

Outcome	Explanatory
-Economic Activity	**Demographic:** -Age (SPA*, Age group*) -Gender* -Marital status -Ethnicity
	Health: -Self-reported general health (SRGH) -Limiting long-standing illness (LLSI) -Quality of life (CASP-19)
	Socio-economic: -Housing tenure -Highest educational qualification -Car/ van access -Occupational social class (NS-SEC) -Pension Scheme Membership
	Geographical: -Region (GOR)
	Caring: -Caring status

Note: Depending on the purpose of the analysis, the analytical sample was manually filtered to allow for the appropriate respondents of interest to the research-questions to be analysed independently as required.

***=inclusion of this variable was dependent on the analysis being computed-this is further explained in the explanatory variable narrations. Refer also to Table 17 key.**

Source: Author's own.

Field (2009) defines an outcome variable as a variable whose values are those which a researcher is trying to predict through one or more explanatory variables, whereas an explanatory variable is defined as a variable used to predict the values of the outcome variable. Appendix 2 and the following sub-sections, elaborate on the use of original variables found in the ELSA datasets, and discusses how they were operationalised to derive variables that were appropriate for the analysis of this research.

Once the researcher had been acquainted with the data and had selected variables to include in the analysis, the next stage was to prepare the data for analysis. The chosen variables were manipulated to help ensure that the results were tailored to answer the research questions of this thesis. To do this, where apparent, the original raw variables found within the datasets, had their response categories of 'refusal, not applicable, other answer, item not applicable, don't know, irrelevant response, incomplete/ No job info collected,

other, schedule not applicable, See INWAVE and Incomplete/ no information', recoded as "missing". Often, these responses were associated with filters of the ELSA questionnaire. Frequency checks illustrated in Appendix 3, revealed that the counts for such responses were normally small (i.e. <30), resulting in their exclusion having a minimal effect on the final results, instead helping enhance the consistency and validity of the analyses[6].

Further manipulation to the datasets included the exclusion of respondents who were younger than 50, or older than 74 years old, or who had been interviewed in residential/ institutional/ proxy settings[7]. This ensured that all respondents were between 50-74 years old (the definition used to represent older-workers; see section 3.4) and living in private households and were therefore homogeneous in terms of their living arrangements and age-range (NatCen Social Research, 2002;Taylor et al., 2007). Notably, weighting was used to enhance the representativeness of the sample and to account for underrepresented groups of individuals (see section 3.6 for details). A final point relates to ethical clearance. Ethical approval was granted by the National Research and Ethics Committee for all Waves of the ELSA data (NatCen Social Research, 2012). Additionally, ethical approval from the University of Southampton's Ethics and Research Governance Online (ERGO) committee, which provided the researcher with permission to begin and conduct her research (see Appendix 4).

3.5.1.1 Key measurement concepts and variables

Sections 3.5.1.1.1 and 3.5.1.1.2 discuss and define the variables listed within Table 7 and Appendix 2, which were central to this research. Initially, the concepts of interest to this study are presented and discussed. These concepts constitute common categories previously identified in the literature, including 'demographic,', 'health', 'socio-economic', 'geographical' and 'caring' characteristics, which have links to the research questions of this

[6] Evidence suggests that a sample size should reflect the size of a population if to avoid making errors when judging the significance of results (Diamond & Jefferies, 2001) (due to the sample sizes being less than 30 it was anticipated through omitting them the results wold not be significantly affected.

[7] Using the SPSS 'select if' function, the variables which asked whether a respondent had been interviewed by proxy/ had had an institutional interview could be omitted from the sample (variable names: [askpx] and [askinst]). Additionally using the variable which recorded respondents age, individuals aged 50-74 years old could be selected (variable name: [DIAGR]) (discussed in more detail in section 3.5.1.1.2.1).

thesis. Following this, their operationalisation through the selection of appropriate variables is also discussed. Where appropriate, the thought processes behind the selection and deriving of the variables and methodology used by this study are outlined, helping to justify and expand on the decisions and choices that were made.

Please refer to Appendix 2, Appendix 5, Appendix 6 and Appendix 7 for the complete details of coding which relate to the variables discussed and derived by this chapter.

3.5.1.1.1 Outcome variable

Field (2009) defines an outcome variable as the variable that is predicted (defined in full, in section 3.5.1). Examining the research questions of this thesis, the variable that the researcher wished to predict related to a respondent's economic activity outcomes. Largely, the present study's interest in economic outcomes relates to the contemporary debates surrounding the EWLA and the distinct gap in the existing body of literature examining economic activity in later life. Until now, retirement outcomes have been the predominant focus (Kotecha et al., 2010;Morrell and Tennant, 2010).

The methods used in selecting and deriving this dependent variable, are now discussed.

Economic activity outcome- The concept of economic activity in the context of this research relates to an individual's relationship to the labour market, and defining it varies across research. 'Non-work' versus 'work', 'economically active' versus 'economically inactive', 'employment status' or 'job type', are among the ways in which research identifies economic activity among individuals. To illustrate, it is interesting to note the work of McKay and Middleton (1998) and to compare it to work by the ONS (2012c). McKay and Middleton defined workers in four ways: 'employed', 'self-employed', 'unemployed' (including persons who were looking for a job), and 'inactive'. The ONS instead used two categories of economically 'active' and 'inactive'. Economically active persons were defined as persons in employment or who were unemployed and seeking work, while economic inactivity was the status of persons in neither employment nor unemployment, for example, individuals

who were not seeking work because they were looking after the home or family, or who were retired, students, or long-term sick. Economic activity can provide a context to other characteristics of individuals, including their health and finances. For example, healthier individuals are reported to be more capable of being in employment (Vickerstaff, 2006). Interestingly, research has also demonstrated that economic activity can have health benefits (physical and psychological) as it keeps individuals healthy and active for longer (Calvo, 2006). Furthermore, individuals who are economically active will usually be in receipt of a stable income (Winkelmann-Gleed, 2012). However, more financially wealthy individuals or those who are of a higher socio-economic status, often have more opportunities to exit the labour force as they do not necessarily need income from paid employment (Stephens et al., 2011;Wahrendorf et al., 2012).

In operationalising this concept, the original variable [wpdes] was used. This variable was categorical and recorded the best description of respondent's current situation. The widely used ONS definition of economic activity was used to derive the binary variable [DV_economicactivity], for which the researcher used as the dependent variable throughout the analysis of this research (ONS, 2013d;ONS, 2013e). This variable assigned employed, self-employed, semi-retired or unemployed individuals into the category of '1=economically active' and those who were retired, permanently sick or disabled, or looking after home or family into the category of '0=economically inactive'. It was difficult to decide whether the category of semi-retirement belonged to the first or second category of the newly derived variable. Research however suggests that semi-retirement is a status of persons who are retiring gradually and is one way in which older adults extend their working lives (Chen and Scott, 2003). Often semi-retirement is characterised by a reduction in working hours, for example from full-time to part-time hours, indicating that these individuals often continue to have some level of involvement in the labour market (Berry, 2011). With this in mind, it was

decided that semi-retired individuals would be included within the 'economically active' category[8].

The researcher recognised that pooling the categories of the original variable [wpdes] into the new, binary variable [DV_economicactivity], did present the risk that the intricate and important differences between individuals' current situations may become concealed. This was a concern as it could mask the heterogeneity of older adults' employment patterns, which could influence the interpretation of results later in the thesis (discussed further by section 6.3). Before continuing with analysis, it was vital that the researcher investigated whether there were any differences within the economic outcome groups, distinguishing between the categories assigned to the newly derived dependent variable.

Using a cross-tabulation (details of this methodology are provided in section 3.5.3.2), the original and newly derived dependent variable were compared, enabling the researcher to obtain a better understanding of the response patterns of each of the variables (Table 8).

[8] Economically active individuals thus include those who are actively part of the labour market or seeking to be part of it, while economically inactive individuals are not part of labour market activity and show no seeking behaviour to become re-involved.

Table 8: Comparing the number of respondents per category for the original [wpdes] variable and the newly derived [DV_economicactivity] variable, (Table of unweighted N values, and weighted percentages), ELSA (2010).

			Frequencies [DV_economicactivity] (N)		
			Economically Active	Economically Inactive	Total
Frequencies [wpdes] (N)	Retired	Count	**0**	**3,488**	**3,488**
		% within [DV_economic outcome]	*0.0%*	*78.7%*	*44.9%*
		% within [wpdes]	*0.0%*	*100.0%*	*100.0%*
	Employed	Count	**2,349**	**0**	**2,349**
		% within [DV_economic outcome]	*76.0%*	*0.0%*	*32.7%*
		% within [wpdes]	*100.0%*	*0.0%*	*100.0%*
	Self-employed	Count	**564**	**0**	**564**
		% within [DV_economic outcome]	*18.8%*	*0.0%*	*8.1%*
		% within [wpdes]	*100.0%*	*0.0%*	*100.0%*
	Unemployed	Count	**105**	**0**	**105**
		% within [DV_economic outcome]	*3.6%*	*0.0%*	*1.6%*
		% within [wpdes]	*100.0%*	*0.0%*	*100.0%*
	Permanently sick or disabled	Count	**0**	**394**	**394**
		% within [DV_economic outcome]	*0.0%*	*10.7%*	*6.1%*
		% within [wpdes]	*0.0%*	*100.0%*	*100.0%*
	Looking after home or family	Count	**0**	**454**	**454**
		% within [DV_economic outcome]	*0.0%*	*10.5%*	*6.0%*
		% within [wpdes]	*0.0%*	*100.0%*	*100.0%*
	Semi-retired	Count	**50**	**0**	**50**
		% within [DV_economic outcome]	*100.0%*	*0.0%*	*.6%*
		% within [wpdes]	*1.5%*	*0.0%*	*100.0%*
Total		Count	**3,068**	**4,336**	**7,404**
		% within [DV_economic outcome]	*100.0%*	*100.0%*	*100.0%*
		% within [wpdes]	*43.0%*	*57.0%*	*100.0%*

Note: The red text refers to individuals in the Economically Inactive category; while green text refers to individuals in the Economically Active category. The highlighted cells identify which category respondents were assigned for both [wpdes] and [DV_economicactivity].

Source: Author's own analysis, ELSA 2010, unweighted N values, weighted percentages.

Table 8 demonstrates that among the economically active category 76% of respondents had originally reported to be employed; while among the economically inactive category 79% of respondents had originally reported to be retired. This was an encouraging finding as the newly derived variable evidently continued to separate the categories of the original variable which had included the majority of responses. Nevertheless, the heterogeneity reflected in the derived two categories is a significant factor taken into account in the interpretation of the results later in the thesis.

The current study aims to understand the characteristics associated with economic activity among individuals who are above and below the SPA, due to the wealth of evidence surrounding the significant effect of age on a person's economic activity (Johnson and Zaidi, 2007;Bytheway, 2012;Erp et al., 2014). In light of this, the researcher also ran analysis to explore the dispersal of responses within the original and newly derived variable while controlling for whether an individual was above or below the SPA. This helped to ensure that pooling the responses would not mask any important differences (see also section 3.5.1.1.2.1, for details of the SPA variable conceptualisation and operationalization; and Table 9 for a breakdown of respondent numbers and variable coding).

Table 9: Comparing the number of respondents per category for the original [wpdes] variable and the newly derived [DV_economicactivity] variable, while also controlling for SPA. ELSA (2010)

		SPA		
[DV_ economic activity] categories	**[Wpdes] categories within [DV_ economic activity] categories**	Above the SPA	Below the SPA	Total
Economically Active	Employed	491	1,858	2,349
	Self-employed	155	409	564
	Unemployed	11	94	105
	Semi-retired	32	18	50
	Total	689	2,379	3,068
Economically Inactive	Retired	2,993	495	3,488
	Permanently sick or disabled	93	301	394
	Looking after home or family	253	201	454
	Total	3,339	997	4,336
Total	Retired	2,993	495	3,488
	Employed	491	1,858	2,349
	Self-employed	155	409	564
	Unemployed	11	94	105
	Permanently sick or disabled	93	301	394
	Looking after home or family	253	201	454
	Semi-retired	32	18	50
	Total	4,028	3,376	7,404

Source: Author's own analysis, ELSA 2010, unweighted N values

Examining Table 9, it is evident that among 'retired' individuals or those who are 'looking after the home or family', the majority were above the SPA. (N values=2,993 vs. 495; 253 vs. 201). Conversely, among 'employed', 'self-employed' or 'unemployed' individuals, the majority were below the SPA (N values=1,858 vs. 491; 409 vs. 155; 94 vs. 11).

Although the majority of individuals who are above the SPA are in categories which were later coded as economically inactive, and the majority of individuals who are below the SPA conversely are in groups which fell into the economically active category, the categories of 'semi-retired' and 'permanently sick or disabled' were the exceptions. Among individuals who are above the SPA, a higher number of respondents identified themselves as 'semi-retired' compared to individuals below the SPA. Existing literature notes that semi-retirement is among one of the methods used by individuals to extend their working lives (Chen and Scott, 2003). Notably, the cell counts attached to this category were relatively small (N values: above the SPA=32; below the SPA=18; total number of respondents=50), further justifying the researcher's later decision to pool categories into 'economically active' and 'inactive' groupings in order to improve the reliability of the findings.

Existing research, such as that by Humphrey et al. (2003), has found that the earlier a retirement occurs, the more likely it is to have been driven by health. Table 9 also notes that among 'permanently sick or disabled' individuals, the majority were below the SPA (N values: above the SPA=93; below the SPA=301). Due to the cross-sectional nature of the current study and that of Humphrey et al. (2003), our ability to know whether poor health led to retirement or whether retirement led to poor health is compromised. Despite this, Phillipson and Smith (2006) in their literature review of UK-focused, quantitative and qualitative studies between 1999-2005 on work and retirement, identify a distinct link between poor health and early retirement offering further support to the trends depicted by the current study.

Although the level of detail relating to the original sub-groups of the [wpdes] variable was partly compromised due to pooling the categories in the newly derived dependent variable, a wider array of independent characteristics were possible to explore (including a selection of demographic, health, socio-

economic, geographical and caring factors). This is a key contribution of the present study as existing research tends to focus on one or two independent variables, as opposed to a combination of factors.

3.5.1.1.2 Explanatory variables

Explanatory variables are defined by Field (2009) as the variables used to help predict the outcome variable (see section 3.5.1 for full definition). Using existing literature that explores the topic of extending working lives and the research questions of this thesis, the explanatory variables selected by this research relate to individual 'demographic, health, socio-economic, geographical and caring' characteristics.

3.5.1.1.2.1 Demographic characteristics

Demographic factors are widely identified in social science research as they enable non-opinion, non-manipulatable characteristics of a respondent to be identified (Lavrakas, 2008). Many studies use demographic characteristics as independent variables (Thomson, 2007). The current study concentrates upon basic demographic features, including an individual's: age, gender, marital status and ethnicity (Thomson, 2007;Lee and Schuele, 2010). The literature review did hint towards other demographic factors being associated with economic outcomes, including for example, the number of children/ dependants, date of birth, etc (Szinovacz et al., 2001;Pienta and Hayward, 2002). Although there was an option to include these characteristics as variables, the researcher made the conscious decision not to include them in the current study. This was due to concerns relating to multi-collinearity (e.g. the present research includes variables relating to individuals' SPA and individuals' age; date of birth would be highly correlated to these and would potentially present issues for the analysis) (Agresti and Finlay, 2009;Vatcheva et al., 2016). Furthermore, the variables chosen were those most widely used in the literature and the most holistic representation of purely demographic indicators (Thomson, 2007;Lee and Schuele, 2010;Vlachantoni, 2010). The contextualisation and operationalisation of the variables selected will be discussed below.

Age- The literature suggests that old age is positively associated with labour market exits (Adams et al., 2002;Bardasi et al., 2002;Thurley, 2008). Closer examination of this evidence reveals that health deteriorations, combined with the need to provide care, are commonly reported for these withdrawals (Evandrou and Glaser, 2004;Merline et al., 2009). The concept of age was used in two ways by this research. Firstly, it was used to examine the chronological number of years a person has lived, facilitating the researcher in identifying which cohort an individual belonged, while also enabling the researcher to better identify individual's proximity to being above/ below the SPA (Lloyd-Sherlock, 2004). The second conceptualisation of age, sought to define individuals as "above"/ "below" the SPA. As was highlighted in section 3.4, the definition of the SPA selected for this research was 60 for women and 65 for men, the SPA criteria's used from 1940-1995 (see section 2.2.1.2), and which are anticipated to remain relatively accurate in defining the official SPAs of the study sample, despite policy adjustments. Through identifying whether an individual was above/ below the SPA, the researcher could examine individuals' economic activity status, helping to identify factors associated with the two types of economic outcome.

The original variable found within the ELSA Wave 5 dataset used to examine age, was named [DIAGR]. This variable was formerly continuous, based on the information provided in the interview and recorded in the household grid (NatCen Social Research, 2012).

To begin, the researcher sought to identify whether a respondent was above/ below the SPA. The decision to examine chronological age as opposed to one's date of birth in defining a person's SPA enabled the researcher to use a constant measure of SPA (as opposed to the SPA definitions of modern society which calculate unique SPAs depending on individuals' date of birth) (DWP, 2010b). The SPAs used by this research were different for men and women (see section 3.4) therefore, to allocate the appropriate SPA it was vital to identify the respondents' gender. Using the information from the original gender variable [DHSEX] (see Gender- heading to follow) and the original age variable, two new variables were derived (named: [spa_60_50_AND_ABOVE_ONLY] and [spa_65_50_AND_ABOVE_ONLY]). These derived variables identified whether respondents were above/ below the SPA.

Using respondents reported chronological age, the researcher could more easily identify whether individuals were above the SPA/ below the SPA. Those who were above the SPA were assigned the value of '1'; while persons who were below the SPA were assigned the value of '0'. The variable labelled as [spa_60_50_AND_ABOVE_ONLY], identified the SPA relevant to women: 60, while the variable labelled as [spa_65_50_AND_ABOVE_ONLY] identified the SPA relevant to men: 65. These variables were then merged to derive a variable named [SPA][9]. This newly defined variable was used in two ways. Firstly, it could act as an independent variable to identify whether there was an association between an individual's status of SPA (i.e. whether they were above/ below the SPA) and economic activity. Secondly, this variable could help to filter respondents into the separate groups of either being above/ below the SPA, permitting the researcher to examine the association between individual characteristics and economic outcomes while controlling for respondents SPA.

The next stage of variable manipulation required the researcher to create variables, which could identify the age bracket to which a respondent belonged. To represent all possible combinations of respondents that the analysis of this study required to answer the research questions, nine individual age variables were needed. The age brackets used, each spanned 5 years: 50-54 years old, 55-59 years old, 60-69 years old, 70-74 years old. The brackets included by the derived variables were tailored to the group of interest to which they would accompany in the analysis. The purpose of these variables was to allow the researcher to gauge the association between age and economic outcomes (regardless of being above/ below the SPA, or male/female). The variables derived were named: [REG_All50plus_age], [REG_All50plus_men_age], [REG_All50plus_women,age], [REG_ABOVE_AGEGROUPS], [REG_Men_abovespa_Age], [REG_Women_abovespa_Age], [REG_BELOW_AGEGROUPS], [REG_Men_belowspa_Age], [REG_Women_belowpa_Age].[10]

[9] Please note [SPA] also accompanied all Health variables in order to standardise the results.
[10] Table 17, page 144 provides details in its accompanying key of when each of these variables were used.

Gender- Literature has identified gender as influential upon economic outcomes (McKay and Middleton, 1998;Pienta and Hayward, 2002;Flynn, 2010). For example, evidence demonstrates that women live longer on average and have different roles to men within society (Quick and Moen, 1998;Szinovacz et al., 2001;Kim and Moen, 2002;Orfila et al., 2006). Coupling this evidence with the noted gender differences in physical and mental health reports across the lifespan, (whereby women exhibit more chronic conditions in later life whereas men tend to die earlier due to conditions such as high cholesterol) (Lund et al., 2001;Robroek, 2011;Bytheway, 2012), evidence has also shown that women are more likely to act as caregivers across the life-course (except in old-age) (Navaie-Waliser et al., 2002;Burton et al., 2003). Caregiving has been associated with interruptions to one's career trajectory. Together this highlights the importance of incorporating gender in the analysis of this study as it is likely to be very influential upon economic outcomes (Tajfel, 1974;Pienta and Hayward, 2002;Parry and Taylor, 2007;ONS, 2012b-a). Finally, gender was a key consideration for identifying different SPAs for men and women (discussed in the previous heading Age-). In operationalising this concept, the original gender variable [DHSEX] was used to derive a new binary variable named [GENDER][11].

Marital status- The concept of marital status within this research was primarily used as an indicator of immediate family who may influence someone in extending their working life (Chappell, 1991). Literature has suggested that marital status can influence who lives in a household (Peterson and Gerson, 1992). In particular, spouses, partners, children, dependants or the lack of such individuals, often correlates with whether a person is married or has a partner. Evidence also suggests that respondents' marital/ partnership status can affect individual decisions relating to economic activity (Lund et al., 2001;Szinovacz et al., 2001;Szinovacz et al., 2012a). For example, research has shown that partners often prefer to synchronise their retirement (Bardasi et al., 2002). Given the discrepancies in the SPA and the tendency for women to

[11] It was noted that the cell counts for men appeared to be smaller than those of women (when examining the sample as a whole: 50-74 years old and among individuals who are above the SPA) (even after weighting) (weighting discussed in section 3.6). This was kept in mind for the analysis; preparing the researcher to be critical of the reported significance values accompanying results using this variable (see Table 13, page 142, for the counts relating to gender).

marry older men (Coles and Francesconi, 2011), it becomes more apparent as to how marital status can influence economic outcomes (Young et al., 2005). In order to operationalise this concept, the original marital status variable named [DIMAR] was recoded into a new variable named [MARITAL_STATUS]. This new variable simplified the original variable through merging categories to contain respondents who were similar in terms of their living arrangements.

For example, legally separated/divorced respondents were placed into the new category of 'divorced'. Divorce rates have progressively increased, as legislation such as the Divorce Reform Act 1969, which came into effect in 1971, has made it easier for couples to divorce upon separation. Additionally, literature suggests that women's increased participation in the labour market has enabled them to no longer financially depend on their husbands, further highlighting why there have been increases in reports of divorce (ONS, 2011c). The highest divorce rates in 2011 were among those aged between 40-44 years old (ONS, 2011c). This suggests that the younger end of the baby-boomer cohort are among the most frequent to report divorcing, while younger generations increasingly favour cohabitation over marriage (Mock and Cornelius, 2007). However, the sample of this research is likely to represent the baby-boomers, who are persons born into a generation where marriage was encouraged but where divorce later became accessible and thus it can be anticipated that marital status and changes in such status may be an influential factor for these individuals (Smeaton and McKay, 2003;ONS, 2011c). The original categories of being married first and only marriage/ remarried, second or later marriage, were merged into the new category of 'married' as the researcher believed that these individuals were likely to be similar in their characteristics and likely to live with their spouse. Respondents who were formerly civil partners were assigned into the category of 'divorced', whereas responses of a civil partner in a legally recognised civil partnership/ a civil partner and has been married, were placed under the newly derived variable category of 'married'. Given that this research focuses upon older adults, it has been recognised that these persons are more likely to be widowed (Wu et al., 2014). Similarly to those who are separated or divorced, widows are more likely to live alone (Bonnet et al., 2010). However, it has been argued that widows should be considered distinctly because of the implications that the

death of a spouse can have on an individual's financial and living arrangements (Wedderburn, 1965;Lin and Brown, 2012). What is more, such individuals are less likely to work (Smeaton and McKay, 2003;Phillipson and Smith, 2006). Respondents reporting to be widowed or a surviving civil partner, were placed into the new category of 'widowed'. The final category was labelled as 'single', and identified persons who were single (never married) and thus are more likely to live alone (Pearlin and Johnson, 1977;Stimpson et al., 2012). Research has shown strong negative correlations between singlehood on the one hand, and health and employment outcomes, highlighting the advantages of including this category as separate for the present study (Brown et al., 2005).

Ethnicity- The literature review demonstrated that England's ethnic population has become increasingly diverse (ONS, 2012b-b). With respect to the association of one's ethnicity with economic outcomes, research suggests that persons who come from minority groups are often exposed to additional push factors. These include cultural expectations such as looking after elders, and lack of UK recognised qualifications, making such individuals less likely to extend their working lives (Katbamna and Matthews, 2006;Khan, 2012). In order to operationalise the concept of ethnicity the variable 'Ethnic group (from feed forward information)' named [fffqethn] in Wave 5 was used, which included the categories of: White, Mixed ethnic group, Black, Black British, Asian, Asian British and Any other group. Notably, examining Wave 4's dataset, from which the responses had been fed forward to derive the variable in Wave 5, the white category included all persons who were white and not only white British[12].

In operationalising the concept of ethnicity, Wave 5's original ethnicity variable was simplified to remove the less detailed filters of the original variable, leaving 7 response categories of: 'White', 'Mixed ethnic group', 'Black', 'Black

[12] Notably, in order to maintain the respondents' confidentiality, ethnicity variables and their relevant coding were somewhat restricted in terms of their levels of detail (e.g. white & non-white, as opposed to BME groups being defined separately). The researcher thus was limited in their choice, however sought to select the variable that provided the most detailed information, which was [fffqethn].

British', 'Asian', 'Asian British' and 'Any other group'. The final derived ethnicity variable was labelled as [ethnicity][13].

3.5.1.1.2.2 Health status

Under the current World Health Organisation (WHO) definition, first formulated in 1948, health is described as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2006;Huber et al., 2011). In light of this definition, the concept of health for the purpose of this research was broad and thus a variety of concepts and variables were used by the analysis to ensure it was well resembled. Primarily, the purpose of including health as a variable was to examine whether an individual's health (poor/ good), was associated with economic outcomes. An individual's own thoughts of how well they currently are, is demonstrated by the literature to influence their economic outcomes (Calvo, 2006). Evidently, a person's own beliefs about their health may contrast with more objective measurements however, both objective and subjective measures of health have been shown to influence whether a person extends their working life (Bound, 1991;Calvo, 2006;Johnston et al., 2007;Johnson, 2015). The validity of subjective self-reporting is often identified as a disadvantage of such measures (Bound, 1989;Haveman et al., 1989;Bound, 1991;Fayers and Machin, 2007). However, objective measures do not necessarily provide more accurate indications of the impact health has on economic outcomes (Bound, 1991;Müters et al., 2005;Wu et al., 2013). For example, self-reported health is highly correlated with actual health (Bound, 1991;Müters et al., 2005;Wu et al., 2013). Additionally, the self-reported nature of health variables provides insight into respondents' own thoughts and feelings about their health, whilst also enabling the researcher to gain an understanding of the respondents' mental and physical well-being. Consequently, this research also uses health variables to further our understanding of a person's physical and mental well-being.[14] By including variables covering both physical and psychological

[13] Preliminary frequency checks revealed that the counts for the ethnicity groups were small compared to white respondent numbers (in some instances with counts of <30), and for this reason, analysis which included this variable was considered carefully (see Appendix 14)

[14] Literature suggests that the incidence of poor health increases with age (Hoeymans et al., 1997; Morack et al., 2013). In order to account for this, the concept of age was once more operationalised, allowing the

aspects of health, a more holistic understanding of the association between health and economic activity could be ascertained (Naylor et al., 2016). The considerable array of health conditions possible in an individual's health profile can make it very difficult to ensure that such health status is properly represented; however, by using multi-domain variables as opposed to disease-orientated variables, health could be better represented (Johnson and Wolinsky, 1993;Altman, 2001). The researcher explored relevant literature to identify variables most appropriate in measuring health status among older adults(Johnson and Wolinsky, 1993;Borawski et al., 1996;Bowling and Windsor, 2008;Wu et al., 2013). To avoid issues relating to multi-collinearity, it was essential to include variables representing different aspects of health, further influencing the choices made by the researcher in terms of variable selections.

Self-reported general health (SRGH)-The first explanatory variable to operationalise the concept of health, was SRGH. In this context, the concept of health related to respondents' own perspective and subjective beliefs of their general overall wellness. Of the measures selected to represent and measure health, SRGH was the most all-encompassing overview spanning across both physical and psychological aspects of health.[15] Cross-sectional literature has found that health in this sense influences economic outcomes, whereby self-reports of ill-health are associated with workforce exits, whereas self-reports of good health are associated with extending the working life (Vickerstaff, 2006;Beck and Quinn, 2012).

In operationalising this concept, the original variable relating to respondents' SRGH within the dataset was [HEHELF]. Using this variable, a new variable

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researcher to identify a respondent's numerical age whilst letting them gauge how 'healthy' a respondent was. Using standardisation, age could be kept constant enabling the researcher to compare health among persons of the same age group (e.g. comparing health among persons aged between the SPA (60/65) and 74 years old) (McMicheal, 1976). All of the derived health variables were accompanied throughout the analysis by the variable [SPA] so that individuals could be identified as being above or below the SPA (for details of how this variable was derived see section 3.5.1.1.2.1, Age-).

[15] Notably, the ELSA team has investigated the effects of question order and response choice on self-reported health status and has helped to improve later versions (wave 5 benefited from these trials) (Nunn et al., 2007; Bowling and Windsor, 2008)

named [pooled_self_reported_health], was derived. This newly derived variable, pooled responses into three categories: 'Excellent', 'Fair' and 'Poor' (Figure 46 uses colour-coding to illustrate how this variable was derived). Research by Friedman and Amoo (1999) suggests that a scale which has an equal number of favourable and unfavourable response options is balanced. For this research, three categories were used to create a balanced scale (one favourable, one unfavourable and one neutral response option). This allowed the researcher to examine whether respondents' perception of their current health status was associated with their economic outcome.

Figure 46: Operationalisation to derive the SRGH variable.

Colour coding refers to how categories of the variable were transformed into a pooled response category.

Source: Author's own.

Limiting Long-Standing Illness (LLSI)- Research by Sinclair et al. (2014) suggests that although SRGH is a more appropriate way of measuring a person's healthy life expectancy, reports of a LLSI can be a better indicator of disability-free life expectancy. It appears that a person's age and the type of LLSI which is reported, can be a significant factor in what health outcomes are reported, whereas the evidence surrounding a person reporting a disability when they have an LLSI is more consistent (Wannamethee and Shaper, 1991;Idler and Benyamini, 1997;Miilunpalo et al., 1997;Manor et al., 2001). Research has found that reports of a LLSI show strong associations with negative reports of self-rated health, particularly among elderly individuals (Manor et al., 2001). Furthermore, previous research suggests that individuals who report a LLSI are more likely to also report having a routine or manual job and to exit employment earlier (Mermin et al., 2007;Palmer, 2014a). In addition, if an illness is limiting, an individual's ability to be in the workforce is

hindered, suggesting that those who report a LLSI may be at an increased risk of exiting the labour market (Rice et al., 2010).

Research has found that some health conditions are asymptomatic, even at moderate and advanced stages (Johnston et al., 2009). This can mean that some people may have a condition, but it may not affect the way they feel, which can result in some self-report measures overlooking these illnesses, despite the potential for them to have serious long-term implications (e.g. a person with diabetes may require frequent check-ups and screening to detect future complications) (Johnston et al., 2009;Dinca-Panaitescu et al., 2012). The advantage of including LLSI as an independent variable, is that it can pick up on a different aspect of health and can provide an additional indication of individuals' non-temporary health status (Ware et al., 1981;ONS, 2016).

In order to derive a variable examining reports of a LLSI, the researcher first identified whether a respondent had a long-standing illness (using the original variable [Heill]), and if so, whether it was limiting (using the original variable [Helim]). The researcher merged appropriately the information of both these original variables, to derive a 3-category variable named [LLSI]. This derived variable was assigned the values of 'Yes, I have a limiting long-standing illness', 'Yes, I have a long-standing illness but it is not limiting' and 'No, I do not have a limiting long-standing illness'. It was important to distinguish between people who have a LLSI and manage it on a day-to-day basis, and those who have a LLSI that limits them as this allowed the researcher to gain a more holistic understanding of how the experience of ill health can influence economic activity outcomes of later life (Ayis et al., 2002).[16]

Quality of Life (QoL)/ CASP-19- The variable CASP-19 for the purpose of this research was operationalised through the concept of QoL, that being the general well-being of a person or society which can be defined through their health and happiness (Howel, 2012). QoL using CASP-19 can be examined over four domains, including: Control, Autonomy, Pleasure and Self-realisation

[16] Notably, the researcher in earlier stages of analysis had considered including variables to represent one's difficulty with ADL and IADLs. However, there were issues linked to multi-collinearity limiting the researcher's ability to include such variables into the final model. The advantage of using LLSI as opposed to the ADL/IADL variable is that the respondent could provide a perspective about their daily life as a whole rather than particular activities of daily life.

(Hyde et al., 2003). The concept of QoL for the purpose of this research concentrates on the psychological aspects of health. In particular, this variable was a key indicator of respondents' mental well-being (Wiggins et al., 2004;Howel, 2012). The CASP-19 scale can help to measure one's social circumstances (e.g. whether they report to have family responsibilities) and functional limitations (e.g. whether they feel they can do things they want to) which extend beyond health reports. Research suggests that older age groups are at an increased risk for reduced QoL as a result of long term illness and functional limitations (Netuveli et al., 2005). However, further research using the ELSA has shown that QoL among older respondents can vary with one's socio-economic position, feelings of adequacy of one's pension, their housing tenure and feelings of having lived a fulfilling life (Wiggins et al., 2004;Blane et al., 2007). Evidently, research has found that persons who have higher CASP-19 scores tend to be wealthier (Banks et al., 2010). Regarding CASP-19 and its association with retirement and economic activity in later life, it appears that persons who continue to participate in socially productive activities have improved prospective QoL in early old-age (Siegrist and Wahrendorf, 2009). Support for these findings also comes from research by McMunn et al. (2009) who found that persons in paid work report more favourable well-being, while Siegrist et al. (2007) report reduced well-being to be positively associated with an intention to retire.

In operationalising this concept, the original variable named [CASP19] was used. This variable was formerly a scale variable however, for the purpose of analysis the researcher required the variable to be made categorical so that the researcher could easily identify high and low scorers. A binary variable was created in order to identify if the respondent reported a high or low QoL. Scores of 0-41 reflected 'low QoL', while scores of 42-57 related to 'high QoL'. There is a lack of literature which uses CASP-19 in a categorical way, however research by Netuveli et al. (2006), using the ELSA Wave 1 (individuals aged 50+, men and women) suggests that the average CASP-19 score is *42.5*. In light of this, the categories assigned seemed appropriate, placing people above the average into the higher QoL scoring group and those who scored

below average in the low scoring QoL group (Netuveli and Blane, 2008). This newly derived categorical variable was labelled as [REG_CASP19][17].

3.5.1.1.2.3 Socio-economic status (SES)

SES is a broad concept, itself straddling a range of further concepts. For this research, SES is a concept which collects information on a respondent's status in society and their economic status. In particular, information surrounding respondents' financial assets (e.g. housing tenure) and characteristics related to their SES (e.g. occupational social class) are explored. SES is commonly used in research examining elderly populations, and results have found that SES can contribute to disparities in health among this population (Shavers, 2007). Among older adults, SES is particularly interesting as, in line with the Cumulative Advantage-Disadvantage (CAD) hypothesis, older adults' accumulation of SES increases with age, and is most intensified in old-age (Dannefer, 2003;Ferraro and Shippee, 2009) (see section 2.4 for details of the CAD hypothesis). Frequently used measures of SES include a person's income, wealth, social class, education and current or last occupation (Shavers, 2007). The operationalisations of variables related to this concept, used by this research are now discussed[18].

Occupational Social Class/The National Statistics Socio-Economic Classification (NS-SEC) - The 'NS-SEC' is a socio-economic classification method used within the UK (ONS, 2013c). Academic research and official statistics both have used this method to identify a person's occupational social class. As a concept, occupational social class can capture and measure employment relations and conditions of occupations, helping to structure individuals' socio-economic positions in modern societies and explain the

[17] During the earlier stages of the analysis, the researcher considered extending the variables linked to quality of life, to include a variable which could provide an indication of respondents happiness. The original variable [pscedd] was identified, which asked respondents whether they had felt happy much during the past week. However, preliminary analysis using this variable demonstrated there to be multi-collinearity between the happiness variable and CASP-19 variable. CASP-19 is more widely used, suggesting that is more robust as a method of measuring a person's quality of life, thus it was decided only this variable would be included in the analysis, and that the variable of happiness rating would be omitted.

[18] Of the variables included in the analysis, this selection was the most difficult. Variables that were included examined a variety of angles, providing insight into individuals' financial assets and resources accumulated across their life-time shedding light on e.g. health, previous career trajectory, level of intelligence, socio-economic class, expenses, familial background, etc. Notably, the researcher decided not to include a variable of 'income' as this would present issues of multi-collinearity with economic activity as the dependent variable of interest.

differences of social behaviour (ONS, 2013c). Dini (2009) showed that a person's occupational social class has links to economic outcomes, for example, men (aged 50-SPA) in intermediate occupations are more likely to be employed than men in managerial or professional occupations. The original variable [w5nssec5] was a long version of the NS-SEC. This variable was used to derive a new variable, which the researcher named as [nssec_status]. This newly derived variable removed and pooled the less detailed filters to leave a simpler variable that had five categories: Managerial and professional occupations, intermediate occupations, small employers and own account workers, lower supervisory and technical occupations, and semi-routine and routine occupations[19]. Notably, responses collected from individuals who were economically inactive (including those who were originally identified as unclassifiable and non-workers) still had had their responses recorded however, these responses relate to individuals' last/most recent occupational social class. In line with the concept of SES discussed above, occupational social class can be operationalised to hierarchically display a respondent's SES. Using such a recognised measure of socio-economic classification also helps to extend the generalisability of this research and its findings, as it can be compared to similar research which uses this measure.

Car access- As a concept, car access relates to a respondent having access to transport (in this case a car/ van). Access to a vehicle can constitute both a sign of social status in one's ability to afford a vehicle or to be driven (Raphael and Rice, 2002), whilst can also be a sign of health status in the ability to drive independently (Macintyre et al., 1998;Macintyre et al., 2001;Ong, 2002;Raphael and Rice, 2002). Furthermore, vehicle access can be a sign of an individual's flexibility and ease to continue working and have access to services, whereas even if a person does not drive themselves, having access to a vehicle may make it possible for them to be driven to health appointments (Hamer, 2004). Vehicle access has been identified by the literature as an important socio-economic indicator associated with earnings and employment,

[19] Note: From here on, the categories of the occupational social class variable are referred to as:
- managerial and professional occupations= managerial occupations
- intermediate occupations= intermediate occupations
- small employers and own account workers= small employers
- lower supervisory and technical occupations= lower supervisory occupations
- semi-routine and routine occupations= semi-routine

but also with positive health outcomes and a lower probability of reporting a LLSI (Bauer et al., 2003;Davey, 2007). Operationalising the concept of vehicle access, the original variable [spcar] was used to derive a new binary variable named [caraccess], which could illustrate whether a respondent had car access or not.

Housing tenure- The Marmot Review (2010), among other literature discussed within chapter 2, section 2.4, identifies housing tenure as a variable which can impact individual's decisions surrounding economic activity in later life. Housing tenure is an indicator of SES, often associated with individual wealth and ownership of assets (Galobardes et al., 2006a;Lusardi and Mitchell, 2007). Gjonça et al. (2010) using data from the ELSA, found evidence to suggest a strong association between a person's housing tenure and their marital status, with married and cohabitating persons being less likely to rent their home compared to persons who are separated or widowed. Other research has also shown that respondents who are home-owners, are likely to be of a higher SES and are more likely to be married (Frogner, 2002). For the purpose of this research, the original housing tenure variable [HOTENU] was used.

In addition to this variable, this research also distinguished a tenant's landlord as being the local authority/ housing association (LA/HA) or private. Grundy and Sloggett (2003) have shown that LA renters, particularly those who are in receipt of income support, are more likely to report bad health, a determinant which has been associated with early exits from employment (Vickerstaff, 2006). Further research from the United States has shown that savings and investments among renters nearing retirement age are particularly important due to the renters' inability to convert home equity into cash, providing insight into such persons' typical monetary circumstances (James and Sharpe, 2007). Savings and investments have been reported to be most important among persons who rent LA properties, as these individuals are more commonly semi-skilled or unskilled workers on low incomes and often on supplementary benefits (Forrest and Murie, 1983;Dietz and Haurin, 2003;Palmer, 2014b). Evidence has also shown that private renters are more likely to become home-owners, which suggests that they are often more wealthy than public tenants, and more likely than public sector persons to be professionals (Forrest and Murie, 1983). In order to distinguish the type of tenancy, the variable

[HOLAND] which asks renters who their landlord is, was used. This variable was simplified into a binary variable, named [who_is_landlord]. This newly derived variable merged the responses of 'Local authority or council' with 'Housing association or co-operative or charitable trust' to create the category representing LA/HA renters, and the responses 'Individual private landlord', 'Employer of a household member', 'Relative/ friend of a household member' and 'Another organisation/ individual' to create the category representing private renters.

Finally, in order to derive the housing tenure variable used by this research, the original housing tenure variable was simplified, merging categories of persons who exhibited similar characteristics and/ or with low cell counts. For example, the categories of 'live here rent free (including rent free in relatives/ friend)' and 'squatting' were merged to create the new category 'rent-free'. Similarly, individuals who were 'buying with help of mortgage or loan' and 'paying part rent and part mortgage shared ownership' were pooled together into a category, which was labelled as 'part-rent and part-mortgage'. Literature has found that older persons are more likely to be home-owners, therefore this category was kept distinct (Frogner, 2002). The newly derived variable was called [S24_tenure_h]. Until now, the renters had been treated as homogeneous, however the final housing tenure variable distinguished between LA/HA and private renters through merging [S24_tenure_h] and the [who_is_landlord] variable, deriving the variable used by this research, which was named [S24_REAL_HOUSING_TENURE].

Highest educational qualification- The literature review notes that education plays a role in individual outcomes in terms of extending the working life (Ross and Wu, 1995;Johnson and Zaidi, 2007). For instance, more highly educated individuals often take on white-collar professions and less physically-demanding jobs, and tend to report fewer health and well-being problems (Mermin et al., 2007;Mermin et al., 2008;Lain, 2012). Higher educational qualifications suggest that a respondent has had more years of schooling, preparing individuals with more skill-sets, knowledge and intelligence (Harvey, 2000;Griliches and Mason, 2010). Furthermore, higher education may relate to the opportunities a person has been exposed to in their lives, with better educated persons tending to come from more advantaged socio-economic

groups (Galobardes et al., 2006a). In operationalising the concept of highest educational qualification, the original variable [w5edqual] was used. Research by the ONS helped inform the researcher of an effective way to code these variables more simply and appropriately (ONS, 2011b). The responses of 'NVQ4/ NVQ5/ Degree or equiv', 'Higher ed. below degree' and 'No qualification' were kept as separate categories, whereas the more similar categories of 'NVQ3/GCE A Level equiv' and 'NVQ2/GCE O Level equiv' or 'NVQ1/CSE other grade' and 'Foreign/ other' were pooled together. One reason why the 'No qualification' category was kept separate, stems from evidence which suggests that older adults, particularly women who are from a generation whose social roles were focused upon providing care to children and elders, are likely to be of low or no educational status (see chapter 2) (Scholes et al., 2008). The final variable was named [Highest_Education] and had five categories. To help simplify, the category names were shortened appropriately (see Table 10). Other research using the ELSA has similarly adjusted the education variable using these 5 categories (Gjonça and Calderwood, 2003).

Table 10: Education category coding

Categories pooled	Simple category label
'NVQ4/ NVQ5/ Degree or equiv'	Degree level Education
'Higher ed below degree'	Higher Education
'Nvq3/gce a level equiv' and 'nvq2/gce o level equiv'	Intermediate Education
'NVQ1/CSE other grade' and 'Foreign/ other'	Low Education
'No qualification'	No Qualifications

Source: Author's own.

Pension Scheme Membership - The literature has pointed to the central importance of financial preparedness, specifically pension arrangements, in the decision to be economically active in later life (Banks and Tetlow, 2008;Eurostat, 2014;Vlachantoni et al., 2015) (see section 2.4.6). Membership

in a private pension scheme can offer individuals expanded opportunities and choice in terms of their work and savings (Banks and Tetlow, 2008;Vlachantoni et al., 2015). The ELSA includes detailed measures relating to individual and family finances, including extensive information concerning private pension income, which is key to the interests of the present study (Steptoe et al., 2012). Compared to a self-perceived status of retirement, pension scheme membership can provide a more objective measure of a person's economic activity status (Eurostat, 2014). The advantage of including this concept is that it helps identify preparedness for retirement through contributing towards one's pension, as well as actual receipt of a pension (Phillipson and Smith, 2006).

In operationalising the concept of pension scheme membership, the original variable 'Derived: Status of pension scheme membership' named [dcurpen], was used. This variable was derived by the ELSA team to collate respondents' pension scheme membership status in relation to up to 7 separate pension schemes.[20] The categories of this variable included: Refusal, Don't Know, Disputed existence of pension, Currently contributing, Receiving pension income, Retained rights, Transferred rights to another scheme, Received lump sum refund of contribution, and Has stopped receiving pension from this scheme.

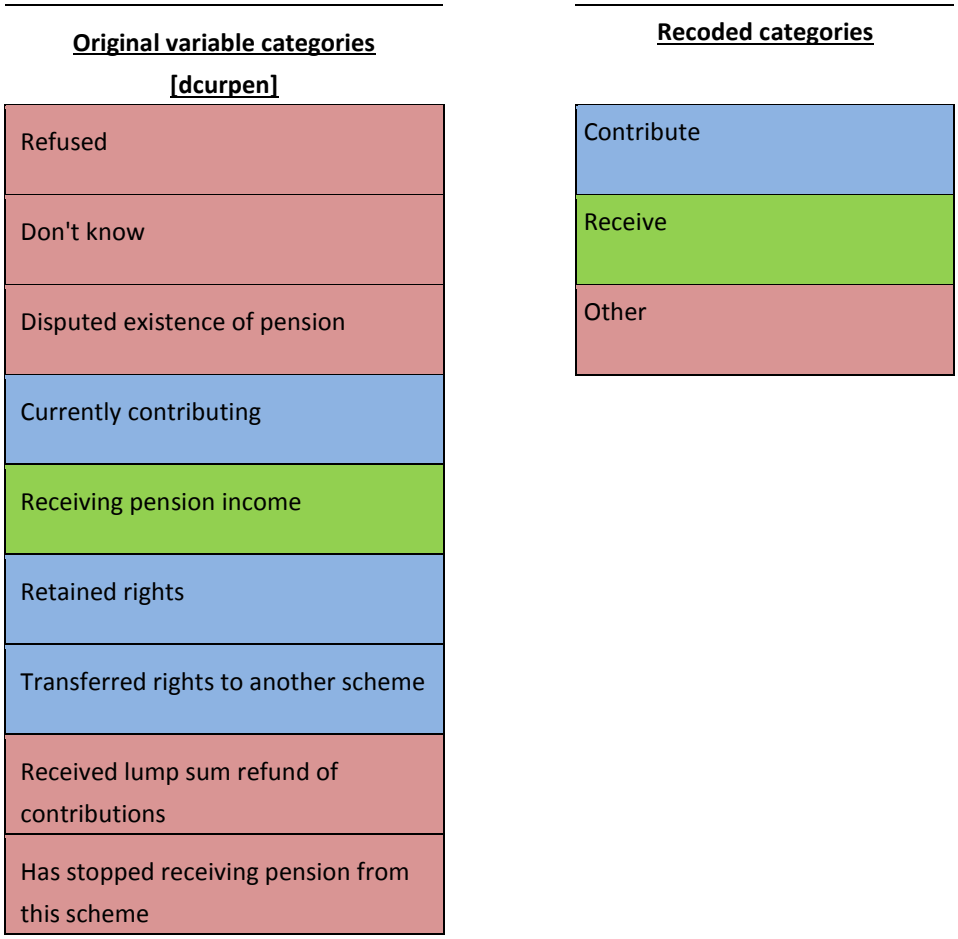
By restructuring the data, the researcher could identify both the number of pension schemes per respondent, and the relevant answers given. Investigations from running frequencies revealed that a large number of respondents in the main dataset had not featured in the separate pension-grid dataset due to filtering, resulting in these respondents not providing information on their pension scheme membership status. In order to avoid excluding these respondents entirely from the analysis, they were placed into a

[20] Due to the complexities of the questions relating to individuals' private pension schemes, the ELSA uses a separate pension-level dataset to contain these relevant responses. Through restructuring the data, the original variable was broken down into 7 separate variables ([dcurpen.1], [dcurpen.2], [dcurpen.3], [dcurpen.4], [dcurpen.5],[dcurpen.6], [dcurpen.7]). These variables were later merged with the main dataset and matched by unique individual serial number, to avoid duplicates and to help identify the multiple responses individuals had given. This enabled the researcher to then appropriately organise the data into a simpler singular variable, which collated responses into appropriate categories to resemble each respondent's pension scheme membership status.

category which was labelled as ‘Missing’, permitting the researcher to monitor their association with the outcome variable.

For some of the response categories, the counts were small (i.e. <30). In order to better resemble categories used by existing research, the researcher organised the categories into three new categories ‘Contribute’, ‘Receive’ and ‘Other’, illustrated by the colour coding in Figure 47.

Figure 47: Operationalisation to derive the Pension Scheme membership variable



Note: Colour coding refers to how categories of the variable were transformed into a pooled response category
The category of missing respondents was not included in this analysis and continued to be treated as a distinct category
Source: Author’s own.

Due to some respondents providing multiple answers, the researcher pooled responses into a variable called [new_pension_variable] which included 7 categories; accounting for the possible combinations of answers, illustrated in Table 11.

Table 11: Respondent Pension Scheme membership answer combinations possible (with corresponding unweighted N value and weighted percentage)

Category combinations [new_pension_variable]	Unweighted N	Weighted Percentage
Other only	162	*2.2%*
Contribute only	1,879	*26.0%*
Contribute & Other	102	*1.4%*
Receive only	3,015	*38.9%*
Receive & Other	134	*1.7%*
Receive & Contribute	466	*6.4%*
Receive, Contribute & Other	45	*.6%*
Missing	1,630	*22.9%*
Total	7,433	*100.0%*

Note: Receive only=responses only fall into receive category; Contribute only=responses only fall into contribute category; Other only=responses only fall into other category; Receive and Contribute=Responses fell into both receive and contribute category; Receive & Other=Responses fell into both receive and other category; Contribute & Other=Responses fell into both contribute and other category; Receive, Contribute & Other=Responses fell into all three category options of receive, contribute and other.

Note: Colour coding in this table relates to the next table, helping to show how the categories were pooled together to transform the final variable.

Source: Author's own.

The categories were then simplified into four final categories 'Receive', 'Contribute', 'Receive & Contribute' and 'Missing' to derive a variable named [FINAL_PENSION_VARIABLE].[21]

[21] Examining Table 12, the researcher identified that the categories of 'other only', 'receive & other', 'contribute & other' and 'receive, contribute & other' represented <2% of the sample. The 'other' category was relatively ambiguous therefore pooling the responses into the categories identified by Table 13, could increase the sample sizes of each category, without losing too much detail.

Table 12: Respondent Pension Scheme membership answer combinations merged (with corresponding unweighted N value and weighted percentage)

[FINAL_PENSION_VARIABLE] Categories	Unweighted N	*Weighted %*
Contribute	1,981	*27.4%*
Receive	3,149	*40.6%*
Receive & Contribute	673	*9.2%*
Missing	1,630	*22.9%*
Total (All respondents)	7,433	*100.0%*

Note: Colour coding in this and the previous table refer to how the categories were transformed and pooled together. Contribute= Contribute only, Contribute & Other; Receive=Receive only, Receive & Other ; Receive & Contribute=Other only, Receive & Contribute, Receive, Contribute & Other.

Source: Author's own.

3.5.1.1.2.4 Geographical characteristics

Geographical characteristics associated with economic outcomes were highlighted in the literature review (see section 2.5). It was evident that the area/ location in which a person lives, often has links to the specialisation of industry, employment rates and labour performance (Smeaton and McKay, 2003;Young et al., 2005;Uzzoli and Szilágyi, 2009). This sub-section will examine how the current study conceptualised and operationalised this theme of characteristic.

Region- According to the literature, employment rates and life expectancy estimates vary across England's regions (McKay and Middleton, 1998;ONS, 2012b-a). The concept of region was defined by this research as the geographical location where a person lives. It is apparent from examining the ELSA dataset that for reasons of confidentiality, variables which help to identify

the region in which a person lives, were limited.[22] The most appropriate variable identified was a string variable named [GOR] which could identify the Government Office Region (GOR) reported by respondents and which included 11 categories (identical to the categories which the ONS uses for producing regional statistics in England) (ONS, 2015b). For the purpose of the present study, responses of 'Not in England', 'Scotland' and 'Wales', were treated as missing, to enable the researcher to create a homogenous group of persons living within England. The remaining nine response options were then used to derive a categorical variable named [REG_GOR], which recoded the original variable into a more logical order. The researcher then had to recode this variable to use numbers as opposed to letters, resulting in the final variable of [REG_REGION], which was used by the analysis of this study.

3.5.1.1.2.5 Caring characteristics

The final theme of variables explored by this study focused on caring characteristics. It was apparent that caring has significant implications for economic outcomes in later life, as was emphasised by the findings of literature explored previously in section 2.6. This sub-section will discuss the conceptualisation and operationalisation of the caring variable used by this study.

Caring status- The concept of caring status in the context of this research relates to whether an individual reports having looked after another person within the past week. Caring is identified by the literature as having implications for when an individual chooses to retire and whether they will extend their working life. For example, the work of Milne et al. (2013) found that among persons in the UK, those who provide care are more likely to reduce their working hours or leave employment altogether. This was found to be particularly pronounced among co-residing carers, women, persons over the aged of 50 and those who provided care which was intensive (i.e. spend more time caring/ care which requires physical help) (Carmicheal et al., 2010). The literature on carers suggests that carers tend to be a diverse group (Parker and Lawton, 1994;ONS, 2013h-a). In particular the intensity of care often

[22] Furthermore, given the ELSA focuses on England, geographical information thus was limited to this context.

depends on who provides care (Navaie-Waliser et al., 2002). Caregiving of ill or disabled family members has been shown to be disproportionally provided by women, typically during midlife, a period of the lifespan also associated with labour market exits and individual physiological effects such as health declines (Pavalko and Artis, 1997). Interrupted careers are identified to restrict individuals' abilities to extend their working lives. For example, among women who are often the primary providers of informal care, interruptions in one's career often lead to reduced hours of employment or exits entirely (Young et al., 2005). Furthermore, caring has been associated with health problems and work-life balance challenges (Evandrou and Glaser, 2003;Legg et al., 2013). Noted health problems reported by caregivers can include stress and mortality (Richardson et al., 2013). Caregiving has been associated with marital status and household composition, whereby spouses or co-resident carers are often the primary providers of informal care (Carmicheal et al., 2010). These persons often also experience the greatest level of caregiver burden and thus may be disadvantaged in extending their working lives (Soldo and Myllyluoma, 1983;Chappell, 1991;Burton et al., 2003;Conde-Sala et al., 2010). Caregiving is also associated with financial vulnerability and given that caregivers disproportionally are from lower socio-economic backgrounds, such financial vulnerability can be intensified (Ho et al., 2005)[23].

The number of hours of care provided per week, concentrates on the temporal commitment which may be created as a result of being a carer. The more time a person allocates to providing care, tends to result in less time being assigned to work (Lilly et al., 2007). Older adults (50+ year-olds), particularly women caring for their spouses or those who live with a recipient of care (co-resident), are often more likely to take on longer hours and to report feeling carer burden (Carmicheal et al., 2010;Kim et al., 2011). For this reason, this variable comes of interest to this research as the target sample is focused upon individuals who are more likely to be involved with intensive care provision and

[23] The researcher did consider including variables that could provide details of the relationship the carer had to the recipient, living arrangements in terms of carer and care recipients and hours at work versus care. However, due to issues of multi-collinearity it was necessary for the researcher to be selective. Examining the number of hours providing care can provide a good indication of an individual's care commitment, with more hours being associated with a closer relationship to the care recipient, closer living arrangements (co-residing) and fewer hours at work. All of the care related variable considered had issues with missing values, however, the variable of hours of care provided the most holistic, informative and encompassing perspective of an individual's caring commitment, leading to its selection.

dedicating more of their time to this role. In order to derive a variable which could identify the number of hours a person provided care for, the original string variable [ercac] was used. Using category options used by the Census 2001, a new categorical variable for number of hours of care provided per week was derived containing the response options: '1-19 hours per week', '20-49 hours per week', and '50+ hours per week', this variable was called [hours_of_care_carersonly].

In order include a response option of 'non-carer', the original variable [ercaa] was used to identify individuals who had reported 'No' when asked if they provided care in the past week. Merging this information with the newly derived care variable led to a final variable, labelled as [REG_real_caregiving_hours] to be created. Investigations from running frequencies of this variable revealed that a large number of respondents' answers were lost due to questionnaire filters. There was a separate question, which asked about the number of hours of care an individuals had provided in the past month, (named [wpactca]) however, this variable only could indicate whether a respondent had 'mentioned' or 'not mentioned' having been involved in the activity of caring and could not indicate a definitive 'yes' or 'no'. Furthermore, cross-tabulations revealed answers continued to be lost due to filtering attached to these variables. Due to the similarities in the responses between the variables which look at the activity of care, it was decided to use the variable which included responses of 'yes' and 'no' as they provided a more reliable indication of a person reporting to provide care ([ercac] therefore was used). The researcher was unable to provide specific information on the respondents who had not be asked questions about their care provision timings as a consequence of filtering however, to avoid losing them entirely, they were placed into a category which was labelled as 'missing' allowing the researcher to monitor their association with the outcome variable.

3.5.2 Descriptive statistics

Descriptive statistics help identify the main features of a sample (Groves et al., 2009). This research used descriptive statistics to provide a description of the data in order to allow the researcher to familiarise with and check the coding

of derived variables and identify the patterns of respondents' answers (Agresti and Finlay, 2009).

3.5.2.1 Number of respondents

The first descriptive statistics examined looked at the outcome variable responses ('economically active' and 'economically inactive'), among the respondents. The researcher examined respondents together (i.e. all individuals aged between 50-74 years old), but also looked specifically at the responses of individuals who were above the SPA and below the SPA, respectively (refer to section 3.5.1.1.1.).

Table 13 examines the number of respondents who were male or female for each ELSA Wave (1-5) and outcome group. Table 13 demonstrates that the largest proportion of respondents were women. It is apparent that the numbers of respondents falling into the economically active group is considerably smaller compared to the number of respondents found in the economically inactive group. Among individuals who were above the SPA, regardless of economic outcome, a larger number of women were noted in the sample. Conversely, among individuals who were instead below the SPA a larger number of men represented the sample. Preliminary findings such as these can enhance our understanding of which individuals are more likely to be economically active in later life.

Table 13: Number of respondents by economic activity status and gender, (ELSA, Waves 1-5) (2002-2010)

	Above-SPA & Economically Active (N)		Above-SPA & Economically Inactive (N)		Below-SPA & Economically Active (N)		Below-SPA & Economically Inactive (N)		Total 50-74 years old (above, below, active, inactive) (N)	
WAVE 1	427		3,595		3,409		1,596		9,027	
	121	306	1,341	2,254	1,910	1,499	796	800	4,168	4,859
WAVE 2	417		2,998		2,441		1,116		6,972	
	123	294	1,096	1,902	1,353	1,088	588	528	3,160	3,812
WAVE 3	427		2,651		2,967		1,105		7,150	
	110	317	966	1,685	1,637	1,330	571	534	3,284	3,866
WAVE 4	670		3,390		3,107		1,168		8,335	
	184	486	1,196	2,194	1,756	1,351	633	535	3,769	4,566
WAVE 5	689		3,339		2,379		997		7,404	
	206	483	1,169	2,170	1,340	1,039	597	400	3,312	4,092

The colour blue refers to male respondent counts; pink refers to female respondent counts; white refers to total for that wave. The black cells show which waves were excluded from the analysis used in this thesis.

Note: The 29 missing respondents for wave 5 was a consequence of cross-tabulating with economic-activity and age, as some respondents had not responded to the questions on age/ economic-activity and consequentially could not be organised into an appropriate group, instead becoming missing

N=absolute sample number unweighted.

Source: Author's own analysis, ELSA 2002-2010.

3.5.3 Bivariate analysis

Descriptive statistics helped the researcher to become familiar with the data; however, more advanced techniques were required to address the research questions of this study in greater detail. Bivariate analysis can help to examine the association between two variables, often in the form of an outcome variable and an explanatory variable, however it can also explore the association between independent variables (Bryman, 2008;Agresti and Finlay, 2009, p55). The researcher employed three individual bivariate techniques

which permitted results to be verified and for the associations between different variables to be more holistically understood. All of the research questions required the use of bivariate analysis. The research questions were:

RQ1:	a) Among men and women aged over the SPA (defined as 60 for women and 65 for men) in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are over the SPA and economically inactive in 2010?
RQ2:	a) Among men and women aged between 50 years and the SPA in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are below the SPA and economically inactive in 2010?
RQ3:	Using the results of RQ1 and RQ2, what are the most pronounced differences between persons who are economically active or inactive below and above the SPA?

3.5.3.1 Correlation matrix: The relationship between explanatory and outcome variables

The first bivariate technique employed by this research involved correlation matrices. Correlation matrices allowed the researcher to examine the strength of the relationships between the explanatory and outcome variables of this research, through calculating their correlation coefficients (Field, 2009). Correlation coefficients lie between the values of '+/-1'. A value of '-1' indicates a perfect negative relationship, which is where when the value of one variable increases the other tends to decrease; while '+1' indicates a perfect positive relationship, which is when as the value of one variable increases, the other variable also tends to increase (Agresti and Finlay, 2009). When variables are perfectly correlated, knowing the value of one of the variables allows one to predict with confidence the other variable value. A value of '0' suggests a lack of correlation (Field, 2009). Strong correlations, both negative and positive, can provide the researcher with more confidence about the influence of explanatory variables included within models and can also help the researcher in identifying variables which could be excluded or variables which

could be replaced with alternatives that may shed more light upon the topic of working in later life (Field, 2009). Despite correlations being capable of indicating whether variables are related, they cannot establish cause and effect (Bryman, 2008;Porta and Keating, 2010). Correlations can compare the associations for variables whose units are different, and given the diversity of the variables in this research, it is clear this method was particularly useful (Agresti and Finlay, 2009). Literature and theory discussed within chapter 2, and variable availability within the datasets, informed which variables were included within the matrix. This technique lends itself to the "ENTER" method, a method which is adopted throughout the analysis whereby the computer can be instructed by the researcher according to their preference, to enter variables in a specified order or in blocks of variables (Brace, 2006) (see section 3.5.4).[24]

Examining the wording of the research questions, it was apparent that there were two groups of interest: individuals who were above the SPA, and individuals who were below the SPA. An advantage of using the correlation matrices was that the researcher could specify the individuals included in the analysis, focusing specifically on the group of interest. The explanatory variables of this study focused on *demographic, health, socio-economic, geographical and caring characteristics*. While the outcome variable related to the individual's economic activity outcome.

Table 14 provides the correlation matrix for the binary outcome variable [DV_economicactivity] among individuals who were above the SPA. Table 15: does the same; however concentrates on individuals who were below the SPA. The reference category (that being the group of individuals who are compared to all other respondents in the outcome) are assigned the value "1". This group concentrates on respondents who are 'economically active'. The respondents who are assigned the value of "0" include those who report to be 'economically inactive' and act as a comparison to the group of interest. The benefit from running correlation matrices is that they allow the researcher to gain a preliminary understanding of associations between the explanatory and

[24] For the purpose of the correlation matrices computed, derived variables were used. Please also note that for the purpose of these matrices the researcher did not perform separate analysis for men and women.

outcome variables of this research. Such findings can also be linked back to previous literature to help explain variable influences further. It should be noted that given the variables used within this matrix are primarily categorical, the researcher was restricted in the conclusions which could be drawn. The researcher could however identify whether variables were related. More advanced analysis was required to disentangle the relationships between the variable categories which would help unravel a clearer understanding of the associations between the variables (Chapters 0 and 5 will report on this).

Beginning with the matrix which related to respondents who were above the SPA, Table 14 demonstrates that the strongest correlations noted were between age (-212**), SRGH (-.138**), and highest education (-.101**). Evidently, the strength and directions of the correlations differed across the variable sets. In terms of the negative correlations, age was the strongest (-.212**). Among the health variables, SRGH, LLSI and CASP-19 all showed strong negative correlations with the outcome variable (-.138**), (-.082**) and (-.092**). Among the socio-economic variables, the strongest positive correlation noted was with housing tenure (.042**), while the strongest negative correlation was with highest education (-.101**).

Turning to look at the results of the matrix which focused on respondents who were below the SPA, Table 15: identifies that the independent variables shown to have the strongest correlations with the outcome variable included SRGH (-.342**), pension scheme membership (-.214**) and car access (-.165**). Among the demographic variables, the strongest negative correlation was with age (-.101**). Among the health variables, SRGH, LLSI and CASP-19 all showed strong negative correlations with the outcome variable (-.342**, -.115**, -.111**). The socio-economic variables also had only negative correlations, however pension scheme membership showed the strongest correlation (-.214**). The geographical variable of region demonstrated a positive correlation with the outcome variable (.049**). This was also true for the variable of caring status (.111**).

Evidently, the two groups of respondents both demonstrated age, gender, marital status, SRGH, LLSI, CASP-19, highest education, car access, occupational social class and pension scheme membership to be negatively

correlated with economic activity, while the variables of ethnicity, region and caring status showed positive correlations with economic activity. The variable of housing tenure illustrated a positive correlation among respondents who were above the SPA, while it showed a negative correlation among individuals who were below the SPA. Notably, the variables of marital status, ethnicity, occupational social class, region and caring status were not statistically significant among individuals who were above the SPA, while among individuals who were below the SPA, the variables of gender, ethnicity and housing tenure were not statistically significant. These findings may offer some evidence to demonstrate that the economic outcomes of respondents who are above/ below the SPA are influenced by different variables.

Table 14: Correlation matrix of explanatory and outcome variables, among individuals who are above the SPA (men and women) (ELSA, Wave 5) (2010)

	Economic Activity	Age	Gender	Marital Status	Ethnicity	SRGH	LLSI	CASP-19	Housing Tenure	Highest Education	Car Access	Occupational Social Class	Pension Scheme Membership	Region	Caring status
Economic Activity	1														
Age	-.212**	1													
Gender	-.041**	.196**	1												
Marital Status	-.018	.101**	-.137**	1											
Ethnicity	.005	-.025	.027	.018	1										
SRGH	-.138**	.080**	.006	.094**	.061**	1									
LLSI	-.082**	.039*	.034*	.054**	-.010	.141**	1								
CASP-19	-.092**	.066**	.010	.124**	.041*	.335**	.131**	1							
Housing Tenure	.042**	-.011	-.014	.152**	.064**	.180**	.037*	.153**	1						
Highest Education	-.101**	.110**	-.103**	.102**	-.028	.195**	.027	.170**	.176**	1					
Car Access	-.065**	.090**	-.058**	.272**	.095**	.178**	.042**	.146**	.267**	.184**	1				
Occupational Social Class	-.014	.034*	-.056**	.062**	-.004	.151**	.001	.148**	.194**	.512**	.170**	1			
Pension Scheme Membership	-.056**	-.001	-.262**	-.024	.036*	.151**	.029	.112**	.209**	.294**	.144**	.280**	1		
Region	.007	.023	.004	-.039*	-.127**	-.027	-.013	-.044**	-.087**	-.034*	-.123**	-.043**	-.042**	1	
Caring status	.027	.055**	.077**	.050**	.014	.084**	-.004	.002	.030	.033*	.060**	.001	-.020	.008	1

Significance levels: *p<0.05 (2-tailed), **p<0.001 (2-tailed), unweighted.

Note: The variable of age used in this analysis= [REG_ABOVE_AGEGROUPS]

Note: red cells=no statistical significance with the outcome variable [DVEconomicactivity]

Source: Author's own analysis, ELSA 2010.

Table 15: Correlation matrix of explanatory and outcome variables, among individuals who are below the SPA (men and women) (ELSA, Wave 5) (2010)

	Economic Activity	Age	Gender	Marital Status	Ethnicity	SRGH	LLSI	CASP-19	Housing Tenure	Highest Education	Car Access	Occupational Social Class	Pension Membership	Region	Caring status
Economic Activity	1														
Age	-.101**	1													
Gender	-.033	.231**	1												
Marital Status	-.049**	.062**	-.063**	1											
Ethnicity	.007	-.036*	-.032	-.006	1										
SRGH	-.342**	.007	.007	.135**	.037*	1									
LLSI	-.115**	.038*	.036*	.019	-.038*	.228**	1								
CASP-19	-.111**	.004	-.007	.114**	.055**	.382**	.128**	1							
Housing Tenure	-.010	-.033	-.030	.208**	.011	.246**	.071**	.165**	1						
Highest Education	-.149**	-.009	-.080**	.068**	-.003	.249**	.084**	.188**	.192**	1					
Car Access	-.165**	-.018	-.043*	.224**	.015	.217**	.083**	.110**	.275**	.186**	1				
Occupational Social Class	-.093**	.005	-.013	.072**	.030	.212**	.082**	.199**	.149**	.507**	.166**	1			
Pension Scheme Membership	-.214**	-.048**	-.207**	.106**	.111**	.259**	.042*	.155**	.240**	.297**	.255**	.247**	1		
Region	.049**	.005	.007	-.015	-.119**	-.064**	-.011	-.032	-.033	-.013	-.086**	-.022	-.111**	1	
Caring status	.111**	.021	.138**	.055**	.040*	.002	.010	-.032	.015	.003	.023	-.008	-.035*	-.021	1

Significance levels: *p<0.05 (2-tailed), **p<0.001 (2-tailed), unweighted.
Note: red cells=no statistical significance with the outcome variable [DVEconomicactivity]
The variable of age used in this analysis= [REG_BELOW_AGEGROUPS]

Source: Author's own analysis, ELSA 2010.

The findings of Table 14 and Table 15: reflect many of the findings already discussed in reference to existing literature. For example, gender and marital status showed a significant negative correlation with each other (-.137**, -.063**). Previous literature has found gender and marital status differences among those who are economically active in later life (Szinovacz et al., 2001) thus the findings of the correlation matrices lend support to such research. A final comment on the correlation matrix findings, relates to SRGH's positive correlation with marital status (.094**, 135**) and housing tenure (.180**, .246**), which is in line with Pienta et al. (2000) who found evidence to suggest that marriage and financial assets such as home-ownership are associated with positive health outcomes (Pienta et al., 2000;Pienta and Hayward, 2002).

Examining Table 14 and Table 15: it is interesting to compare their findings and to relate them back to the literature. The first striking finding relates to the health variables, where the correlations are consistently suggested to be stronger among respondents who are below the SPA. This finding provides support to the research of Macnicol (2015) who identified younger workers to be more likely to leave the labour market as a result of ill-health compared to older adults. A second interesting observation relates to the effect of gender. Gender is noted to have a significant correlation with the outcome variable among individuals who are above the SPA (-.041**) however, the correlation noted between these two variables among individuals who are below the SPA, is weaker and not statistically significant (-.033).

A final interesting aspect of these results, relates to the correlation between pension scheme membership and economic activity. Pension scheme membership is statistically significant across both matrices, however the correlation with economic activity among individuals who are above the SPA (-.056**), is considerably weaker than that noted for the matrix focused on respondents who are below the SPA (-.214**). Literature has noted that individuals who are below the SPA are more likely to contribute to a pension, perhaps explaining the stronger correlation noted by these individuals (Eurostat, 2014). This strong correlation also highlights the presence of a relationship between pension scheme membership and economic activity. Literature has found that individuals without a private pension are less likely to

be in work in their early fifties compared to individuals with a private pension (Blundell et al., 2002). However, beyond the age of 50, individuals with private pensions tend to leave the labour market more rapidly than those without private pensions, which could be a consequence of private pension scheme members being better prepared and more financially secure for retirement (Banks et al., 2002). Such private pension schemes however rely on contributions, usually made while a person is in paid work (Vlachantoni et al., 2015). Consequently, the stronger association with pension scheme membership reflected by the correlation matrix of individuals who are below the SPA may reflect that this group is younger and more likely to be economically active (Johnson and Zaidi, 2007;Dubois and Anderson, 2012). Due to the nature of this analysis, details from a categorical level were not possible, however the significant relationship which was noted demonstrates an association between these two variables among individuals who are below the SPA, providing support for more advanced analysis to build upon.

The findings of these correlation matrices provide a preliminary understanding of the associations and relationships between the independent variables and the outcome variable of economic activity among individuals who are above/ below the SPA. Chapters 0 and 5 will elaborate further on these findings and their implications, using more detailed analysis.

3.5.3.2 Cross-tabulations

A second bivariate technique used by this research involved cross-tabulations. Cross-tabulations tabulate the results of one variable against another, to show the statistical association and relationship between variables (Bryman and Cramer, 1990;Diamond and Jefferies, 2001). Using this joint frequency distribution, the chi-square statistic can be used to determine whether the variables are statistically independent from each other, or whether they are associated (see section 3.5.3.3) (Michael, 2012). Appendix 8 provides a detailed list of the cross-tabulations that were analysed by this research. The literature review helped to guide the researcher in deciding which variables to examine together/ cross-tabulate, ensuring that the research questions of this thesis could be most effectively answered.

3.5.3.3 Pearson chi-square test statistic

The Pearson chi-square test, referred to from now on as the chi-square test, denoted by the symbol X^2, is a nonparametric test of independence between two variables whose values are numerical (Diamond and Jefferies, 2001). The chi-square test compares observed and expected frequencies in a contingency table by summing the squares of the discrepancies to assess whether they differ. The null and alternative hypotheses are as follows:

H_o=There is **no association** between the variables/ the variables are independent

H_A=There **is an association** between the two variables/ the variables are dependent

The observed values are those found by the research, whereas expected frequencies are the frequencies one may expect if left to chance and what would be anticipated under the null hypothesis of no association. If the expected frequencies differ to what is expected from the chance of these individuals falling into these groups, we can presume that there is an effect of the other variable. To calculate expected frequencies the following formula can be used:

Expected frequencies= (observed row total x observed column total)/ observed overall total

Source: (Diamond and Jeffries, 2001; 186)

Expected value cell counts in all categories must be greater than 5 if this statistic is to be used. The chi-square test statistic can be calculated using the following equation:

$$X^2 = \Sigma \frac{(\text{Observed frequencies} - \text{Expected frequencies})^2}{\text{Expected frequencies}} = \Sigma \frac{(Fo - Fe)^2}{Fe}$$

In order to assess the significance of the chi-square test, the value is compared to the critical value which can be located within the chi-square distribution table based on the set level of significance and the degrees of freedom (df) (Sweet and Grace-Martin, 2010). See as follows how to calculate the df:

Df = (number of columns in table−1) x (number of rows in table−1)

Source: (Diamond and Jefferies, 2001:pg 186)

If the test statistic is greater than the critical value, the null hypothesis can be rejected (Diamond and Jeffries, 2001: pg. 186-187). A large value for chi-square suggests that variables are associated/ dependent, however the strength of this relationship cannot be determined (Bryman and Cramer, 1990;Agresti and Finlay, 2009). The chi-square test was conducted alongside all cross-tabulations of this research, allowing the researcher to test the significance of the associations (SPSS computes a significance value, helping to make this distinction easier) (see Appendix 8 for details of the chi-square tests and cross-tabulations used by this study).

3.5.4 Multivariate analysis

Although bivariate results could explore the research questions to some degree, for more detailed analysis and exploration, multivariate techniques were required. For this reason, all three of the research questions used multivariate techniques. The research questions of this thesis are as follows:

RQ1:	a) Among men and women aged over the SPA (defined as 60 for women and 65 for men) in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are over the SPA and economically inactive in 2010?
RQ2:	a) Among men and women aged between 50 years and the SPA in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are below the SPA and economically inactive in 2010?
RQ3:	Using the results of RQ1 and RQ2, what are the most pronounced differences between persons who are economically active or inactive below and above the SPA?

In order to explore these research questions, multivariate techniques were used, which allow for three or more variables to be analysed at the same time (outcome and/ or explanatory) (Cramer and Howitt, 2004). Research questions 1 and 2 refer to the 'factors', those being the collective combination of explanatory variables, which can help to explain the outcome variable relating to individuals' economic activity. Chapter 2 demonstrated that a plethora of

characteristics have been associated with economic activity in later life, whereby there have often been overlaps suggested in relation to their influences. The advantage of using multivariate analysis is that it allows the researcher to examine the combined influence of variables in relation to an outcome, providing the present research with the opportunity to build upon the findings of pre-existing literature and to draw links between variables and their influences upon economic outcomes (see chapter 6). The complexity of associations found by more simplistic bivariate analysis can be examined in more detail through using multivariate methods. Multivariate methods can shed further light upon the strength, direction and significance of variable associations.

3.5.4.1 Binary logistic regression analysis

Binary logistic regressions, also known as logits, were most appropriate for this research due to the outcome variable being dichotomous and categorical ('in group' or 'not in group'). Categorical outcome variables violate the assumption of linearity and it is for this reason linear regression was inappropriate for this research (Field, 2009). Logistic regressions avoid the issues caused by lack of linearity from having a categorical outcome variable, through the means of logarithmic transformation. Logarithmic transformation converts the simpler linear regression equation to allow a non-linear relationship to be expressed in a linear way. The logit model formula is denoted as follows:

$$\text{Log}\left(\frac{\pi}{1-\pi}\right) = \text{logit}\,(\pi) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + \beta_k X_k$$

The left hand side expression is the logit of π, where π is the probability of "success" of the outcome variable (probability of individual being 'in group'). Through using logit, the percentage of variance in the outcome variable ('β_0') explained by the explanatory variables ('X_1', 'X_2', 'X_k') (where 'β_1', 'β_2', 'β_k' represent the coefficients attached to these predictors) can be determined, helping the researcher in identifying the impact of the explanatory variables upon the resulting outcome. The impact of the explanatory variables included within the regression model can be analysed through examining the strength

and significance of the association a variable has, and comparing it with the probability of the outcome variable, a benefit of this method which particularly appealed to the researcher (Cramer and Howitt, 2004;Bryman and Cramer, 2005;Jaeger, 2008).

In estimating the parameters of the statistical model created through a binary logistic regression, the researcher used the method of maximum likelihood estimation (MLE). This technique estimates population characteristics from the sample by choosing the values of the parameters which will maximise the probability of getting that particular sample if actually obtained from the population (Cook et al., 2001;Cramer and Howitt, 2004). To achieve this, repeated estimation is used until the log-likelihood fails to change significantly (see overleaf for discussion on the -2LLR). In order to interpret the model, odds ratios are used, where one category from each variable is treated as a reference group. Confidence intervals of odds ratios can shed further light upon the relationship and significance of each variable's categories, while the width of confidence intervals can imply the precision of the odds ratio value and the level of confidence can imply the significance of a result (Howitt and Cramer, 2005).

For the purpose of this research, the binary logistic models focused on persons who were economically active and sought to better understand how these respondents' were similar or different to those who are instead economically inactive. In order to narrow the focus of analysis upon these specific individuals, the researcher used the binary outcome variable [DV_economicactivity], whose categories were assigned the values "1= economically active" and "0= economically inactive" (see section 3.5.1.1.1-Economic outcome-) (as illustrated in Table 16).

Table 16: Binary logistic outcome variable

Outcome Variable	Outcome Variable Name	Values
Economic Activity	[DV_economicactivity]	0= economically inactive
		1= economically active

Source: Author's own.

The researcher used the "ENTER" method in deciding which explanatory variables to include within the logistic regression models. This method allowed the findings of the literature review and conceptual framework relating to this research to help guide the selection of variables for the analysis (Brace, 2006). The "ENTER" method enables variables to be added or removed one at a time, combining forward-selection and backward-elimination techniques, letting the researcher create a model which fits the data best (Abraham and Ledolter, 2006). This method also allows the researcher to make the decision about which variables are to be included first, second, third, etc., providing the researcher with the ability to use their own knowledge to create an appropriate model. The correlation matrices (discussed earlier in this chapter by section 3.5.3.1) have provided some insight into the variables which appear to have a relationship with specific outcomes (see Table 14 & Table 15:). The statistical significance is indicated through probability levels which are commonly referred to as p-values. P-values can imply the plausibility of findings allowing a researcher to decide whether to reject the null hypothesis (no correlation/ difference) in favour of the alternative hypothesis (correlation/ difference apparent) (Field, 2009).[25] A p-value of $p<0.01$ is the level at which the null hypothesis is rejected 1 or fewer times out of 100, whereby a difference or relationship is likely to only have occurred by chance 1 or fewer times in 100. The more stringent p-value of $p<0.001$ works on this same premise but

[25] Please note that the p-values are indicated using asterisks (*) – see below the analysis tables for their appropriate definitions.

instead a difference or relationship is likely to only have occurred by chance 1 or fewer times in 1000 (Cramer and Howitt, 2004).[26] A model that fits well is one that can predict the outcome variable most accurately. In order to guide the "ENTER" method and to examine the goodness of fit of the model it creates, the likelihood ratio (LR) test is particularly useful and can compare the fit of the models. By taking the logarithm of the likelihood ratio test the -2 Log-Likelihood Ratio Statistic is created, denoted as -2LLR (seen within Table 17). This statistic informs the researcher of how well the model is able to discriminate between the two groups defined by the outcome variable and how well the model can predict the variation of predictors for the outcome variable (Bewick et al., 2005). The -2LLR measures the degree of discrepancy between observed and fitted values by multiplying the log-likelihood with '-2' (customary, since the likelihood is a small number less than 1) (Agresti and Finlay, 2009) (sometimes referred to as -2LL). The -2LL has a distribution similar to chi-square, making it possible to compare values against those we would expect to get from chance alone (Field, 2009). A model which fits the data precisely has a value of '0' and a likelihood of '1'. The -2LL does not have an upper boundary, which can make it difficult to draw much meaning from the score. Instead, often researchers will look to see whether adding additional variables into the model leads to a significant reduction in the -2LL (which would indicate that the model precision has improved), helping to determine whether more simple or more complex models are most appropriate (ESRC, 2011).

A second method used to determine the fit of the model, relates to the proportion of unaccounted variance in the dependent variable predictable from the independent variables (Field, 2009). If by adding variables into the model, the proportion of variation accounted for (also known as pseudo R-square values) increases, the model can be regarded to have improved in fit (Bewick et al., 2005;Agresti and Finlay, 2009). The researcher favoured the Nagelkerke

[26] An intermediate p-value of $p<0.005$ is also used to measure significance, this level rejects the null hypothesis 5 or fewer times out of 1000, whereby the difference or relationship is said to be likely to have occurred by chance 5 or fewer times in 1000.

R-Square (R^2) over the Cox and Snell R^2, due to its properties being more similar to the R^2 statistic used in ordinary regressions (Cox and Snell, 1989;Nagelkerke, 1991). The Nagelkerke R^2 is an adjusted version of the Cox and Snell R^2, whereby the scale of R^2 statistic has been extended to cover the full range from 0 to 1. By extending the range, the model has the capacity to explain the maximum amount of variation; further demonstrating why this statistic was the preferred option (Cox and Snell, 1989;Nagelkerke, 1991) (this statistic is identified in Table 17).

Table 17 demonstrates the selection of models used by the binary logistic regressions of this research, which the researcher used to examine the factors associated with being economically active. The models are built using the "ENTER" method. The sequence of entry selected by the researcher was informed by the literature and theory findings surrounding the topic of extending working lives. The work of Phillipson and Smith (2006) and their review of the research literature which relates to extensions in the working life, is a particularly useful document in helping justify the order of variable entry for the regressions used by this research. The author introduces variables in their sets (demographic, health, socio-economic, geographical and caring). Table 17 illustrates in more detail the basic sequence of variable entry used by this research.

Table 17: Modelling strategy

Model 1	Model 2	Model 3	Model 4	Model 5
Constant Demographic Variables Age Gender Marital status Ethnicity	Constant Demographic Variables Age Gender Marital status Ethnicity Health Variables SRGH LLSI CASP-19	Constant Demographic Variables Age Gender Marital status Ethnicity Health Variables SRGH LLSI CASP-19 Socio-Economic Variables Housing tenure Occupational social class Highest education Car access Pension Scheme Membership	Constant Demographic Variables Age Gender Marital status Ethnicity Health Variables SRGH LLSI CASP-19 Socio-Economic Variables Housing tenure Occupational social class Highest education Car access Pension Scheme Membership Geographical variables Region	Constant Demographic Variables Age Gender Marital status Ethnicity Health Variables SRGH LLSI CASP-19 Socio-Economic Variables Housing tenure Occupational social class Highest education Car access Pension Scheme Membership Geographical Variables Region Caregiving Variables Caring status
-2LLR	Change in LLR	Change in LLR	Change in LLR	Change in LLR
% Change -2LLR				
Nagelkerke R-Square (R^2)				

Constant= [DV_economicactivity]
Note: Constant relates to the outcome variable of the binary regression: [DV_economicactivity]
Additionally, the researcher used the select if function when models were required to reflect women or men independently, and / or persons who were above or below-the-SPA.
Variables in red were those which varied across the regressions, whereas those in blue remained constant

KEY: Age & Gender-whether included and the variable used for each regression

Regression 1 (Refer to Table 17)	• *REG_all50plus_age* • *REG_Gender*
Regression 2 (Refer to Table 18)	• *REG_all50plus_men_age*
Regression 3 (Refer to Table 19)	• *REG_all50plus_women_age*
Regression 4 (Refer to Table 20)	• *ABOVE_AGEGROUPS* • *REG_Gender*
Regression 5 (Refer to Table 21)	• *REG_Men_abovespa_Age*
Regression 6 (Refer to Table 22)	• *REG_Women_abovespa_Age*
Regression 7 (Refer to Table 23)	• *BELOW_AGEGROUPS* • *REG_Gender*
Regression 8 (Refer to Table 24)	• *REG_Men_belowspa_Age*
Regression 9 (Refer to Table 25)	• *REG_Women_belowspa_Age*

Source: Author's own.

For the purpose of this research, nine binary logistic regressions were used. Among these, three distinct groups were examined: 1) individuals aged 50-74 years old, 2) individuals who are above the SPA and 3) individuals who are below the SPA. Within these three sets, the sample could be broken down by gender (men only, women only samples) or with gender as an independent variable (thus the sample of these regressions included men and women).

Due to the interests of the study, the variables relating to age and gender, which were included, varied accordingly (see red text in Table 17). The accompanying key of Table 17 provides details of the specific variables, which featured in place of these variables for each of the 9 regressions.

For the purposes of the multivariate analysis, the researcher made some slight alterations to the variables. The variables were recoded so that the researcher's choice of reference category was assigned the value of '1'. Under the command of SPSS the researcher allocated the "first category" of each variable to be the reference. In light of the researcher's knowledge derived from previous literature, the first category was selected on the basis that this category would be more likely to be reported by persons who are economically active in later life. Appendix 7 includes the details of the recoding, which was

used in reassigning categories for the purposes of the multivariate analysis.[27] Variables used in the regression were easily identifiable as each were assigned a name with a prefix of 'REG'.[28]

3.6 Weighting

Weighting is a technique which enables data analysis results to be adjusted, allowing problems associated with sample members being under-represented, or bias caused by non-response, to be overcome to produce a sample that is as representative as possible of the population (Taylor et al., 2007). As the HSE used an equal probability sample design and the ELSA's sample selected all eligible adults from the HSE, the need for weights to account for selection probabilities was eliminated (Institute of Fiscal Studies, 2002). However, non-response at HSE or at the ELSA Wave 1, and refusals for re-interview post-HSE, contribute towards making the ELSA respondent sample potentially unrepresentative of the population (Kalton and Flores-Cervantes, 1988). The weighting for the ELSA was informed by the analysis of the HSE non-response, and calibration weighting was used to ensure that the weighted sample matched the population of interest, defined as older adults. The researcher recognises the original sample of the ELSA dataset which the weighting variable was designed to be used for, is for individuals who are 50+ year-olds, living in England in private households in 2001 (as represented by the Census 2001). The present research has adjusted the sample to examine individuals who are above and below the SPA, spanning people aged 50-74 years old. However, the weights of the ELSA allow researchers to re-proportion the sample to match their preferences without such scaling altering the representation of age/ gender groups.

The ELSA's concentration on private households can been criticised for its limited scope for generalisability with concerns surrounding in particular the

[27] Only Wave 5 was used for the multivariate purposes. Notably, the inclusion of age and/ or gender variables was dependent on the regression being computed-refer to key of Table 17

[28] The variables were named as: [REG_SPA], [REG_all50plus_age], [REG_all50plus_men_age], [REG_all50plus_women_age], [REG_ABOVE_AGEGROUPS], [REG_Men_abovespa_Age], [REG_Women_abovespa_Age], [REG_BELOW_AGEGROUPS],[REG_Men_belowspa_Age], [REG_Women_belowspa_Age], [REG_Gender], [REG_MaritalStatus], [REG_ethnicity], [REG_SRGH], [REG_LLSI], [REG_CASP19], [REG_HousingTenure], [REG_HighestEd], [REG_CarAccess],[REG_FINAL_PENSION_VARIABLE] [REG_NSSEC], [REG_REGION], [REG_real_caregiving_hours]).

non-response rates of individuals who are frail, have a longstanding illness or who live in institutions such as residential and nursing homes (Bryman, 2008). Furthermore, the under-coverage of immigrants arriving into England within the first Wave of interviewing, and failure to re-interview some individuals, highlights the benefits that weighting techniques can elicit when interpreting the results, as it can help prevent the data from being misrepresented (Groves et al., 2009). To weight the data the variable [w5xwgt] was used. This was a cross-sectional weight thus it suited the preferences of the study design (see section 3.2).

Notably, the researcher was able to examine unweighted, absolute numbers of respondents' when analysing their data, providing the opportunity to analyse the results specific to the sample, whilst also being able to compare to weighted findings.

3.7 Chapter summary

This research aims to identify the individual characteristics, which determine whether an individual (male/ female) who is above/ below the SPA is economically active and to compare how these individual characteristics vary among respondents who instead are economically inactive. Using the ELSA Waves 5, a cross-sectional design was employed. Descriptive, bivariate and multivariate analysis techniques were central to the analysis of this research, allowing the examination of associations between respondents' demographic, health, socio-economic, geographical and caring characteristics with outcomes of economic activity.

The methodology used by this research was selected on the basis of its appropriateness in relation to answering the research questions. The strengths and weaknesses of research methods were assessed before this research was conducted, ensuring the most appropriate methods were chosen. Details of these strengths and weaknesses are presented throughout this chapter (Bryman, 2008;Agresti and Finlay, 2009). In particular, information on the study design, dataset, sample profile, data analysis plan and weighting techniques have been discussed. Using the ELSA dataset to examine the topic of economic activity in later life is advantageous for a number of reasons.

Firstly, being cross-sectional, the dataset's aggregate patterns can be examined every two years allowing researchers to monitor changes in trends across time. The ELSA's sample of respondents is also large and concentrates on the target population of interest to this research. Finally, the ELSA provides a wealth of variables relating to the topic of extending working lives, emphasising its relevance in answering the research questions of this study.

The research questions of this thesis have guided dataset manipulations for deriving appropriate outcome and explanatory variables (identified in Table 7). Links to previous literature have also been demonstrated to justify the inclusion of these variables by the present research (see chapter 2). The concepts of interest to this research have been defined and their operationalisations' through variable manipulations have been discussed. Specifically, research based on ELSA datasets or which have used a target population similar to that of the present study, have been useful in informing the methods and manipulations for data analysis.

Preliminary findings on the variable associations have been derived from the running of two correlation matrices, which have helped to enhance the researcher's understanding of characteristics associated with economic activity in later life. Significance levels determined through the use of chi-square statistics and p-values in the context of bivariate analysis, and the -2LLR statistic used within the multivariate analyses will enable the researcher to identify variables of particular relevance and their importance in the context of the research questions of this study.

Chapter 0 presents the bivariate results of this research. In particular demographic, health, socio-economic, geographical and caring-related variables and their association with economic activity outcomes among persons who are above/ below the SPA (i.e. between 50-74 years old), will be explored. This will enable the researcher to identify individual characteristics associated with economic activity in later life.

4. Chapter 4: Bivariate Results

4.1 Introduction

The literature review has helped to identify which common characteristics are associated with economic outcomes among persons who are above/ below the SPA through its extensive exploration of research on the topic of extending the working life (see chapter 2). This has been useful in guiding much of the analysis found within this chapter and that of the upcoming chapter 5 (Multivariate Results).

Already, chapter 3 has presented descriptive analytical findings relating to the sample of the present research. Among the statistics examined, information upon the sample sizes of core and non-core members (see Table 5), and the outcome variables' categories (absolute numbers, weighted and unweighted percentages) (see Table 13) have been discussed for Waves 1-5 of the ELSA (2002-2010). Preliminarily insights into gender differences, adding to our understanding of the factors that are associated with economic outcomes among persons who are aged below and above the SPA have also been explored (see Table 13). For the purpose of this current chapter, Wave 5 of the ELSA is the focus. Primarily bivariate analysis facilitated by techniques such as cross-tabulations and chi-square tests shall be used to formulate a foundation towards answering all of the research questions of the present thesis[29]. This type of analysis has the ability to help the researcher to identify which factors are associated with which economic outcomes and to understand how these characteristics compare between individuals (i.e. above/ below the SPA, economically active/ inactive, male/ female) (details of the research questions can be found in section 1.5).

The present chapter is structured accordingly. Using the same ordering as chapter 2, the analysis begins by exploring the associations between demographic variables and economic outcomes (section 4.2). Building on this,

[29] Refer to Appendix 9-Appendix 38 for the details of the unweighted data N values and weighted percentages, which relate to the figures found in this chapter.

health (section 4.3), then socio-economic (section 4.4), then geographical (section 4.5) and finally the caring variables (section 4.6), will be examined in terms of their associations with economic outcomes. The research questions of this thesis reflect an interest for exploring the associations of these variables while controlling for whether respondents are above/ below the SPA and male/ female. To finish, section 4.7 of this chapter will provide a summary of the statistically significant associations identified, helping to direct the multivariate analysis that will follow in chapter 5.

4.2 The association between economic activity in later life and demographic characteristics

The literature review has already demonstrated that demographic characteristics often influence economic outcomes of older adults (Phillipson and Smith, 2006;Phillips et al., 2010;Phillipson, 2013). The analysis of this chapter begins by exploring key demographic characteristics found within the dataset and their association with economic outcomes.

4.2.1 The association between economic activity in later life and age

The most commonly discussed demographic characteristic associated with economic outcomes in the literature review was the variable of age. Research suggests that with increasing age the likelihood of someone being economically active tends to decline (Banks et al., 2006;Banks et al., 2008a;Gjonça et al., 2010;Banks et al., 2012) (see section 2.2.1). This suggests that economically active individuals are often younger than those who are instead economically inactive.

Looking at Table 18, the mean ages of respondents who are economically active and inactive are noted. Evidently, in line with the findings of pre-existing literature, the mean age of the respondents in the economically active group suggests that these individuals are younger than those who are instead economically inactive.

Table 18: Mean age of economically active and inactive individuals, aged 50-74 years old, (England), 2010

	Economically Active Respondents	Economically Inactive Respondents	All Respondents
	Mean	Mean	Mean
Age (years old)	58.98	65.81	62.98

Source: Author's Analysis, ELSA Wave 5 (2010).

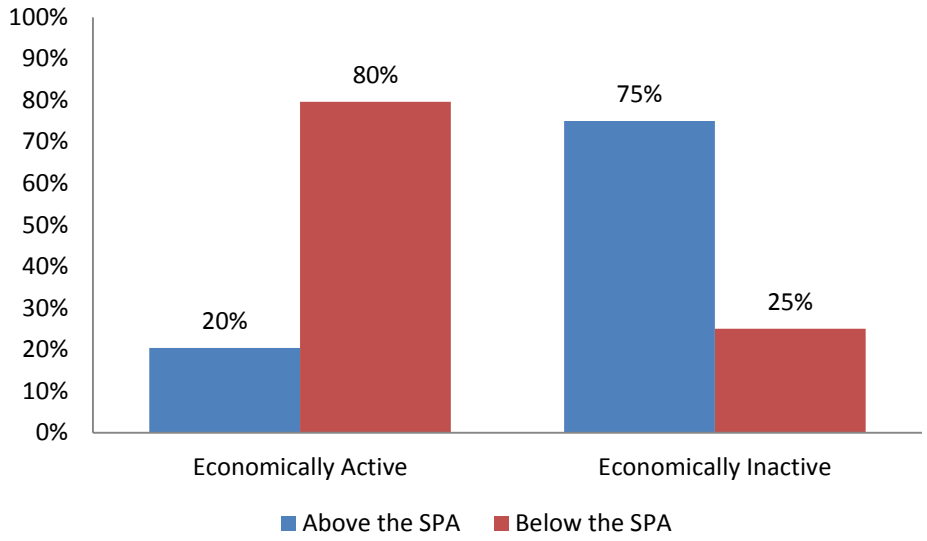
It is noted in Table 18 that the mean age of economically active individuals also falls below the SPA of both men and women, defined as 65 and 60 by this research (mean age: 59 years old); whereas, the mean age of individuals who are economically inactive falls above the SPA (mean age: 66 years old). This was an interesting result as it appears to support research which suggests that age influences economic outcomes in later life (Banks et al., 2006;Banks et al., 2008a;Gjonça et al., 2010;Banks et al., 2012). This leads us to the next part of the analysis, which looks at the association between the SPA and economic activity (section 4.2.2).

4.2.2 The association between economic activity in later life and whether a person is above/ below the SPA

Research has noted that the age at which a person becomes eligible for a state pension, is often similar to the effective age at which they will retire (Holiday, 2012). In light of this, and building upon the findings of Table 18, it was expected that individuals who are above the SPA are more likely to be economically inactive, while persons who are below the SPA are more likely to be economically active. Figure 48 illustrates that respondents who reported to be economically active were indeed represented by a higher percentage of younger individuals (those who were below the SPA), while older adults (those who are above the SPA) were more commonly reported to be among those who reported to be economically inactive. This finding was statistically significant and confirmed the expectations of the researcher and the suggestions of the

literature, surrounding the influence of age upon economic outcomes (Banks et al., 2006;Banks et al., 2008a;Gjonça et al., 2010;Banks et al., 2012)[30].

Figure 48: Economic activity among individuals 50-74 years old, by whether they are above/ below the SPA (%), (England), 2010



X^2=1927.695, df=1, p<0.001 (weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)

For detailed N values and weighted percentages, refer to Appendix 9

Source: Author's Analysis, ELSA 2010.

[30] Notably, the dependent variable derived for this study merged various responses relating to respondents current situation, into two categories. The status of 'retired' made up the majority of the sample grouped as economically inactive, while the group identified as economically active included a majority of individuals reporting to be 'employed' (refer to section 3.5.1.1.1 for more details). Arguably, this majority may have had an influence of the results which were noted, and may have prevented differences between the original more detailed *current situation* categories to have been missed. For example, individuals who are 'semi-retired' are often older than individuals who are providing childcare or elder care (Weir, 2002; Chen & Scott, 2003)). However, 'semi-retired' individuals are categorised into the economically active group, while the category of 'looking after home or family' is coded as 'economically inactive' by the present study. The smaller cell counts of individuals in these situations and their placement into the final categories may have meant their differences may have been masked (see Table 8 for more details). Thus, it is vital to be mindful of the diversity of the dependent variable when interpreting the results.

Building on the analysis of this figure and that of Table 18, Table 19 identifies the mean age of respondents reporting to be economically active and inactive, according to whether they are above/ below the SPA.

Table 19: Mean age of individuals who are above/ below the SPA economically active/inactive, (England), 2010

	Outcome variable response			
	Above the SPA and Economically Active	**Above the SPA and Economically Inactive**	**Below the SPA and Economically Active**	**Below the SPA and Economically Inactive**
	Mean	Mean	Mean	Mean
Age (years old)	64.74	67.87	57.31	58.88

Source: Author's Analysis, ELSA 2010.

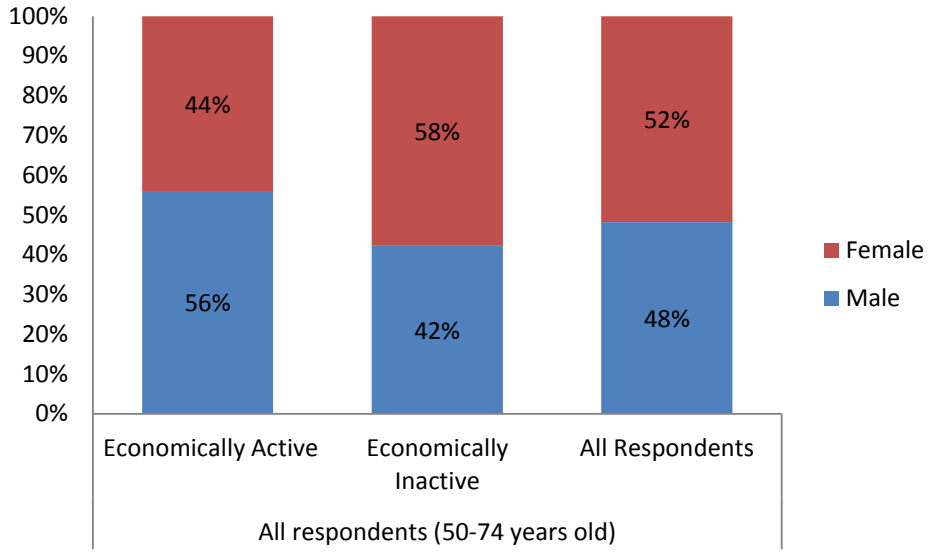
Evidently, the results of Table 19 support the literature pertaining to economic activity decreasing with increasing age (Adams et al., 2002). For example, the mean age of economically inactive respondents is higher than that of economically active respondents (e.g. Above/Below the SPA: active=65/57 years old vs. inactive=68/59 years old). This was the case for both individuals who are above the SPA and those who are below the SPA. These results highlight how age appears to influence economic outcomes of later life. The evidence surrounding the role of age and the SPA found by this analysis suggests that these variables are *significantly associated with economic activity among older adults*.

4.2.3 The association between economic activity in later life and gender

A second demographic variable recognised by the literature for its association with economic outcomes in later life, was gender (Quick and Moen, 1998;Slack and Jensen, 2008;Lee and Tang, 2013). Evidence suggests that the career trajectories of men and women differ, consequently impacting their economic outcomes in later life (Johnson and Zaidi, 2007).

Figure 49, examines the association between economic activity and gender, among individuals aged 50-74 years old.

Figure 49: Economic activity among individuals aged 50-74 years old, by gender (%), (England), 2010

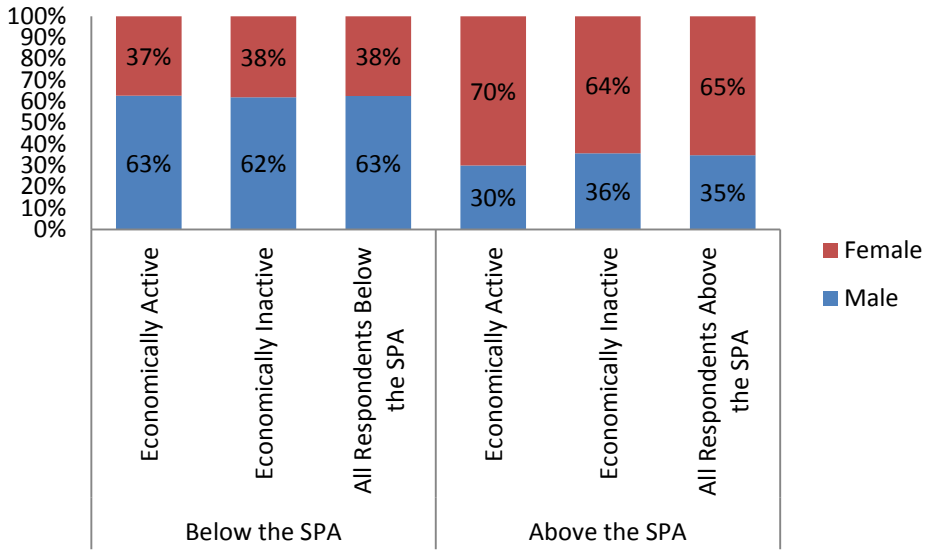


X^2=122.061, df=1, p<0.001 (weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)
For N values and weighted percentages, refer to Appendix 10
Source: Author's Analysis, ELSA 2010.

Examining Figure 49, it is evident that among all of the respondents, regardless of their economic activity status, a higher percentage were female (48%=male, 52%=female). Closer inspection of the results revealed that among economically active individuals, a higher percentage were male (56%); whereas among economically inactive individuals, a higher percentage were female (58%). This result was statistically significant, thus it could be said that *gender and economic activity are associated*.

According to the literature and the results found within sections 4.2.1 and 4.2.2, economically active individuals tend to be younger than persons who are economically inactive (Banks et al., 2006;Banks et al., 2008a;Gjonça et al., 2010;Banks et al., 2012). Consequently, it was anticipated that the men in the study sample were likely to be younger than the women, due to the higher percentages of men reporting to be economically active (see Figure 49). To explore this further, Figure 50 identifies the economic outcomes of individuals alongside their reports of being above/ below the SPA and their gender.

Figure 50: Economic activity among individuals who are above & below the SPA by gender (%), (England), 2010



Below-the-SPA: X^2=.178, df=1, p>0.01 (weighted) (unweighted N=3,376, econ active=2,379, econ inactive=997)
Above-the-SPA: X^2=7.071, df=1, p<0.01 (weighted) (unweighted N=4,028, econ active=689, econ inactive=3,339)
All respondents 50-74 years-old: X^2=122.687, df=1, p<0.001 (weighted)
For detailed N values and weighted percentages, refer to Appendix 11
Source: Author's Analysis, 2010 ELSA.

Figure 50 confirmed the researcher's expectations whereby among respondents who were above the SPA, a higher percentage were female (65%). Evidently, among respondents who are above the SPA and economically active, 70% were women, whereas only 64% of economically inactive respondents were women. The relevant chi-square tests revealed that there was a *significant association between gender and economic outcomes among persons who are above the SPA*.

Exploring now, the results attached to individuals who were below the SPA, a higher percentage were male (63%). More men in this group reported to be economically active (63%) as opposed to economically inactive (62%). Despite these interesting observations in the data, *the results were not statistically significant among the group aged below the SPA, thus no association between economic activity and gender could be concluded.*

Looking towards the literature, research has found that women tend to live longer than men; however, they often experience more chronic conditions (Orfila et al., 2006). This may explain why more women were in the group who

reported to be above the SPA (noted in Figure 50). Furthermore, the higher rates of economic activity among men compared to women when below the SPA, may show how chronic conditions affect women in a way that makes it harder for them to be economically active. The links between gender and health are explored in greater depth within section 4.3.

In brief, the analysis surrounding the association between gender and economic activity suggests that *there appears to be an association between gender and economic outcomes among individuals who are above the SPA, and among respondents aged between 50-74 years old. However, this association is not significant among individuals who are below the SPA*. The researcher remains mindful that the outcome variable was derived through pooling respondents' answers of their current situation, and that this may have influenced the results (see section 3.5.1.1.1). Research has demonstrated that women often are the primary providers of care and hold domiciliary roles (Dentinger and Clarkberg, 2002). Reflecting on the smaller number of women falling into the group aged below the SPA, and knowing that the original response of 'looking after home or family' comprised 11% of the economically inactive group, the potential for the dependent variable to have influenced which of the results were statistically significant, is highlighted (see Table 8 for further details).

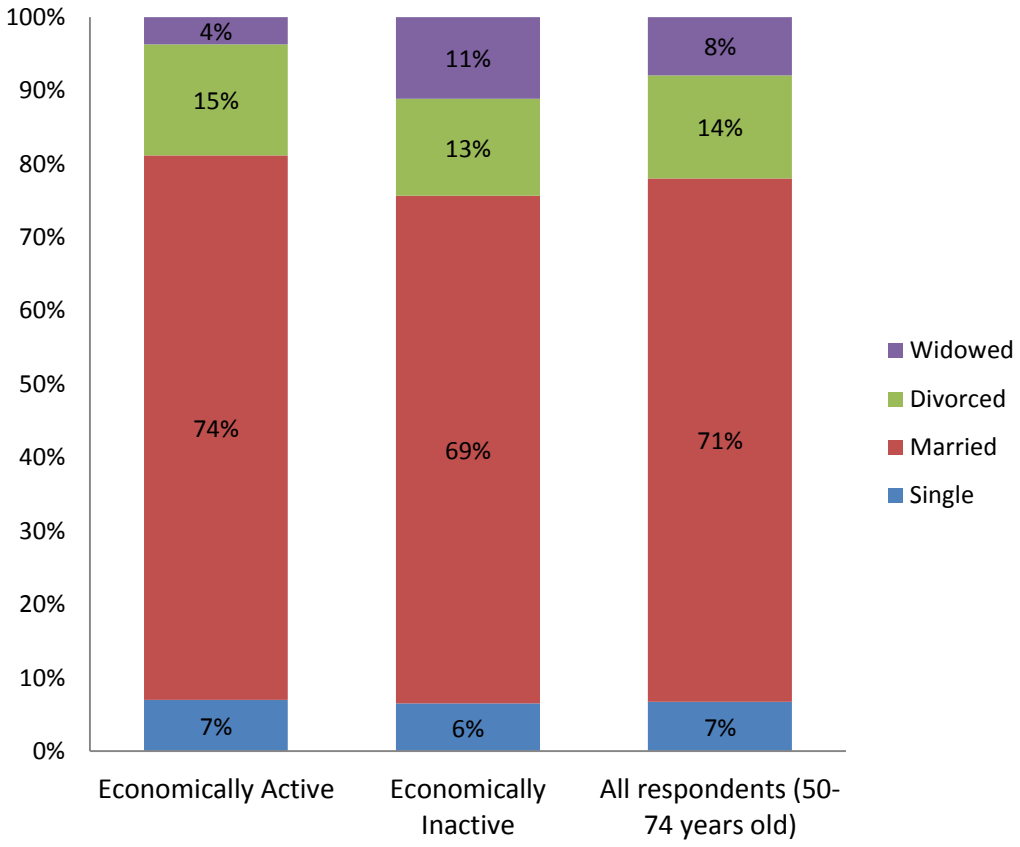
4.2.4 The association between economic activity in later life and marital status

Alongside the variables of age and gender, a third variable commonly discussed in relation to individual's demographic characteristic profiles, relates to the variable of marital status. Research suggests that marital status, can influence economic activity patterns in later life; however, the exact relationship between these two variables is less clear-cut (McKay and Middleton, 1998;Lund et al., 2001). Among some research, marriage is associated with economic inactivity and hardships (Pearlin and Johnson, 1977;Young et al., 2005;King and Pickard, 2013). For instance, married individuals are more likely to have dependent children, which can have implications for care-giving duties and can lead to career interruptions (particularly among women) (Pearlin and Johnson, 1977;Young et al.,

2005;King and Pickard, 2013). (The association between economic activity and caregiving is discussed further by section 4.6 of this chapter). Conversely, literature suggests that marriage can have protective benefits. For example, literature has found evidence to show that having a partner is linked to improved health reports, which enables people to live and work for longer (Arber, 1997;Stimpson et al., 2012;Van Hedel et al., 2015).

Figure 51, explores the association between marital status and economic outcomes, among individuals aged between 50-74 years old.

Figure 51: Economic activity among individuals 50-74 years old, by marital status (%), (England), 2010



X^2=120.661, df=3, p<0.001 (weighted) (unweighted N=7,403, econ active=3,068, econ inactive=4,335)

For detailed N values and weighted percentages, refer to Appendix 12

Source: Author's Analysis, 2010 ELSA.

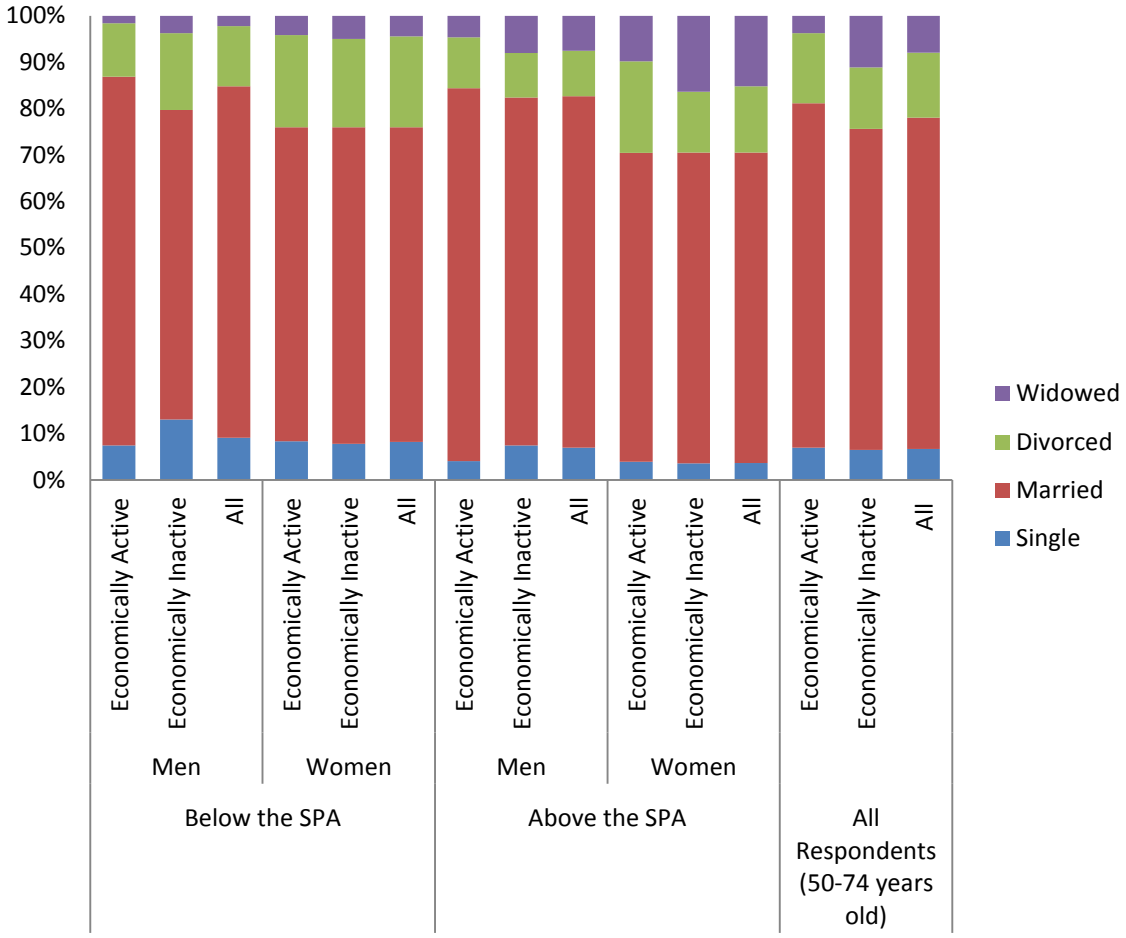
Examining Figure 51, it is evident that the majority of individuals, regardless of whether they are economically active/ inactive, report to be 'married' (69%-74%), while reports of being 'single' or 'widowed' were the least common (for instance, only 4% of individuals who were economically active, reported to be

'widowed'). Looking at the patterns in the data among individuals who are economically active and inactive, further interesting results are noted. Evidently, among individuals who are economically active, a higher percentage report to be 'single' (7%), 'married' (74%), 'divorced' (15%), and a lower percentage report to be 'widowed' (4%), compared to the percentages reported by economically inactive individuals (7%, 69%, 13%, 11%).

The result of the chi-square test statistic relating to this figure was statistically significant to the 0.001 level, suggesting that *there is an association between marital status and economic outcomes among persons aged 50-74 years old (men and women) ($p<0.001$).*

Research has found that the effect marital status has upon economic outcomes can be influenced by a person's age and gender (Evandrou and Glaser, 2004;Loretto et al., 2005) (see section 2.2.2 and 2.2.3). It was evident in Figure 51 that the percentage of economically inactive widows was over double the percentage of widows who were instead economically active. Arguably, this may reflect the higher average age of the economically inactive group (refer back to Table 18). Support for this, is offered by research which has found evidence to show that reports of being widowed are more common among older adults, particularly those who are women (Dentinger and Clarkberg, 2002). To explore the effects of age and gender it is interesting to look towards the results of Figure 52.

Figure 52: Economic activity among individuals (men, women, men and women) aged 50-74 years old (above/ below the SPA) by marital status (%), (England), 2010



Below-the-SPA, Men X^2=39.604, df=3, p<0.001 (weighted) (unweighted N=1,937, econ active=1,340, econ inactive=597)

Below-the-SPA, Women X^2=.613, df=3, p>0.01 (weighted) (unweighted N=1,439, econ active=1,039, econ inactive=400)

Above-the-SPA, Men X^2=5.663, df=3, p>0.01 (weighted) (unweighted N=1,374, econ active=206, econ inactive=1,168)

Above-the-SPA, Women X^2=19.633, df=3, p<0.001 (weighted) (unweighted N=2,653, econ active=483, econ inactive=2,170)

All Respondents X^2=121.224, df=3, p<0.001 (weighted) (unweighted N=7,403, econ active=3,068, econ inactive=4,335)

For detailed N values and weighted percentages, refer to Appendix 13

Source: Author's Analysis, 2010 ELSA.

Figure 52 reveals a plethora of interesting results however, for the purpose of this analysis the researcher will discuss the most relevant to the present study's interests.

Similar to Figure 51, Figure 52 also shows that the most commonly reported marital status is 'married', while the least common is 'single' and 'widowed'.

In comparison to economically inactive respondents, the percentage of widowed respondents was smaller among economically active respondents.

In terms of gender differences, the results indicate that men report to be 'married' or 'single' more than women, whereas women report to be 'divorced' or 'widowed' more than their male counterparts. Research suggests that women tend to live longer than men; often attributed towards why women become widowed more often than men who instead will remain married (as their spouse is still alive) (Quick and Moen, 1998;Szinovacz et al., 2001;Kim and Moen, 2002;Orfila et al., 2006).

It was also found that economically active women report to be 'divorced' more often than economically inactive women of equivalent SPA status (where SPA status refers to whether a person falls into the group of being 'above' or 'below' the SPA), the opposite is true among men. Economically active women (regardless of whether they are above/ below the SPA) also report higher percentages of being 'single' compared to economically inactive respondents, whereas among men, this percentage instead decreases. Finally, economically active men report to be 'married' more often than economically inactive men, regardless of whether they are above/ below the SPA; whereas for women, economic activity is met with a lower percentage of 'married' responses. Looking towards the literature, research once more can provide some possible insight into these findings. To begin, research has found that men more often are economically active if they have children (children frequently occurring in the context of a marriage), which may explain why more economically active men report to be married (Cherlin, 1980;Easterlin et al., 1993;Biggart and O'Brien, 2010). Conversely, the absence of a partner such as that experienced by individuals who are 'single' or 'divorced', has been suggested to be a motivational influence for being economically active (Phillipson and Smith, 2006). Women without partners, have been suggested to be particularly susceptible, whereby they are found to more commonly be economically active to ensure they can financially support themselves and their children (Spence and Helmreich, 1978;Phillipson and Smith, 2006).

To complete the observations made from this data analysis, the researcher lastly notes the differences between the two groups, defined by whether a

respondent was above/ below the SPA. Literature reports that women tend to live longer than men, resulting in them more often becoming widowed in later life (Quick and Moen, 1998;Szinovacz et al., 2001;Kim and Moen, 2002;Orfila et al., 2006). This was particularly evident among the older respondents of the study sample (those who are above the SPA) whereby the reports of being 'widowed' were highest among individuals (particularly women), while accounts of being 'single' were highest among individuals (particularly men) who are below the SPA.

The results pertaining to *men who are above the SPA and women who are below the SPA were not statistically significant, thus associations between marital status and economic activity among these individuals could not be assumed*. However, looking at the statistically significant results it was concluded that *marital status is associated with economic activity among women who are above the SPA and men who are below the SPA*.

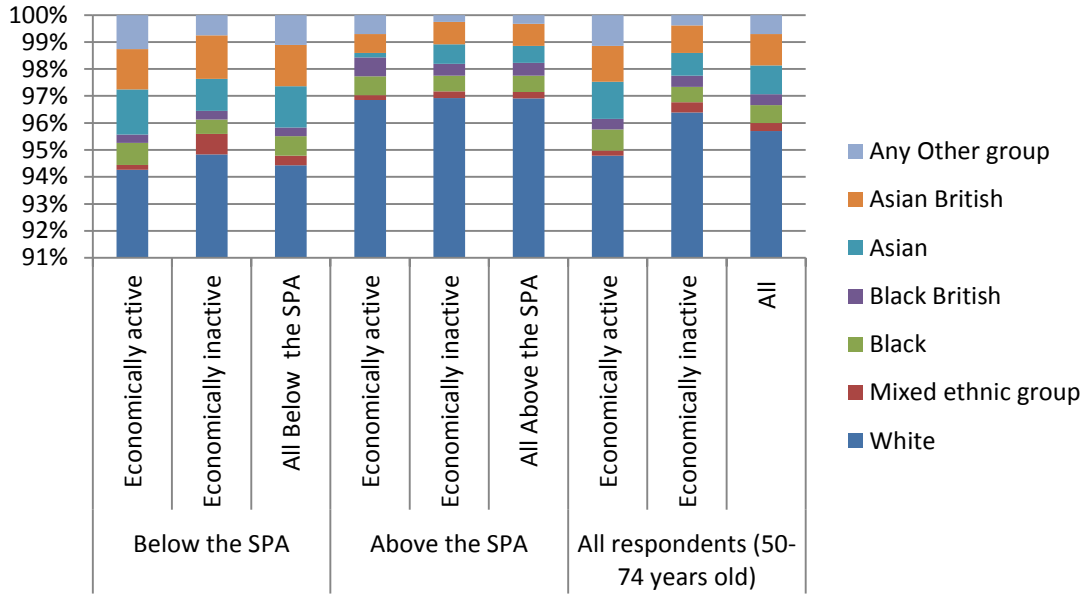
4.2.5 The association between economic activity in later life and ethnicity

The final demographic variable explored by this analysis, was ethnicity. Literature reports that this variable plays a significant role in whether a person is economically active or inactive in later life. Owen et al. (2000) suggests that ethnic minority individuals often exhibit different working patterns to those of white persons. Initial analysis to explore ethnicity's association with economic activity highlighted that the majority of the study sample were 'white' (see Appendix 14 and Appendix 15). This was the case regardless of whether respondents were economically active/ inactive. Notably, the cell counts attached to the minority groups were small (see Appendix 14), and for this reason the researcher was wary that this could have influenced the results (refer to section 6.3 for more details). Evidently, a higher percentage of white respondents fell into the economically inactive outcome (96%). This initial analysis also revealed that the respondent percentages in the "Any other group", "Asian British", "Asian" and "Black" groups, were larger within the economically active group than those found in the inactive group. In comparison to the economically inactive group, a higher percentage of individuals reported to be of "Mixed ethnic group". The chi-square result was

statistically significant (p<0.001), *suggesting that ethnicity and economic outcomes of later life are associated*, supporting the literature which has shown that ethnicity plays a role in economic outcomes among older adults (Barnes and Taylor, 2006).

Literature reports that the age structures of ethnic groups tend to be younger than those of white individuals (Katbamna and Matthews, 2006;England and Wales Census, 2011). To examine the influence this may have had for economic activity, ethnicity was cross-tabulated with economic activity once more, while also controlling for whether respondents were above/ below the SPA (see Figure 53).

Figure 53: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by ethnicity (%), (England), 2010



Note: The Y-axis begins from 91% rather than 0% in order to show the smaller sub-groups of the ethnic minority population in the figure.
Below-the-SPA X^2=9.459, df=6, p>0.01 (weighted), (unweighted N=3,300, econ active=2,320, econ inactive=980)
Above-the-SPA X^2=6.159, df=6, p>0.01 (weighted), (unweighted N=3,927, econ active=675, econ inactive=3252)
All Respondents 50-74 years-old X^2=22.297, df=6, p<0.001 (weighted) (unweighted N=7,227, econ active=2,995, econ inactive=4,232)

For detailed N values and weighted percentages, refer to Appendix 16.

Source: Author's analysis, ELSA 2010

Looking at Figure 50, it is evident that among individuals who are below the SPA, a higher percentage of individuals are from ethnic groups compared to the group who are above the SPA. This supports the literatures suggestions that the age structures of ethnic minorities tend to be younger than white persons (Katbamna and Matthews, 2006;England and Wales Census, 2011).

Although these results were interesting, it is evident that the chi-square tests suggest that *this association was not significant*. Arguably, the small cell counts noted among non-white respondents may have attributed to this insignificant result. This is discussed in more detail in chapter 6.

A final area explored by the analysis examined the association of ethnicity with economic activity while controlling for gender. This would allow the researcher to determine whether there were any gender differences. The literature review has already suggested that gender plays a significant role alongside ethnicity in shaping economic outcomes of later life, and for this reason this direction in the analysis was taken (ONS, 2005). From completing analysis on this, the researcher found that the trends in the data were generally alike to that of the previous analysis. One striking difference was among economically active minority group men, who were shown to outnumber the percentage of economically active minority group women. Looking at the chi-square results, it was evident that *only women showed a significant result*, whereas *no significant association could be ascertained from the results of men in reference to the association between ethnicity and economic outcomes*. Once again, the small cell counts of minority individuals was attributed as a possible influence for this insignificant result (see also chapter 6 comments).

Evidently, the results relating to ethnicity were mixed in terms of establishing clear associations with economic activity. The findings were particularly mixed when the researcher went on to control for whether respondents were above/ below the SPA and their gender. Despite this, *an association was established between these two variables among individuals (men and women, aged between 50-74 years old).*

4.3 The association between economic activity in later life and health characteristics

Having discussed demographic variables and their relationships with economic outcomes in later life, a further area that has been associated with economic activity, up-to, and beyond the SPA within the literature, is health. An abundance of pre-existing research has suggested that health outcomes are associated with age, whereby it has been reported that old-age is linked to

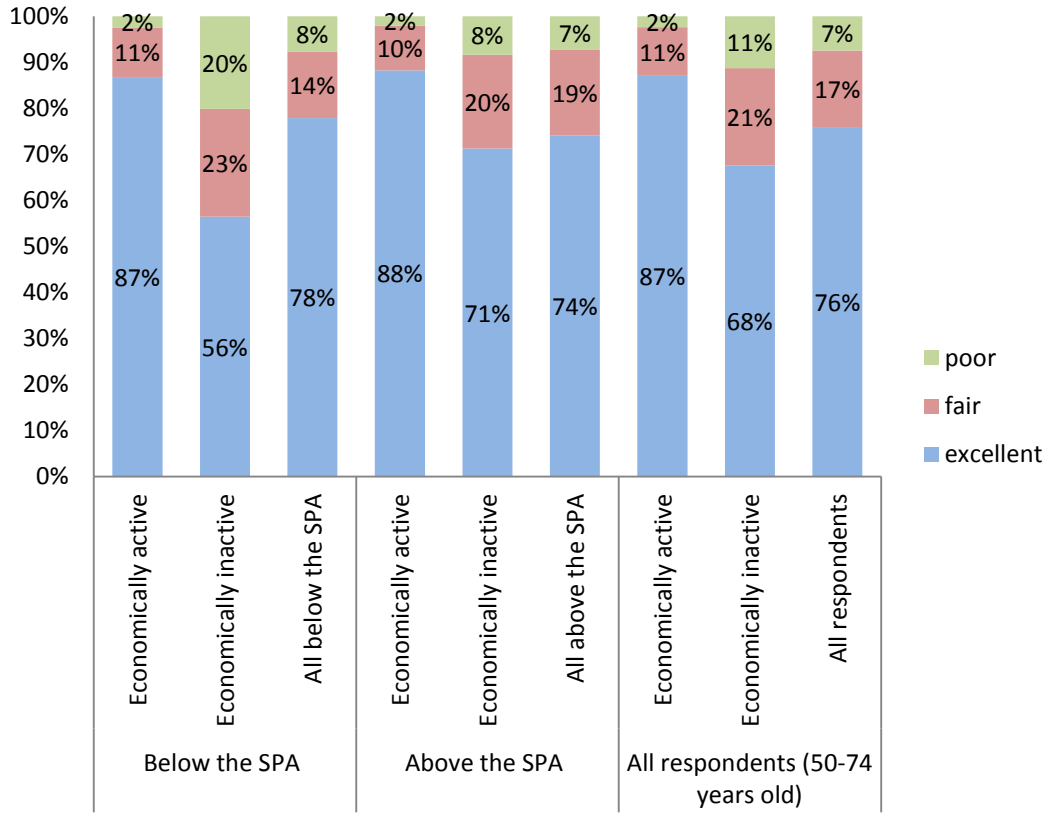
poorer health (Adams et al., 2002). Interestingly in relation to the present research, it is widely suggested throughout the literature, that the SPA (60 for women, 65 for men) is an average age where health often begins to decline (Adams et al., 2002). In light of this, it can be anticipated that persons who are above the SPA are more likely to be in poorer health than those who are below the SPA. Persons who are in poorer health are more likely to be economically inactive as economic inactivity is associated with bad health, whereas economic activity is associated with good health (Bound, 1991;Dwyer and Mitchell, 1999;Banks et al., 2010;Ahtonen, 2011). To account for this, age was used as a constant to standardise the results (Lloyd-Sherlock et al., 2012a). For the purpose of the results presented in this chapter, the age variable used to standardise the results was respondents SPA (variable label: [SPA]) (which could identify whether respondents were above/ below the SPA) (see sections 3.5.1.1.2.1 and 3.5.1.1.2.2 for details). Through standardising the results, it was easier to see the true effect that health has on economic outcomes in later life (Bryman, 2008).

Already, the figures discussed so far by this chapter have demonstrated that with increasing age people are more likely to become economically inactive (for example, see Figure 48). Existing literature suggests that economic inactivity is related to ill-health (Vickerstaff, 2006). To explore this association further, a selection of health variables, (physical and psychological) were analysed.

4.3.1 The association between economic activity in later life and SRGH

The first health variable examined was SRGH. This variable encompasses both physical and psychological aspects of health, and could help provide a general indication surrounding whether health is indeed associated with economic outcomes in later life. The results which examine the association between SRGH and economic activity are presented in Figure 54.

Figure 54: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by SRGH (%), (England), 2010



Below-the-SPA: X^2=418.476, df=2, p<0.001(weighted), (unweighted N=3,372, econ active=2,378, econ inactive=994)

Above-the-SPA: X^2=74.401, df=2, p<0.001 (weighted), (unweighted N=4,026, econ active=689=, econ inactive=3,337)

All Respondents (50-74 years-old): X^2=360.485, df=2, p<0.001(weighted), (unweighted N=7,398, econ active=3,067, econ inactive=4,331)

For detailed N values and weighted percentages, refer to Appendix 17

Source: Author's analysis, 2010 ELSA.

The analysis of Figure 54, demonstrates that among economically active individuals (regardless of whether they are above/ below the SPA), reports of 'excellent' health exceeded the percentages reported by economically inactive individuals. This finding supports the literature which has suggested that health is associated with economic outcomes (Vickerstaff, 2006). The results revealed that reports of 'poor' and 'fair' health were more common among persons who are economically inactive compared to economically active individuals who are equivalently above/ below the SPA. Comparing the results of respondents who are above the SPA versus those who are below the SPA, it was evident that respondents who are below the SPA report higher percentages of 'excellent' health (78%) and lower accounts of 'fair' health (15%) than the

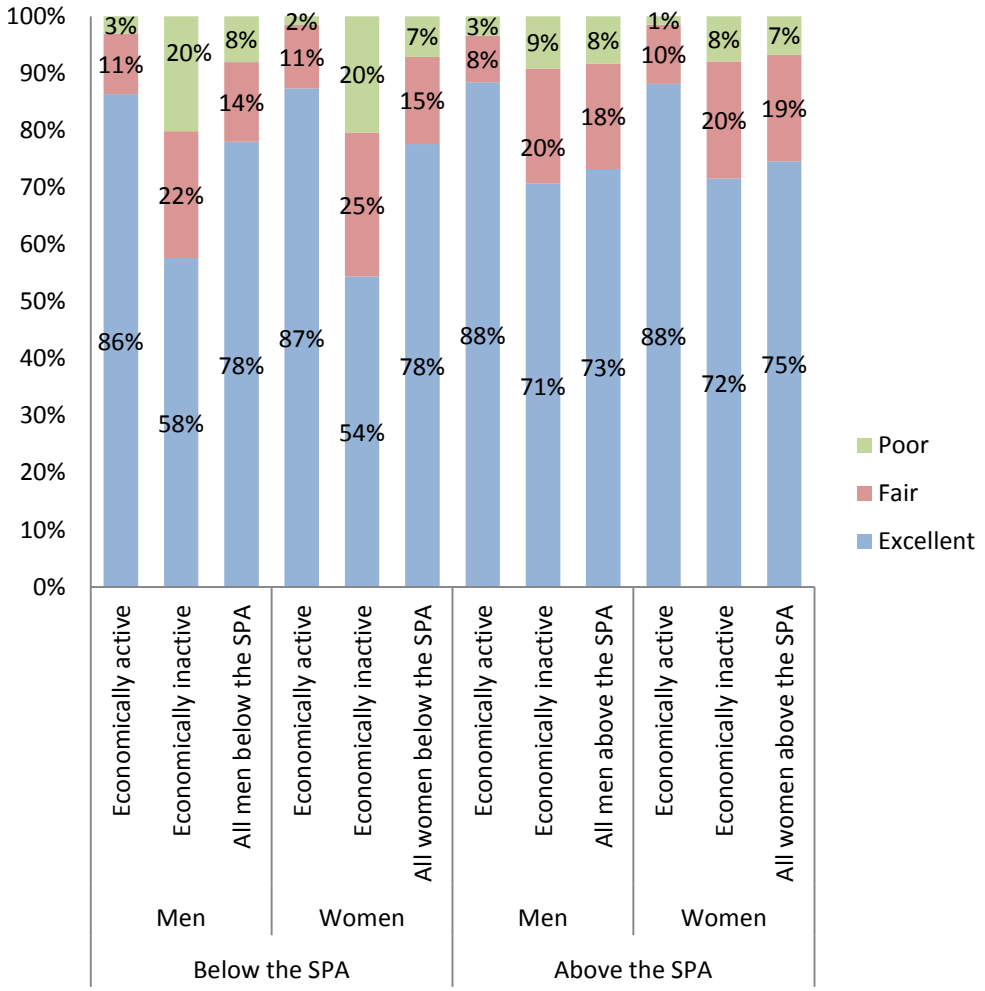
group aged above the SPA (74%, 19%). Interestingly, the percentage of individuals reporting to be in excellent health was highest among those who were above the SPA and economically active (88%) (Adams et al., 2002;Lloyd-Sherlock et al., 2012a). Furthermore, it was found that individuals who are below the SPA and economically inactive, report the highest percentages of 'poor' and 'fair' health. Although the evidence suggests that with increasing age health tends to decline, literature has found that in terms of subjective health reports, older adults often appear to be disproportionately positive. For example, evidence in the literature review (see section 2.3.1) touched upon "health optimism" a term used by other researchers in correspondence of older adults' positive health reports. Research argues the different interpretations and expectations of health and healthcare among individuals in different cohorts can result in health status ratings often being different (Idler, 1993;Borawski et al., 1996;Chen et al., 2007). It has been suggested that this is also a method of coping adopted by individuals in later life, whereby individuals take on positive attitudes towards their health, helping them to remain optimistic as opposed to pre-occupied with health concerns (Idler, 1993;Borawski et al., 1996;Chen et al., 2007).

The key message derived from this analysis is that *economic activity is associated with SRGH among individuals who are both above/ below the SPA*.

4.3.1.1 The association between economic activity in later life and SRGH among men and women

Research has demonstrated that life expectancy estimates for men and women are different (Orfila et al., 2006). In addition to this, healthy and disability-free life expectancy reports also tend to vary for men and women (ONS, 2012b-a). There is evidence to suggest that these differences, pose a complexity of implications for economic outcomes in later life (Orfila et al., 2006). Figure 55 explores these differences further, and examines SRGH's association with economic activity among men and women, who are above/ below the SPA.

Figure 55: Economic activity among men and women aged above/ below the SPA by SRGH (%), (England), 2010



Below-the-SPA, Men: X^2=233.133, df=2, p<0.001 (weighted), (unweighted N=1,936, econ active=1,340, econ inactive=596)

Below-the-SPA, Women: X^2=191.063, df=2, p<0.001 (weighted), (unweighted N=1,436, econ active=1,038, econ inactive=398)

Above-the-SPA, Men: X^2=23.857, df=2, p<0.001 (weighted), (unweighted N=1,374, econ active=206, econ inactive=1,168)

Above-the-SPA, Women: X^2=50.917, df=2, p<0.001(weighted), (unweighted N=2,652, econ active=483, econ inactive=2,169)

All Respondents: X^2=361.176, df=2, p<0.001(weighted), (unweighted N=7,398, econ active=3,067, econ inactive=4,331)

For detailed N values and weighted percentages, refer to Appendix 18

Source: Author's analysis, ELSA 2010.

Looking at Figure 55, it is evident that the patterns in the data are similar to those discussed by the previous Figure 54. For instance, excellent health reports are more common among economically active individuals as opposed to inactive persons, and poor/ fair health reports are more common among persons who are economically inactive. Additionally, the 'health optimism'

phenomena noted by the previous figure when comparing economically active younger and older adults, was evident once more, among both men and women (Idler, 1993;Borawski et al., 1996;Chen et al., 2007).

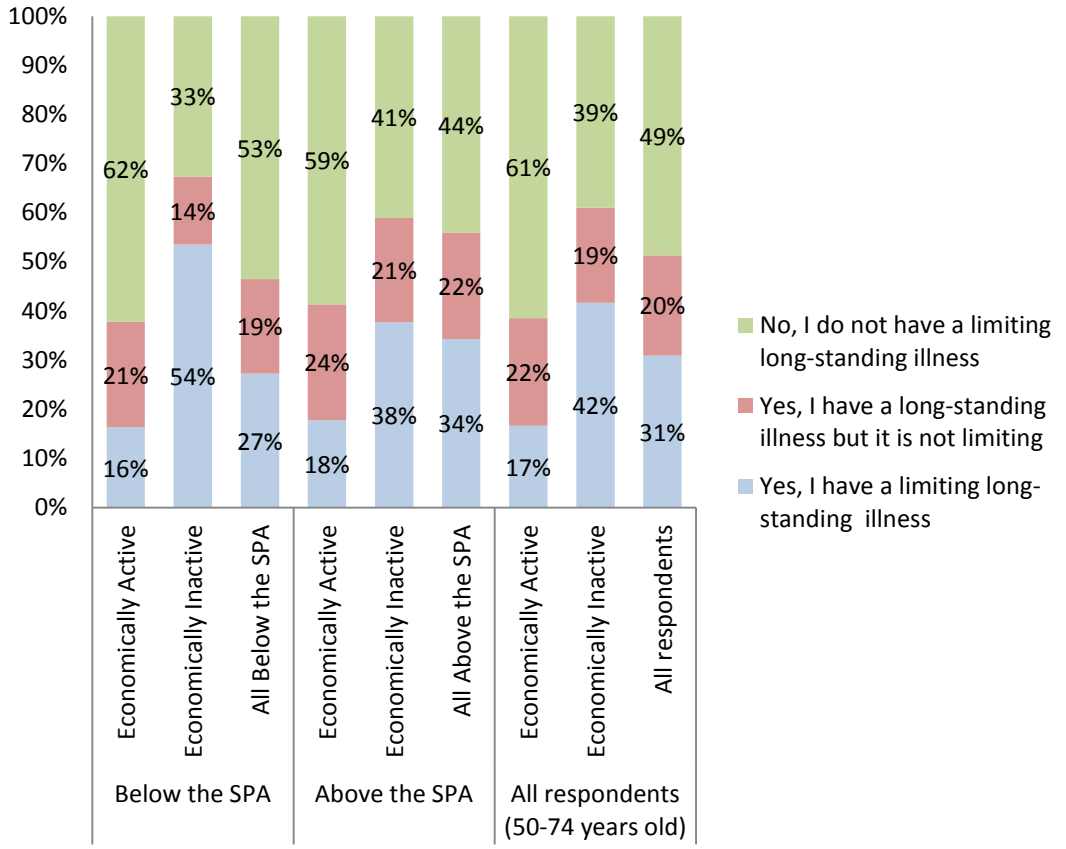
The figure demonstrates that men and women tend to report their health quite similarly however, overall women appear to report their health more neutrally/ negatively than their male counterparts. Research has suggested that in later life, the prevalence of chronic ill-health is higher among women than men (Orfila et al., 2006;Zunzunegui et al., 2008;Simon, 2010). Such research offers support to the findings of Figure 55, which demonstrated that a higher percentage of women report negative health.

The chi-square result of this figure suggests that t*he findings were all statistically significant, suggesting that economic activity and SRGH are associated (among men and women who are above/ below the SPA)*.

4.3.2 The association between economic activity in later life and limiting long-standing Illness (LLSI)

The second variable selected to explore health's association with economic outcomes, referred to whether respondents reported to have a LLSI, or not. Reports of a LLSI may be perceived as the least subjective of the health variables which were included in the analysis of this research, as it provided the most objective account of inhibiting 'illness' (Bound, 1989). Figure 56 presents the results relating to this variable's association with economic activity among individuals who are above and below the SPA.

Figure 56: Economic activity among individuals aged 50-74 years old (above/ below the SPA), by LLSI report status (%), (England), 2010



Below-the-SPA: X^2=463.119, df=2, p<0.001 (weighted), (unweighted N=3,374, econ active=2,378, econ inactive=996)

Above-the-SPA: X^2=90.211, df=2, p<0.001 (weighted), (unweighted N=4,025, econ active=689, econ inactive=3,336)

All respondents 50-74 years-old: X^2 =498.899, df=2, p<0.001 (weighted), (unweighted N=7,339, econ active=3,067, econ inactive=4,332)

For detailed N values and weighted percentages, refer to Appendix 19

Source: Author's analysis, ELSA 2010.

Looking at all of the respondents, regardless of whether they are above/ below the SPA it is evident that economically active individuals report more often not to have a LLSI compared to economically inactive individuals. Economically active persons also show that if they do have a long-term illness, this illness is usually not limiting, whereas among those who are economically inactive their illnesses are more likely to be limiting. These findings support literature which suggests that persons with illnesses are less likely to be economically active (ONS, 2014).

Moving on, the findings relating to the individuals who are above/ below the SPA, Figure 56 demonstrates that individuals who are below the SPA and

economically inactive, report the highest percentages of reporting a LLSI (54%). Individuals who are below the SPA and economically active reported the highest percentages for not having a LLSI (62%). It is interesting to note that individuals who are above the SPA, consistently reported higher accounts of having a long-standing illness which is not limiting (22%), compared to respondents who were below the SPA (19%). It may be suggested that this finding relates to the phenomena of older-adult health optimism, discussed first in section 2.3.1 (this phenomena is also touched upon in section 4.3.1).

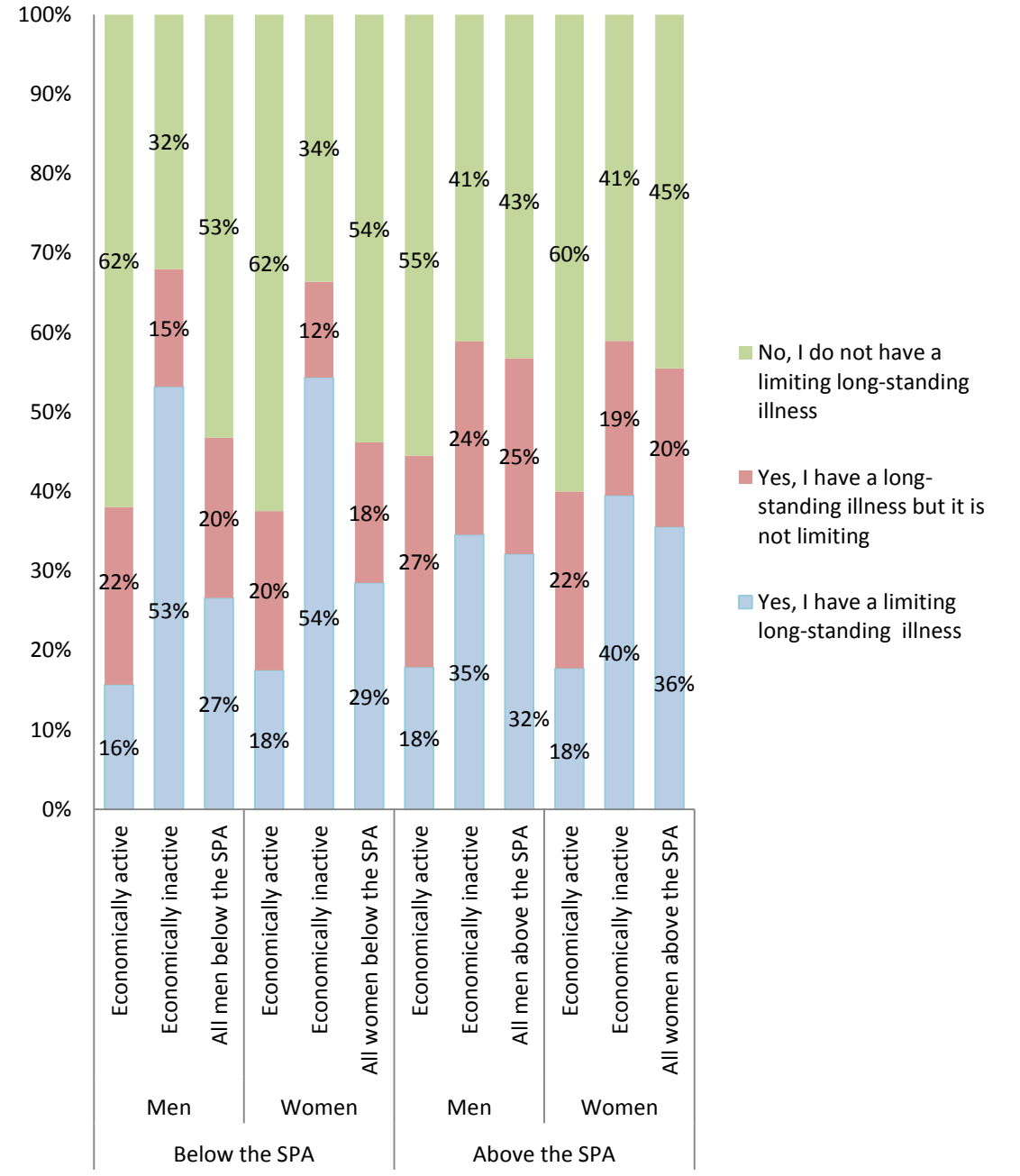
The association between economic activity in later life and LLSI's among individuals who are above/ below the SPA was found by the chi-square test to be statistically significant.

4.3.2.1 The association between economic activity in later life and LLSI's among men and women

Across the literature, there is evidence to suggest that women and men tend to experience and report health differently (Zunzunegui et al., 2008;Simon, 2010). For example, women tend to live longer but often experience more conditions that are chronic in old-age (Orfila et al., 2006;Lievre et al., 2007). With this in mind, the researcher wanted to explore the patterns in the data in relation to reports of a LLSI, among men and women, separately.

Figure 57, illustrates a breakdown of the results for LLSI reports, among men and women for Wave 5 (2010), by whether they are above/ below the SPA.

Figure 57: Economic activity among men and women 50-74 years old (above/ below the SPA), by LLSI report status (%), (England), 2010



Below-the-SPA, Men: X^2=298.353, df=2, p<0.001 (weighted), (unweighted N=1,937, econ active=1,340, econ inactive=597)

Below-the-SPA, Women: X^2=166.814, df=2, p<0.001 (weighted), (unweighted N=1,437, econ active=1,038, econ inactive=399)

Above-the-SPA, Men: X^2=20.073, df=2, p<0.001 (weighted), (unweighted N=1,373, econ active=206, econ inactive=1,167)

Above-the-SPA, Women: X^2=71.937, df=2, p<0.001 (weighted), (unweighted N=2,652, econ active=483, econ inactive=2,169)

All respondents 50-74 years-old: X^2 =499.8567, df=2, p<0.001 (weighted), (unweighted N=7,399, econ active=3,067, econ inactive=4,332)

For detailed N values and weighted percentages, refer to Appendix 20

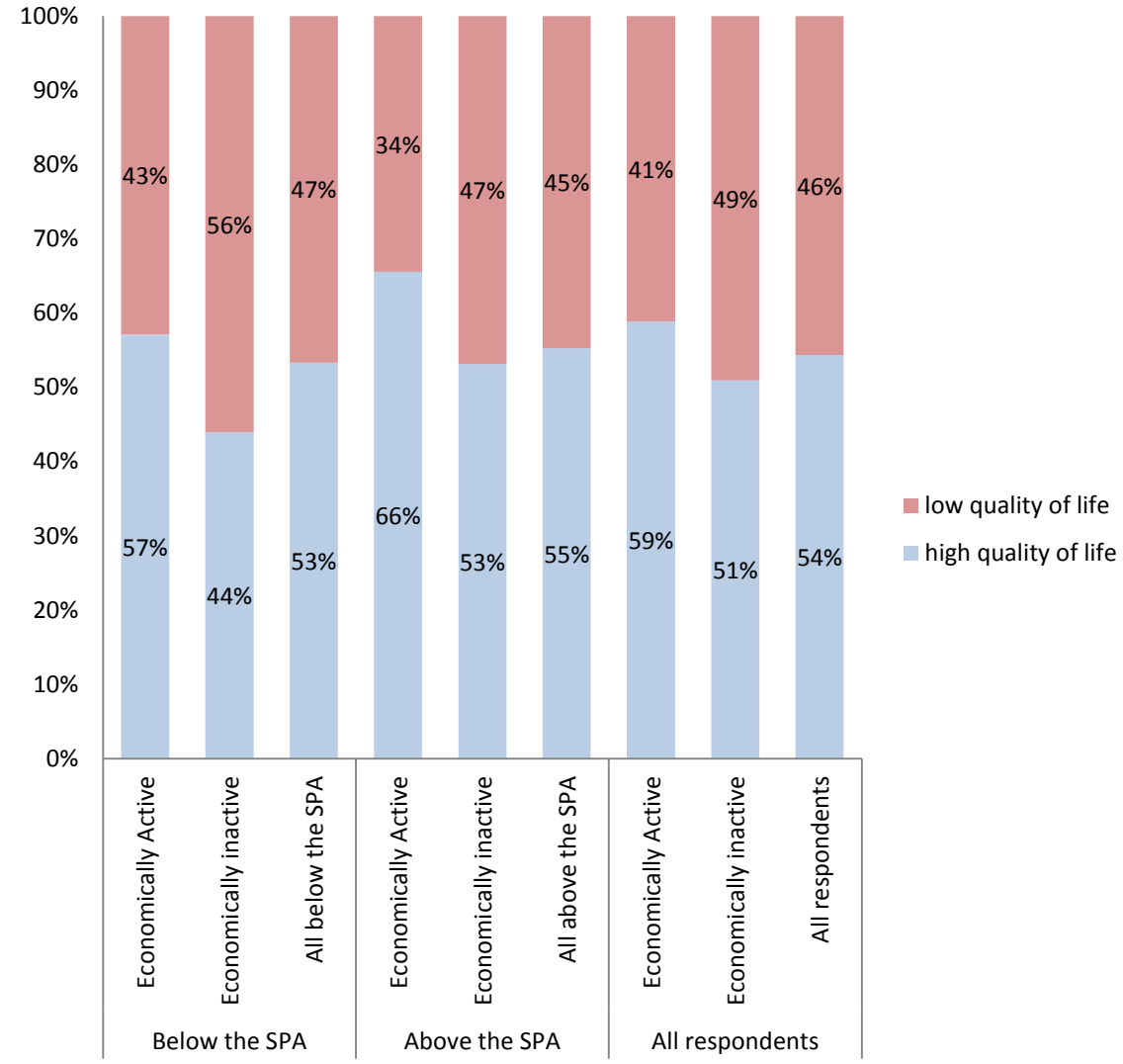
Source: Author's analysis, ELSA 2010.

Generally, as was the case of the previous figure, Figure 57 continues to support the literature which suggests that older persons will experience declines in health (in this context being the report of a LLSI) (Bartley and Plewis, 2001;Manor et al., 2001;Hertfordshire Council, 2012). Evidently, the report of an illness which is long-standing but which is not limiting appears to be higher among persons who are older or economically inactive. This finding is in line with research, which suggests that poor health increases with age and can influence whether a person is economically active (Bartley and Plewis, 2001;Manor et al., 2001;Hertfordshire Council, 2012). Interestingly, Figure 57 also demonstrates that a higher percentage of women report having a LLSI compared to men of equivalent age and economic activity status (Hertfordshire Council, 2012). While a higher percentage of men report long-standing illnesses which are not limiting, compared to their female equivalents. These findings support evidence surrounding gender differences in health, particularly with respect to the links it has with chronic conditions being more prevalent among women (Orfila et al., 2006) and women's tendency to report that they have health problems (Zunzunegui et al., 2008;Simon, 2010). The results of this figure suggest that *there is an association between reports of an LLSI and economic outcomes among persons (men and women) who are above/ below the SPA*.

4.3.3 The association between economic activity in later life and quality of life (QoL).

In addition to the variables of SRGH and LLSI reports, the CASP-19 scores of respondents were also considered by this research to help explore health's association with economic outcomes. Literature suggests that a person's CASP-19 score, can provide an indication of their QoL (Sim et al., 2001;Howel, 2012). QoL, has links to health and well-being, adding insight into the psychological areas of health and its association with economic outcomes (Wiggins et al., 2004;Howel, 2012). Figure 58, demonstrates the findings in reference to the QoL scores among all of the study sample respondents, broken down by whether they are above/ below the SPA.

Figure 58: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by QoL score (CASP-19) (%), (England), 2010



Below-the-SPA: X^2=40.582, df=1, p<0.001 (Weighted), (unweighted N=3,049, econ active=2,174, econ inactive=875)

Above-the-SPA: X^2=27.069, df=1, p<0.001 (Weighted), (unweighted N=3,667, econ active=629, econ inactive=3,038)

All respondents (50-74 years-old): X^2=36.723, df=1, p<0.001 (Weighted), (unweighted N=6,716, econ active=2,803, econ inactive=3,913)

For detailed N values and weighted percentages, refer to Appendix 21

Source: Author's Analysis, ELSA 2010.

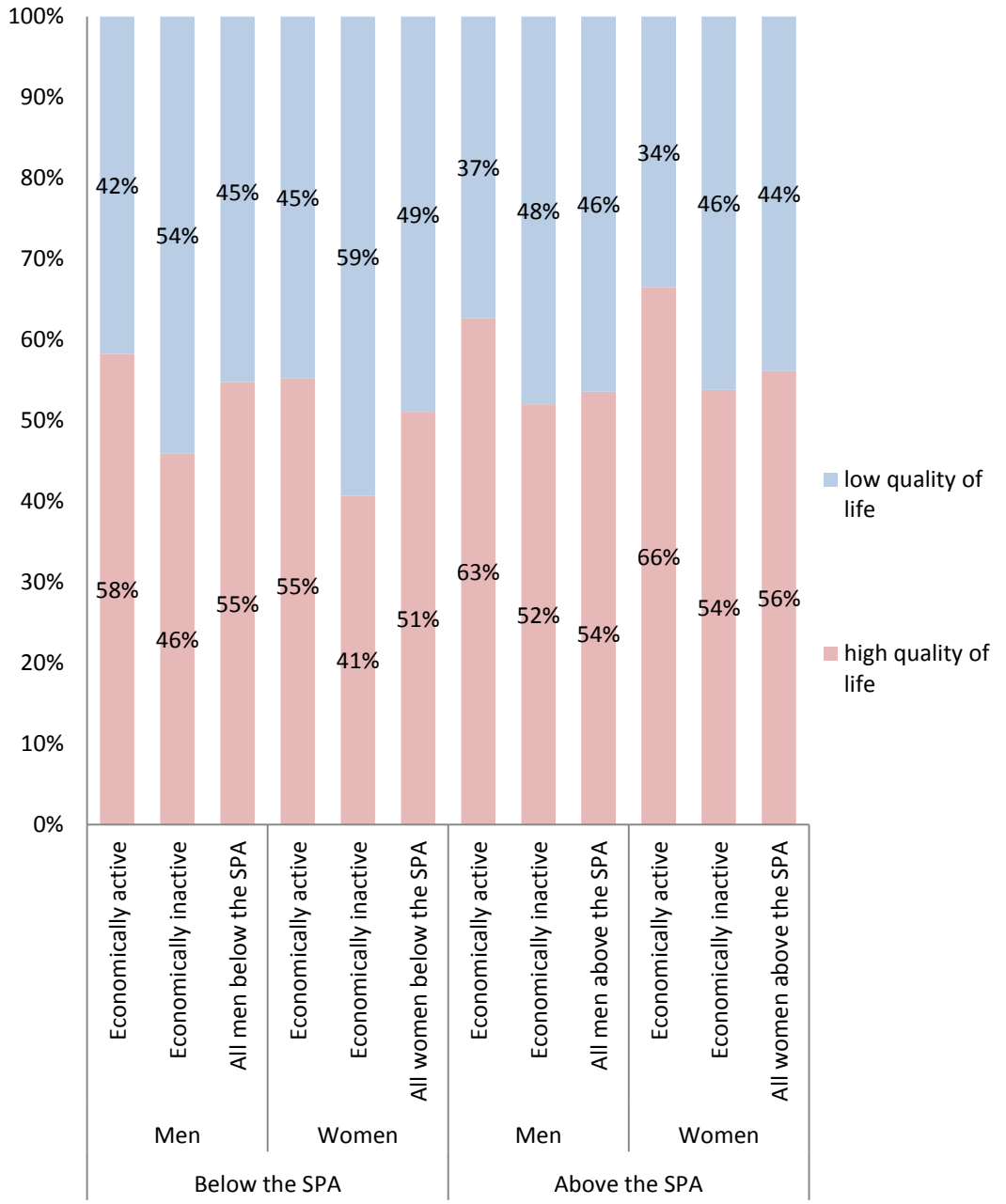
The results presented in Figure 58, illustrate that QoL scores tended to be higher among individuals who report to be above the SPA. This draws links once more to the phenomena of health optimism of older adults, which interestingly was also seen among the two other health variables of this analysis (LLSI and SRGH) (Idler, 1993;Borawski et al., 1996;Chen et al., 2007) (section 2.3.1 explains health optimism in more detail). Additionally, it is

noted that regardless of age group, economically active individuals report higher percentages of 'high QoL' (59%) compared to those who are economically inactive (51%), confirming other existing research which has found better QoL to be associated with prolonged economic activity Netuveli et al., 2006;Blane et al., 2007;Siegrist et al., 2007;Banks et al., 2008a).

4.3.3.1 The association between economic activity in later life and QoL among men and women

Within the literature, research has found that there are gender differences in QoL, in particular the relationship QoL has with economic activity (Quick and Moen, 1998;Hyde et al., 2003;Wiggins et al., 2004;Orfila et al., 2006). Although societal roles continuously evolve, some literature notes that men facilitate QoL more often from work-related tasks, while women instead derive it from care-duties (Greenhaus et al., 2003;Lee and Tang, 2013;Park et al., 2013;Parker and Wang, 2013). To explore this idea, it is interesting to look towards Figure 59.

Figure 59: Economic activity among men and women, above/ below the SPA by QoL score (CASP-19) (%), (England), 2010



Below-the-SPA, Men: X^2=22.108, df=1, p<0.001 (weighted), (unweighted N=1,739, econ active=1,215, econ inactive=524)

Below-the-SPA, Women: X^2=18.833, df=1, p<0.001 (weighted), (unweighted N=1,310, econ active=959, econ inactive=351)

Above-the-SPA, Men: X^2=6.153, df=1, p>0.01 (weighted), (unweighted N=1,247, econ active=189, econ inactive=1,058)

Above-the-SPA, Women: X^2=19.727, df=1, p<0.001 (weighted), (unweighted N=2,420, econ active=440, econ inactive=1,980)

All Respondents (50-74 years-old) X^2=36.565, df=1, p<0.001 (weighted), (unweighted N=6,716, econ active=2,803, econ inactive=3,913)

For detailed N values and weighted percentages, refer to Appendix 22

Source: Author's analysis, ELSA 2010.

Figure 59 shows that the patterns in the QoL scores among women and men (aged above/ below the SPA), were similar when comparing their economically active/ inactive percentages. There appears to be a difference in the reporting trends of men and women who are aged above the SPA (as was also the case among the variables of SRGH and LLSI), whereby older adults surprisingly reported higher QoL compared to the individuals who are below the SPA with the same economic status and gender. Reports of 'high QoL' were consistently higher among men (55%), than women (51%), among individuals who are below the SPA, but higher among women (56%), than men (54%), when looking at people who are above the SPA. The chi-square results suggest that *the association between CASP-19 and economic activity was not statistically significant among men who are above the SPA. However, for all other individuals (above the SPA women, below the SPA men and below the SPA women), the results were statistically significant, suggesting that there is an association between these variables*.

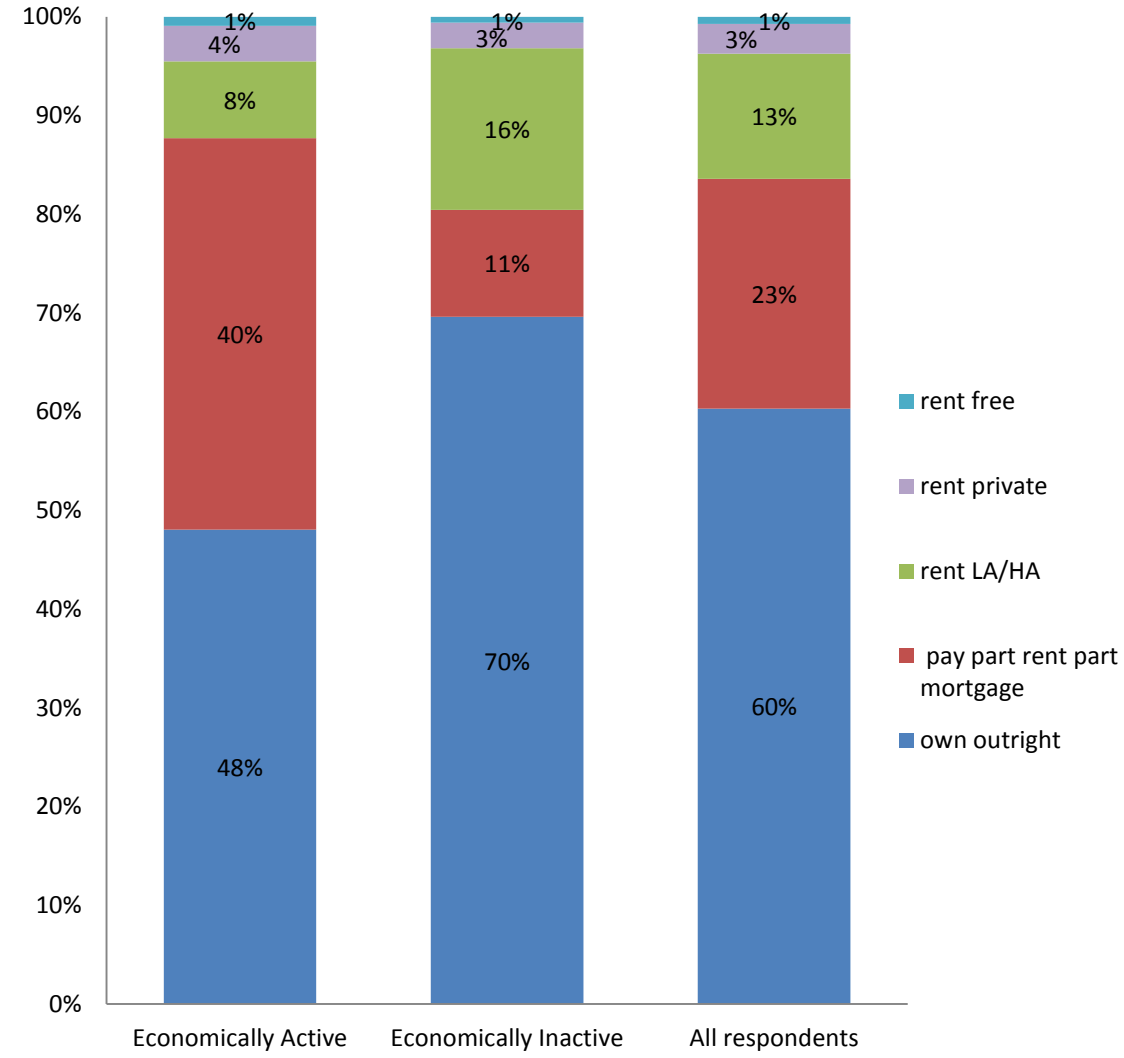
4.4 The association between economic activity in later life and socio-economic characteristics

The third set of variables explored by the bivariate analysis of this research, were socio-economic characteristics. Of the variables included by this research, socio-economic factors were the most complicated and conflicting in terms of their associations with economic outcomes, thus this analysis provided the researcher with some clarification.

4.4.1 The association between economic activity in later life and housing tenure

The literature has identified housing tenure as a useful indicator of a person's income and wealth (Wedderburn, 1965;Macintyre et al., 1998;Leonesio et al., 2012;Skopek et al., 2012). Housing tenure has also been suggested to be a significant factor associated with economic outcomes (Dalstra et al., 2006). To understand the relationship between housing tenure and economic activity in later life, it is useful to look towards Figure 60.

Figure 60: Economic activity among individuals aged 50-74 years old by housing tenure (%), (England), 2010



X^2=798.680, df=4, p<0.001 (weighted), (unweighted N=7,361, econ active=3,055, econ inactive=4,306)

Note: LA/ HA=Local Authority/ Housing Association

For detailed N values and weighted percentages, refer to Appendix 23

Source: Author's analysis, ELSA 2010.

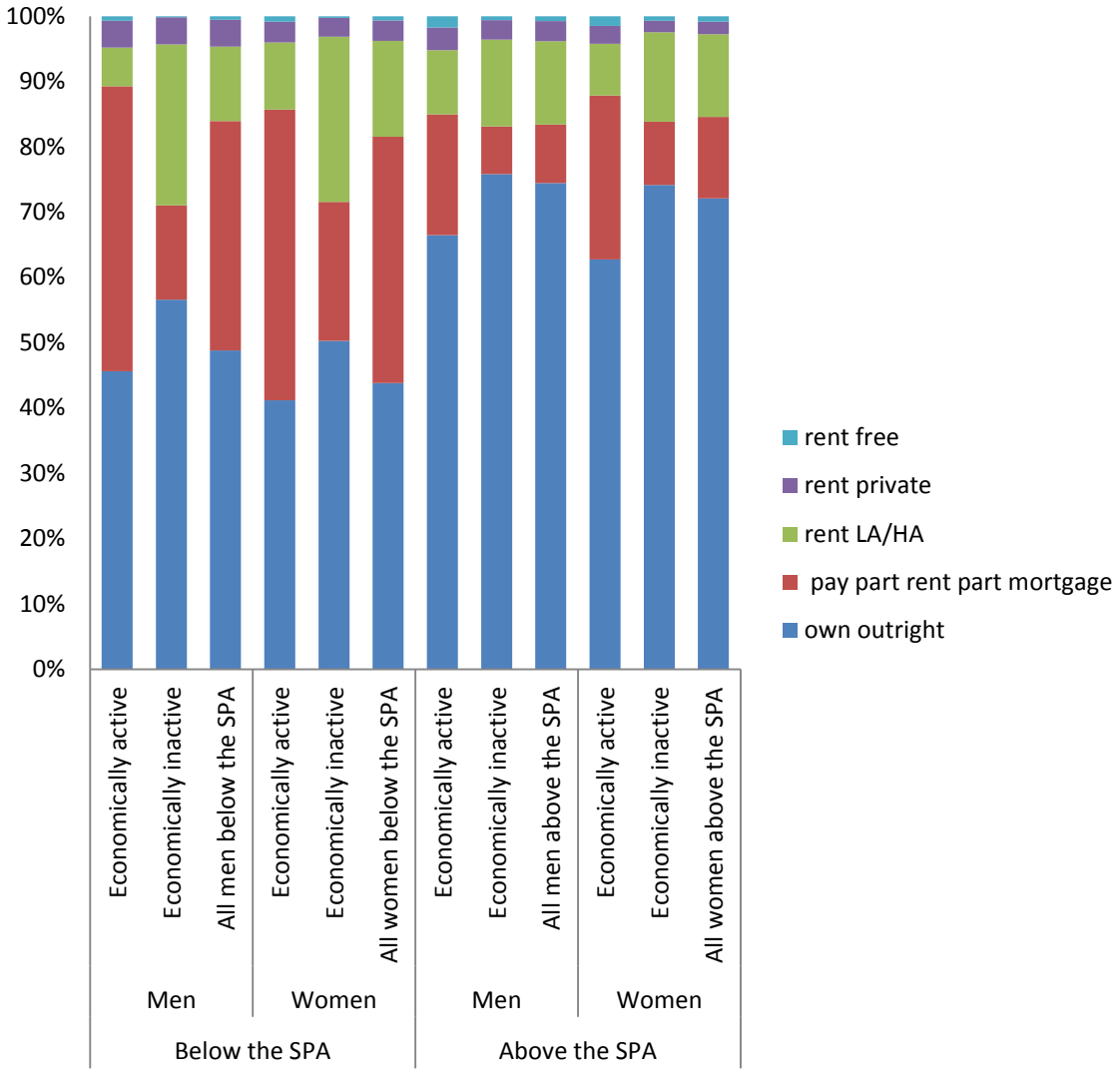
Figure 60, demonstrates that among persons who are economically inactive, reports of owning one's own house outright, or, renting through the LA/HA, are more common than that of persons who are economically active. Economically active individuals show a greater percentage of reports to rent privately, or, to be paying part-rent and part-mortgage. Renting privately or paying towards a mortgage would suggest that a person requires an inflow of money (James and Sharpe, 2007). The difference between persons who rent privately and those who rent through the LA/HA, is that LA/HA renters often rely on benefits or financial support from the state (Forrest and Murie,

1983;Dietz and Haurin, 2003;Palmer, 2014b). Persons who rent privately, or who are in an arrangement of paying part-rent and part-mortgage instead, are more commonly dependent on themselves (James and Sharpe, 2007), which may suggest that they need an income, and may explain why they are more often economically active (Grundy and Glaser, 1997). *The association between housing tenure and economic activity was statistically significant among individuals who are 50-74 years old.*

4.4.1.1 The association between economic activity in later life and housing tenure among men and women

To explore the association between housing tenure and economic activity in more depth, and to further understand how factors such as SPA and gender may influence these associations, see Figure 61.

Figure 61: Economic activity among men and women, above/ below the SPA, by housing tenure (%), England, 2010



Below-the-SPA, Men: X^2 =237.807, df=4, p<0.001 (weighted), (unweighted N=1,927, econ active=1,334, econ inactive=593)

Below-the-SPA, Women: X^2 =78.943, df=1, p<0.001(weighted), (unweighted N=1,428, econ active=1,035, econ inactive=393)

Above-the-SPA, Men: X^2 =26.350, df=4, p<0.001(weighted), (unweighted N=1,367, econ active=206, econ inactive=1,161)

Above-the-SPA, Women: X^2 =81.132, df=4, p<0.001(weighted), (unweighted N=2,639, econ active=480, econ inactive=2,159)

All Respondents (50-74 years-old): X^2 =801.180, df=1, p<0.001 (weighted), (unweighted N=7,361, econ active=3,055, econ inactive=4,306)

Note: LA/ HA=Local Authority/ Housing Association

For detailed N values and weighted percentages, refer to Appendix 24

Source: Author's analysis, ELSA 2010.

Figure 61 presents the data once more, but adds the dimensions of gender and age. A striking finding of this figure relates to house-ownership, which appears to be more common among those who are above the SPA. Literature

and theories such as the Cumulative Advantage-Disadvantage principle, suggest that over the life-course individuals accumulate assets, which in this instance, would be housing tenure. Indeed, it is evident that the reports of individuals who pay part-rent and part-mortgage decline among individuals who are above the SPA, further supporting this assumption. Consistently, the percentage of men reporting to be homeowners outnumbers the percentage of women reporting this tenure type. Furthermore, women appear to be more likely to pay part-rent and part-mortgage than their male counterparts. These findings suggest that there is a gender difference.

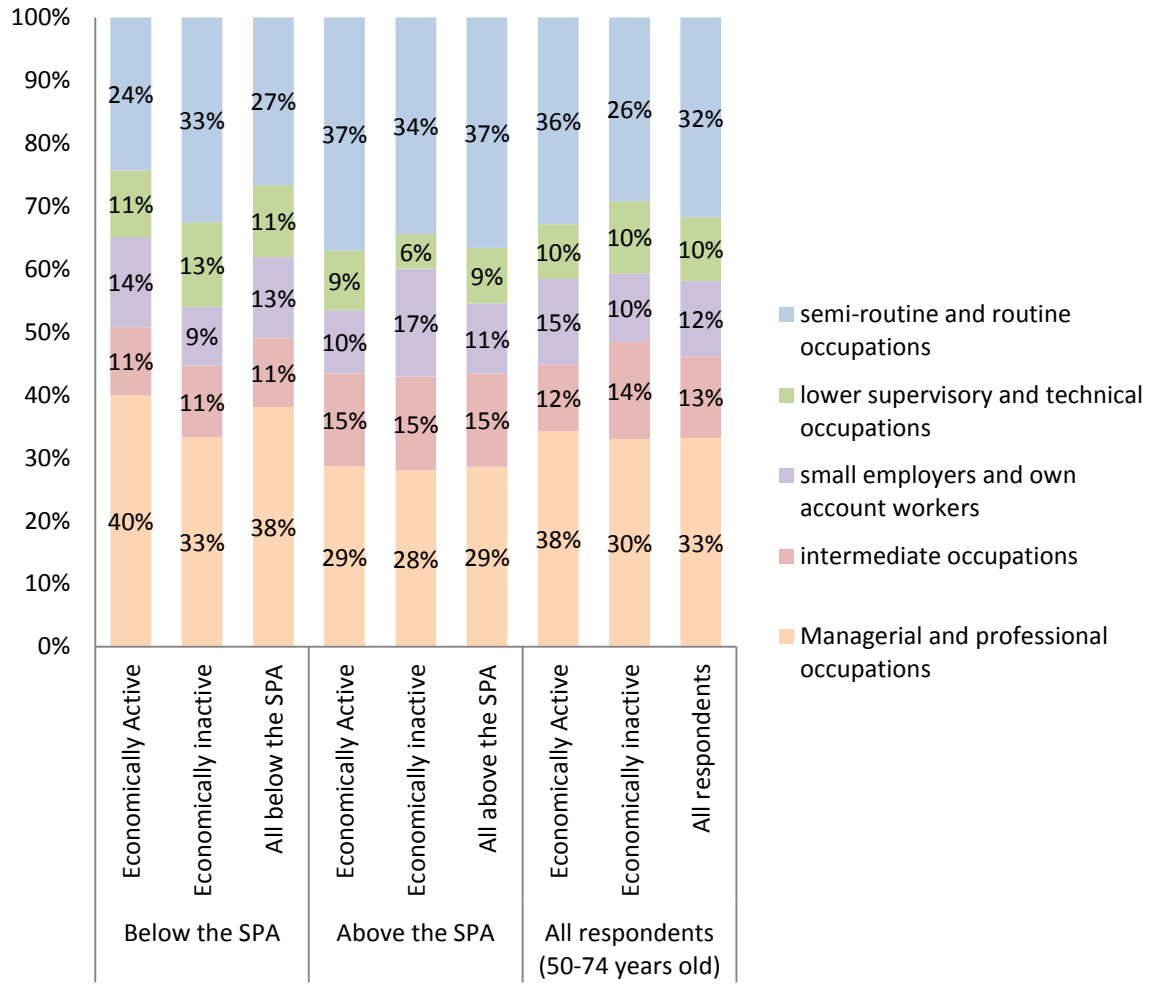
The chi-square results of this figure suggest indeed *there is a significant association between economic activity and housing tenure among men and women who are above/ below the SPA.*

4.4.2 The association between economic activity in later life and occupational social class

Another good indicator of social status can be derived from identifying an individual's most recent occupational social class (Greater London Authority, 2013;ONS, 2013c). In light of this, the present research included this variable in its analysis, in order to explore its association with economic outcomes. Examining the results in Figure 62, more findings that are interesting are noted.[31]

[31] For this variable, economically inactive individuals were categorised into an occupational social class based on their most recent occupation, whereas for economically active individuals this classification was based on their present occupation (see section 3.5.1.1.2.3, Occupational Social Class/ The National Statistics Socio-Economic Classification (NS-SEC), for coding details of this variable)).

Figure 62: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by occupational social class (%), (England), 2010



Below-the-SPA: X^2= 40.615, df= 4, p<0.001 (weighted), (unweighted N=334, econ active=2,367, econ inactive=937)
Above-the-SPA: X^2= 31.086, df= 4, p<0.001 (weighted), (unweighted N=3,974, econ active=688, econ inactive=3,276)
All Respondents (50-74 years-old): X^2= 116.633, df= 4, p<0.001(weighted), (unweighted N=7,268, econ active=3,055, econ inactive=4,213)
For detailed N values and weighted percentages, refer to Appendix 25
Source: Author's analysis, ELSA 2010.

Evidently, Figure 62 illustrates that among economically active and inactive individuals who are above/ below the SPA, 'semi-routine and routine occupations' and 'managerial and professional occupations' are the most commonly reported occupational social classes. These interestingly are also the lowest and highest values.

It was evident that persons who are above the SPA report more accounts of 'semi-routine/routine' roles and 'intermediate occupations' than individuals

who are instead below the SPA. Conversely, individuals who are below the SPA report higher percentages of 'managerial' and 'lower supervisory/ technical' occupations than individuals who are instead above the SPA. Additionally, a higher percentage of economically active persons report to be in 'managerial roles', while economically inactive individuals report their last occupation to have been an 'intermediate' role.

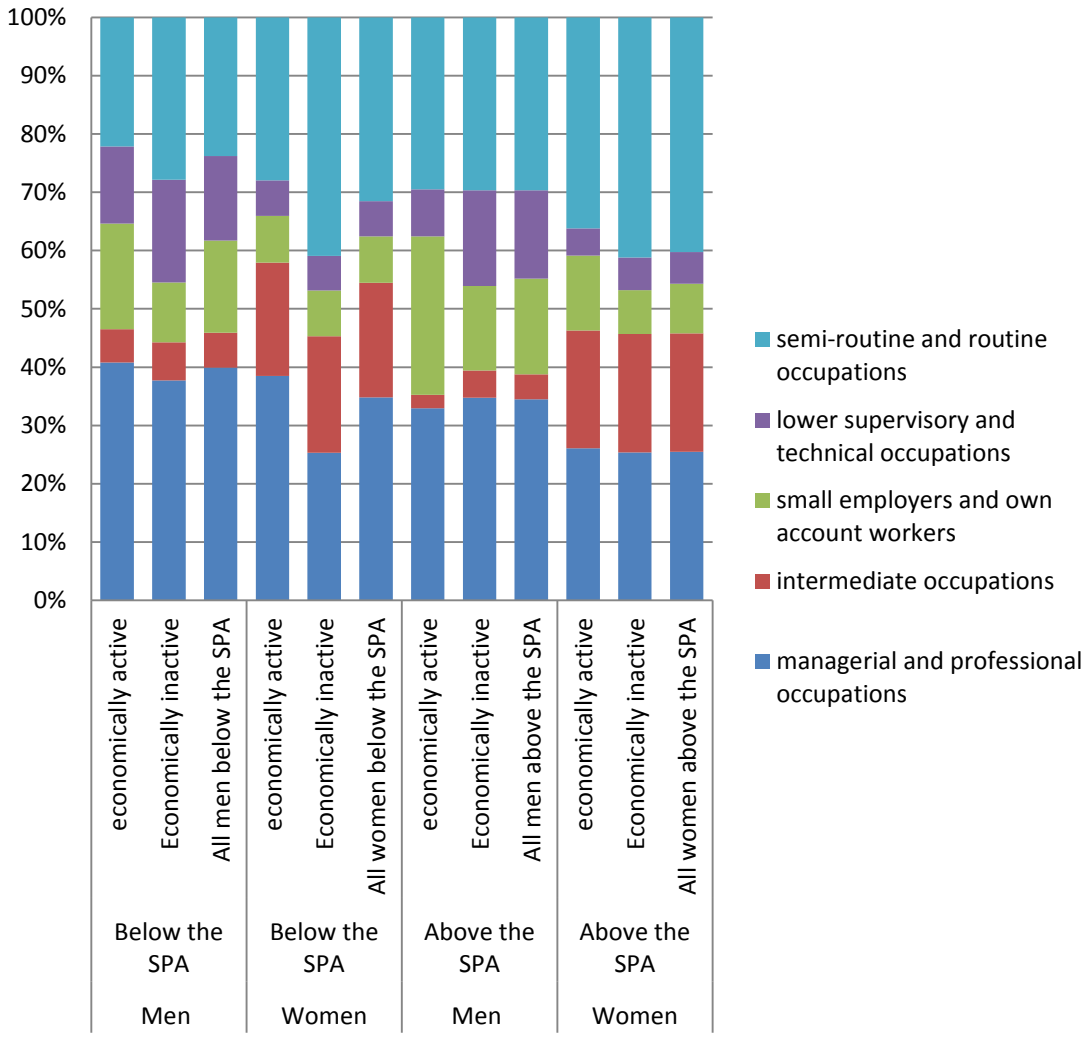
This figure helps to compare the occupational social class of individuals who are 'above the SPA and economically active' (who have extended their working lives), to that of individuals 'below the SPA and economically inactive' (who have exited the labour market early). It was striking to note that among persons who are above the SPA and economically active, a greater proportion reported 'semi-routine and routine' roles, while among individuals who are below the SPA and economically inactive, a greater proportion reported 'managerial and professional' roles. This finding may suggest that persons who are in managerial and professional roles are at an increased risk for leaving the labour market early, while persons in semi-routine and routine appear the most likely to extend their working lives.

The chi-square results relating to this figure confirm there is a statistically significant association between an individual's most recent occupational social class and economic activity outcome.

4.4.2.1 The association between economic activity in later life and occupational social class among men and women

Throughout the literature, research suggests that there are distinct differences in the type of occupational social class reported by men and women (Slack and Jensen, 2008;Europa.eu., 2011;Lee and Tang, 2013). This present research explores this association using a cross-tabulation and a chi-square test. See Figure 63 for the findings.

Figure 63: Economic activity among men and women aged above/ below the SPA by occupational social class (%), (England), 2010



Below-the-SPA, Men: X^2=28.246, df=4, p<0.001(weighted), (unweighted N=1,913, econ active=1,337, econ inactive=576)

Below-the-SPA, Women: X^2=23.924, df=4, p<0.001(weighted), (unweighted N=1,391, econ active=1,030, econ inactive=361)

Above-the-SPA, Men: X^2=23.189, df=4, p<0.001 (weighted), (unweighted N=1,349, econ active=206, econ inactive=1,143)

Above-the-SPA, Women: X^2=13.616, df=4, p<0.01(weighted), (unweighted N=2,615, econ active=482, econ inactive=2,133)

All Respondents (50-74 years-old): X^2=117.359, df=4, p<0.001(weighted), (unweighted N=7,268, econ active=3,055, econ inactive=4,213)

For detailed N values and weighted percentages, refer to Appendix 26

Source: Author's analysis, ELSA 2010.

Figure 63 confirms that men and women tend to report different occupational social classes. Regardless of economic activity status, men are more likely than women to report a status of 'small employers and own account workers', whereas women are more likely to report to work in/ to have worked in

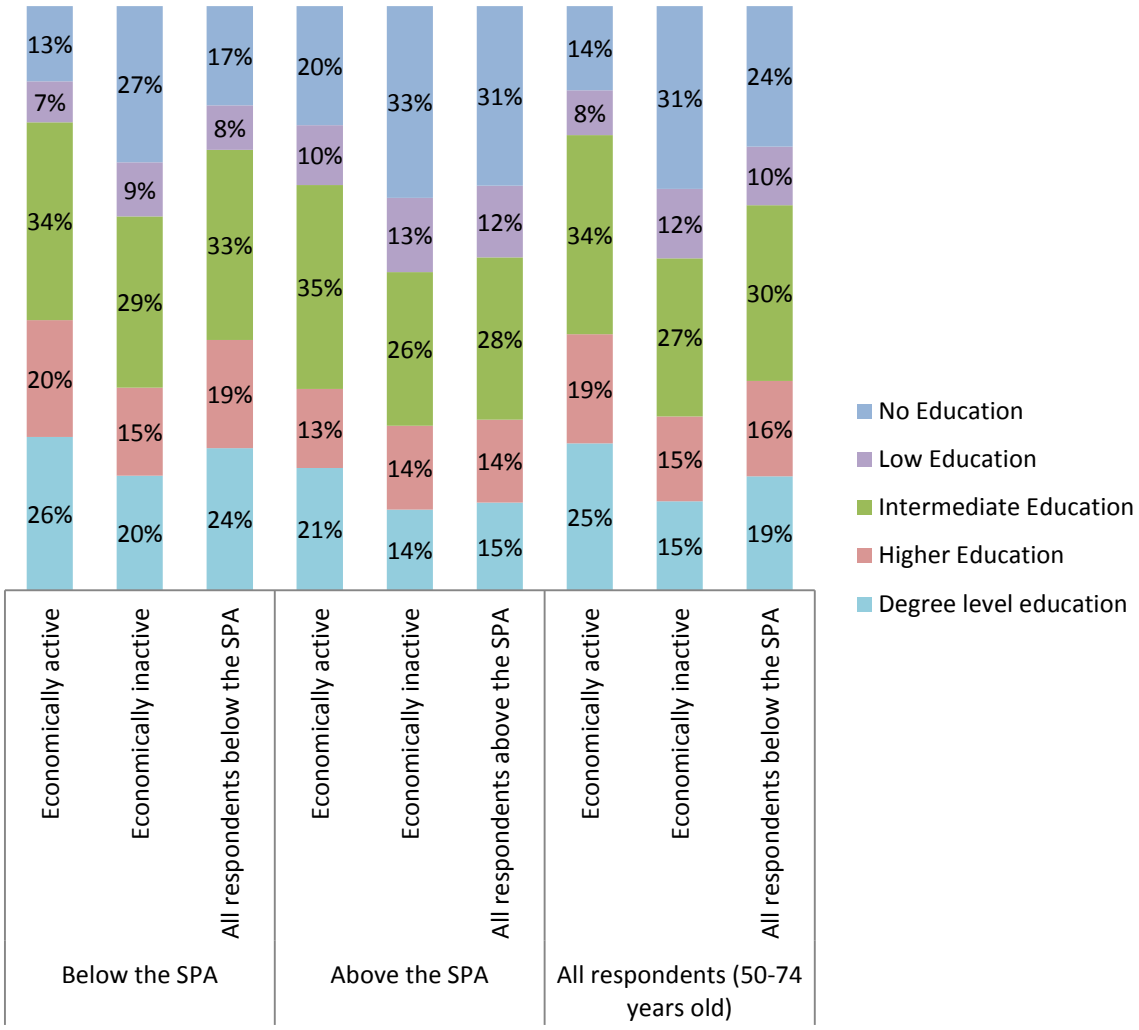
'intermediate occupations'. Among men and women, economically inactive individuals report a lower percentage of having been 'small employers and own account workers' compared to individuals who are instead economically active in these roles. Among individuals who are above/ below the SPA, regardless of their economic activity status, men report the highest percentages for having worked/working in 'managerial and professional occupations', whereas women report the highest percentages for having worked/ working in 'semi-routine and routine' occupations.

The chi-square results suggest that economic activity and occupational social class continue to be statistically significant when also controlling for whether a person is above/ below the SPA and their gender.

4.4.3 The association between economic activity in later life and highest educational qualification

The next socio-economic variable considered by this research, related to respondent's highest educational qualification and its association with economic activity among older adults. Research suggests that education has links to extensions in the working lives (Ross and Wu, 1995;Dalstra et al., 2006;James and Sharpe, 2007;Griliches and Mason, 2010;ONS, 2011b). To assess whether higher educational qualifications lead to economic activity in later life, a cross-tabulation and chi-square test were used (Figure 64).

Figure 64: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by highest educational qualification (%), (England), 2010



Below-the-SPA: X^2=104.281, df=4, p<0.001(weighted), (unweighted N=3,358, econ active=2,373, econ inactive=985)

Above-the-SPA: X^2=56.059, df=4, p<0.001 (weighted), (unweighted N=4,016, econ active=687, econ inactive=3,329)

All Respondents (50-74 years-old): X^2=344.689, df=4, p<0.001 (weighted), (unweighted N=7,374, econ active=3,060, econ inactive=4,314)

For detailed N values and weighted percentages, refer Appendix 27

Source: Author's analysis, ELSA 2010.

Evidently, Figure 64 shows that persons who are economically inactive, regardless of whether they are above/ below the SPA, report higher percentages for having 'no education'. By contrast, persons who are economically active, regardless of whether they are above/ below the SPA, report higher percentages of their highest education to be 'degree level'. This

suggests that a higher level of education is associated with economic activity among persons who are above/below the SPA and aged between 50-74 years old, supporting suggestions of the literature (Ross and Wu, 1995;Dalstra et al., 2006;James and Sharpe, 2007;Griliches and Mason, 2010;ONS, 2011b).

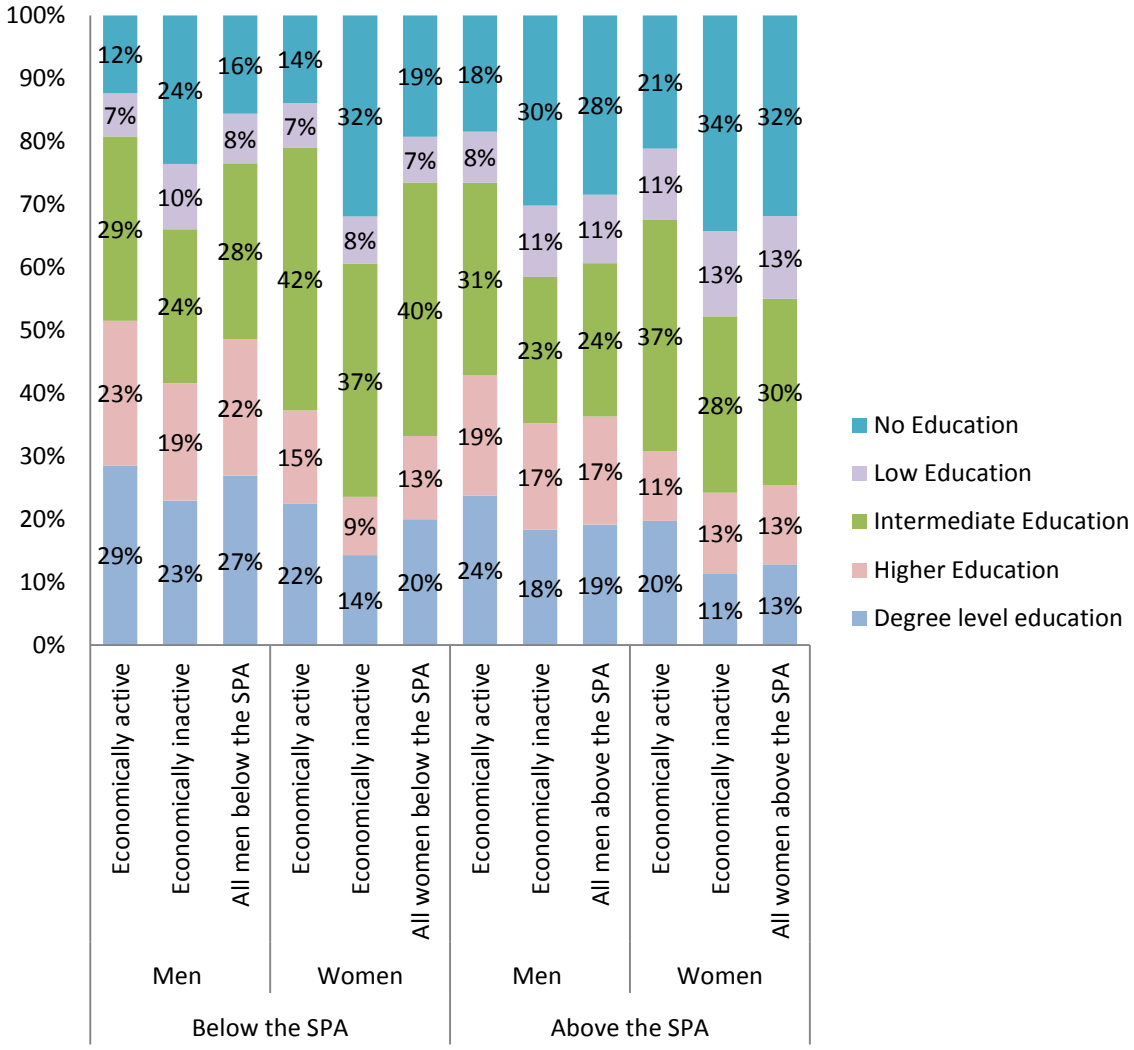
The evidence shows that persons who are below the SPA report higher percentages of being educated to degree level, higher education or intermediate level, whereas respondents who are above the SPA report more accounts of being educated at a 'low level' or not having any education at all. These trends continued regardless of respondent's economic activity outcome.

These results confirm there is a statistically significant association between a person's education level and their economic outcomes in later life.

4.4.3.1 The association between economic activity in later life and highest educational qualification among men and women

Examining gender differences in the association between one's highest level of education and economic activity, it was apparent that women less frequently are educated to degree level and higher education levels compared to male counterparts, while men less frequently report having no education. This finding supports literature which suggests that women aged above the SPA are likely to be less well-educated than their male counterparts (See Figure 65) (McKay and Middleton, 1998;Griliches and Mason, 2010). No other striking differences were found. The chi-square test results continue to suggest that there is an association between economic activity and a person's highest level of education (men and women, above/ below the SPA). *The results were all statistically significant, suggesting that there is an association between economic outcomes and the highest level of education a person has attained.*

Figure 65: Economic activity among men and women aged above/ below the SPA by highest educational qualification (%), (England), 2010



Below-the-SPA, Men: X^2=51.325, df=4, p<0.001 (weighted), (unweighted N=1,925, econ active=1,336, econ inactive=589)

Below-the-SPA, Women: X^2=57.765, df=4, p<0.001 (weighted), (unweighted N=1,433, econ active=1,037, econ inactive=396)

Above-the-SPA, Men: X^2=14.512, df=4, p<0.01 (weighted), (unweighted N=1,371, econ active=206, econ inactive=1,165)

Above-the-SPA, Women: X^2=46.840, df=4, p<0.001(weighted), (unweighted N=2,645, econ active=481, econ inactive=2,164)

All Respondents (50-74 years-old) X^2=343.418, df=4, p<0.001(weighted), (unweighted N=7,374, econ active=3,060, econ inactive=4,314)

For detailed N values and weighted percentages, refer to Appendix 28

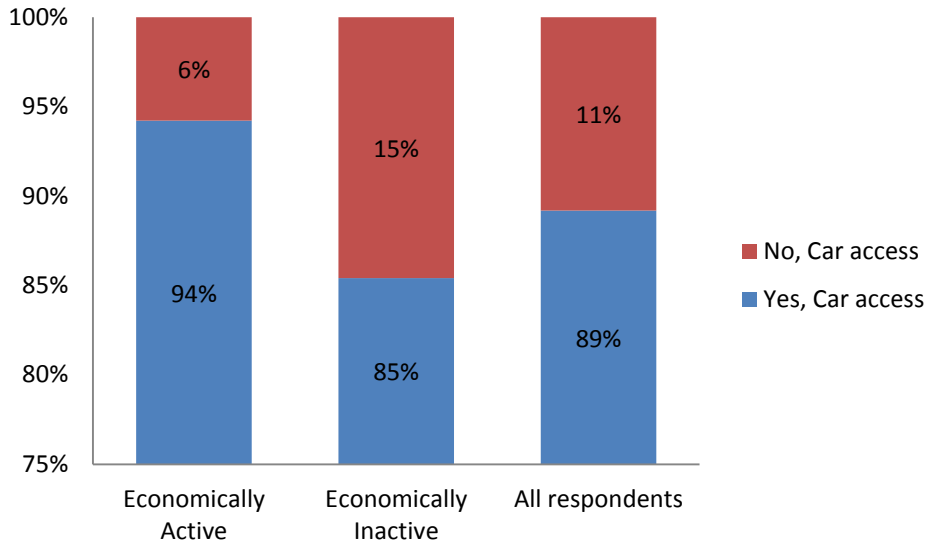
Source: Author's analysis, ELSA 2010.

4.4.4 The association between economic activity in later life and car access

A fourth socio-economic variable considered by this research, was car access. Research has commonly found that car access improves an individual's mobility (Filakti and Fox, 1995;Macintyre et al., 1998;Macintyre et al., 2001). Additionally, links to economic activity have also been found, whereby respondents who have access to a car, tend to have improved health, possibly as a consequence of having access to services, and thus these persons may be more likely to be able to extend their working life (Filakti and Fox, 1995;Macintyre et al., 2001). There is also evidence to suggest that car access can be a sign of a person's social status and wealth (Filakti and Fox, 1995;Macintyre et al., 2001).

Figure 66 explores the association between economic activity and car access.

Figure 66: Economic activity among individuals (aged 50-74 years old) by car access status (%), (England), 2010



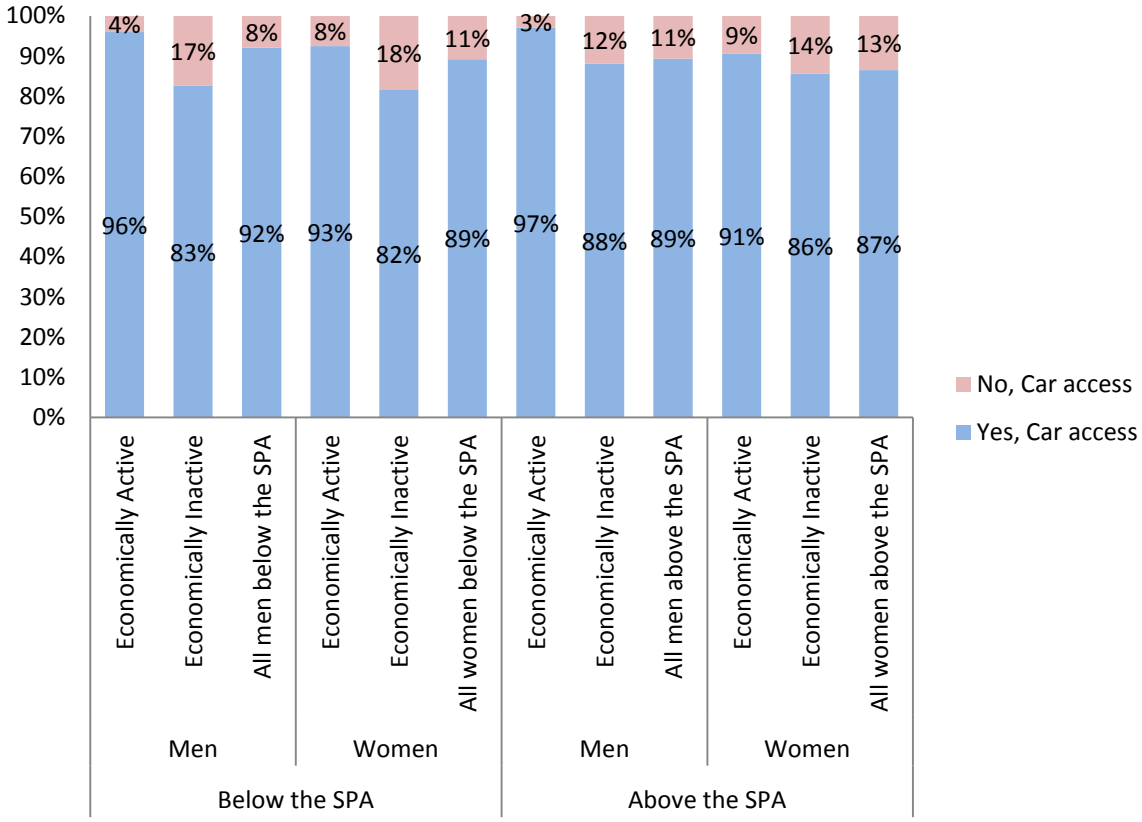
X^2= 129.765, df= 1, p<0.001 (weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)
For detailed N values and weighted percentages, refer to Appendix 29
Source: Author's analysis, ELSA 2010.

Figure 66 shows that economically active persons tend to report higher percentages of having car access than inactive individuals. *This result was*

statistically significant, suggesting that these two variables are indeed associated.

To explore this association further, while considering the influence of whether a respondent was above/ below the SPA and their gender, see Figure 67.

Figure 67: Economic activity among men and women who are above/ below the SPA by car access (%), (England), 2010



Below-the-SPA, Men: X^2=100.570, df=1, p<0.001 (weighted), (unweighted N=1,937, econ active=1,340, econ inactive=597)

Below-the-SPA, Women: X^2=31.454, df=1, p<0.001 (weighted), (unweighted N=1,439, econ active=1,039, econ inactive=400)

Above-the-SPA, Men: X^2=12.603, df=1, p<0.01(weighted), (unweighted N=1,375, econ active=206, econ inactive=1,169)

Above-the-SPA, Women: X^2=7.191, df=1, p<0.01(weighted), (unweighted N=2,653, econ active=483, econ inactive=2,170)

All Respondents (50-74 years-old) X^2=130.844, df=1, p<0.001(weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)

For detailed N values and weighted percentages, refer to Appendix 30

Source: Author's analysis, ELSA 2010.

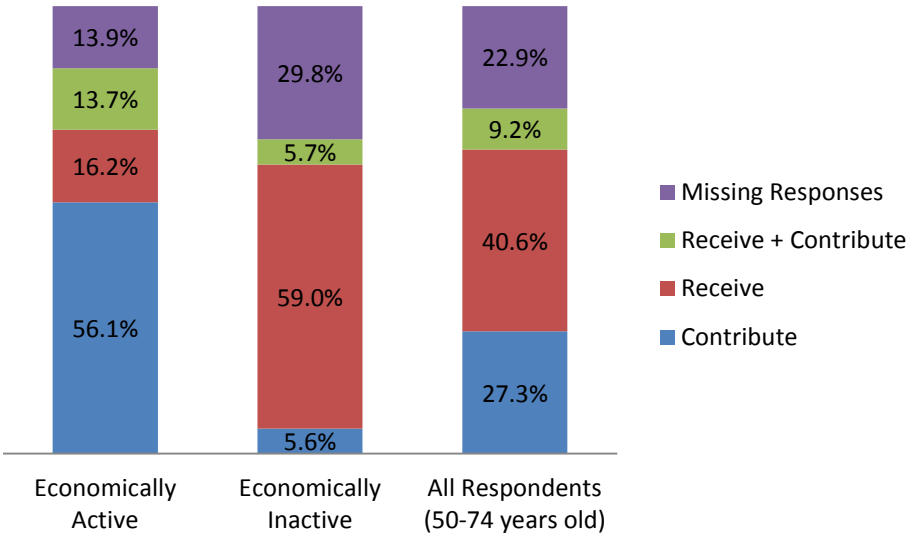
Exploring the data of Figure 67, it is evident that persons who report to be economically active (regardless of their gender and whether they are above/ below the SPA) report higher percentages of having car access. An interesting

observation of the data, was that men who report to be above the SPA and economically active, reported the highest percentage of car access. In fact, men showed their access to a car, always exceeded the reports of women. Persons least likely to report having a car were women below the SPA who were economically inactive. The differences in car access were most diverse among individuals who were below the SPA. Individuals who were above the SPA showed relatively consistent trends in reports of car access and lack of car access; with the exception of the particularly high rates of car access among economically active men. *The chi-square results found that the results were statistically significant suggesting that among men and women who are above/ below the SPA, there is an association between car/van access and a person's economic activity outcome.*

4.4.5 The association between economic activity in later life and pension scheme membership

The final socio-economic variable considered by this research was pension scheme membership. Literature suggests that there is a strong association between pension scheme membership and economic activity outcomes. Many existing studies have found that contributions to a pension scheme are associated with economic activity, while receipt of a pension is more common among individuals who are economically inactive (Banks et al., 2007;Banks and Tetlow, 2008). To further our understanding of this association, it is useful to look towards Figure 68.

Figure 68: Pension scheme membership status among individuals aged 50-74 years old, by economic activity (%), (England), 2010



X^2=2525.746, df=3, p<0.001 (weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)
For detailed N values and weighted percentages, refer to Appendix 31.
Source: Author's analysis, ELSA 2010.

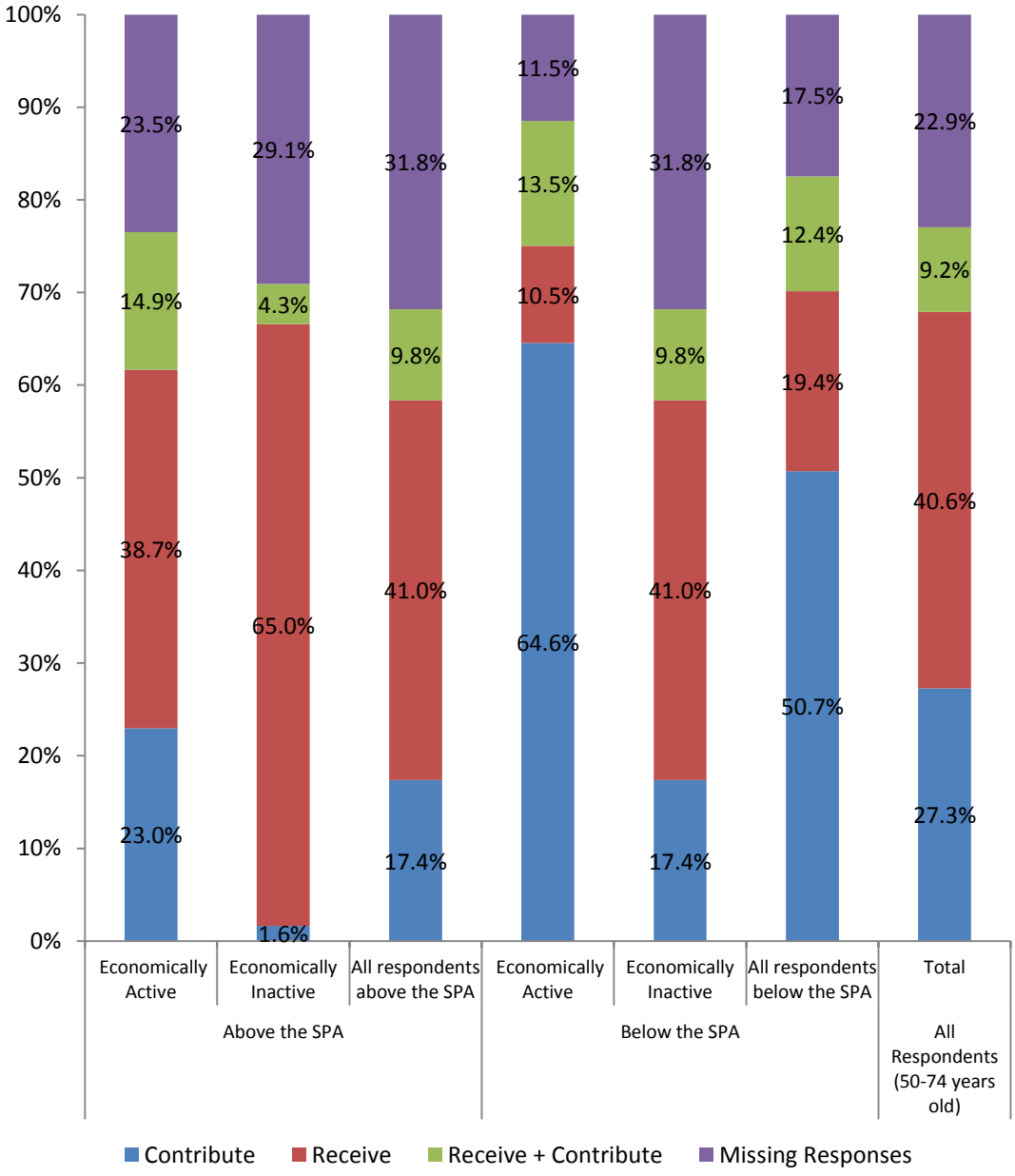
Figure 68 demonstrates that among persons who are economically active, 56% contributed to a pension and almost 14% both contributed and received a pension. By contrast, among economically inactive individuals, less than 6% contributed to a pension and a similar proportion both contributed to and received a pension. However, almost 59% of this group received a pension compared to 16% of the economically active group. Additionally, a higher percentage of missing responses were identified among individuals who are economically active (which may include individuals who are neither receiving nor contributing to a pension scheme). Interestingly, among individuals who contribute to a pension in some way (contribute only, or receive and contribute), a higher percentage of individuals are economically active, while among individuals who solely receive a pension, a higher percentage are economically inactive (refer to Appendix 32A and Appendix 32B).

Notably, it is important to remind ourselves of the heterogeneity of the dependent variables' categories, and to reflect on the influence this may have had upon the results. Individuals who comprise the economically active

sample in particular, are likely to have had their differences of pension scheme membership trends concealed through being combined into a single sample. Existing research has suggested that unemployed and self-employed individuals are less likely to have the option to be part of such schemes (D'Arcy, 2015). However, due to this category comprising only a small percentage of the overall economically active sample (see Table 8 for full details), these differences are less likely to be reflected in the results; perhaps masked by the effect employment has in terms of pension scheme membership status due to it comprising a larger percentage of this sample. *A statistically significant association was identified between pension scheme membership and economic activity among individuals who are aged between 50 and 74 years old.*

According to existing literature, pension receipt coincides with reaching the SPA, when individuals can no longer accrue any further entitlements to state pensions through paying National Insurance contributions (Phillipson and Smith, 2006;Banks and Tetlow, 2008;O'Sullivan and Layte, 2011). To explore the influence of the SPA further, it is interesting to look at the results presented by Figure 69.

Figure 69: Pension scheme membership status among individuals (above/ below the SPA) by economic activity (%), (England), 2010



Below the SPA: X^2 =771.017, df=3, p<0.001 (weighted), (unweighted N=3,376, econ active=2,379, econ inactive=997)
Above the SPA: X^2 =561.837, df=3, p<0.001 (weighted), (unweighted N=4,028, econ active=689, econ inactive=3,339)
All Respondents (50-74 years old): X^2 =3126.566, df=9, p<0.001, (unweighted N=7,404, econ active=3,068, econ inactive=4,336)
For detailed N values and weighted percentages, refer to Appendix 33.
Source: Author's analysis, ELSA 2010.

Figure 69 echoes the findings of Figure 68 whereby among persons who are economically active, reports of contributing to a pension are highest, while among persons who are economically inactive, reports of receiving a pension

are highest. After adding the dimension of SPA status, the patterns in terms of comparing economically active and inactive individuals remained, however there did appear to be a difference in the reporting trends of individuals who were above the SPA and who were below the SPA. Among individuals who are above the SPA, a higher percentage receive a pension compared to the group who are below the SPA. While, among individuals who are below the SPA, a higher percentage of individuals contribute to a pension compared to the group who are above the SPA. These findings are in line with previous literature on the positive relationship between pension receipt and increasing age and the negative relationship between pension contributions and increasing age (Banks and Tetlow, 2008).

Notably, as a consequence of the way the ELSA collects data on this topic, the response categories of 'receive and contribute' and 'missing' were relatively ambiguous in terms of the respondents they represented, restricting the conclusions which could be drawn[32] (issues related to 'missing' category responses are touched upon further by Chapter 6). *The chi square result suggests that there is an association between pension scheme membership and economic activity among individuals who are above and below the SPA.*

To conclude, the researcher also examined the association between these two variables while also considering the effect of gender (see Appendix 34A and Appendix 34B). The patterns in the data were generally alike to previous analysis (i.e. Figure 68 and Figure 69), however, there were some gender differences. For instance, men are more likely to receive a pension than their female counterparts, while women are more likely to contribute to a pension than their male counterparts. Interestingly, the percentage of men both receiving and contributing to a pension, also exceeded that of women. Arguably, these results may reflect the types of work undertaken by this cohort of men and women. For instance, the literature review noted that men are twice as likely as women to be in higher managerial and professional roles, whereas women are more likely to be in intermediate occupations or to

[32] This ambiguity, was a consequence of these categories either including respondents who had not been asked questions relating to their pension scheme membership, or whose responses had not provided much definitive detail of their pension scheme membership status (i.e. responses falling into the original coding categories of: don't know, refused, disputed existence of a pension). See Figure 47 and Table 11 and Table 12 for full coding details.

undertake caring responsibilities; which tend to offer less protection in terms of pensions (Bajtelsmit and Bernasek, 1996;Banks et al., 2002;Hall, 2006;Clayton, 2008;ONS, 2013g). Research has also found that men are particularly responsive to financial incentives, while women are more likely to take up part-time work with fewer pension scheme membership opportunities, offering further insight into these findings (Banks and Tetlow, 2008;ONS, 2013b). The chi square results suggest that *there is a significant association between pension scheme membership and economic activity among men and women*.

4.5 The association between economic activity in later life and geographical factors

A fourth area highlighted by the literature for its association with economic outcomes, relates to geographical region (Smeaton and McKay, 2003;Young et al., 2005;Uzzoli and Szilágyi, 2009). Locational factors have been associated with economic outcomes (ONS, 2012b-a). This research will now explore this association.

4.5.1 The association between economic activity in later life and region (GOR)

This research considered the variable of region, as it can provide some indication of where a person lives, which has been suggested by previous literature to be related to opportunities for extending the working life (McKay and Middleton, 1998;Smeaton and McKay, 2003;Young et al., 2005;Uzzoli and Szilágyi, 2009). For example, the facilities and services available in that location, the pollution levels of that area, and the correlation this may have with health, among other factors, have all been suggested to be closely linked with individuals' economic outcomes and geographical region of living (McKay and Middleton, 1998;Smeaton and McKay, 2003;Young et al., 2005;Uzzoli and Szilágyi, 2009).

Evidence consistently suggests that urban areas, particularly in the South East of the UK, are more likely to offer opportunities of economic activity (McKay and Middleton, 1998;Dini, 2009;ONS, 2012a;ONS, 2012b-a). Examining the

results presented in Figure 70, the largest percentage of persons who report to be economically active was among persons from the South East, a finding which is supported by the literature (McKay and Middleton, 1998;Dini, 2009;ONS, 2012a;ONS, 2012b-a).

Figure 70: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by government office region (%), (England), 2010

X^2=21.988, df=8, p<0.005 (weighted), (unweighted N=7,371, econ active=3,052, econ inactive=4,319)
For detailed N values and weighted percentages, refer to Appendix 35.
Source: Author's analysis, ELSA 2010.

Figure 70 also reveals that the percentages attached to each region vary between economically active and inactive individuals. For instance, a higher percentage of economically inactive individuals report to be from Yorkshire and The Humber, East Midlands, West Midlands and the North East. *The chi-square test result suggests that this association between region and economic outcomes' was statistically significant to the 0.005 level.*

The researcher also examined the association between these two variables while also considering the differences of men and women. However, the chi-square results suggested that *there was no statistical significance when men and women were examined separately (Women: X^2=19.485, df=8, p>0.01; Men: X^2=11.089, df=8, p>0.01: All Respondents 50-74 years old: X^2=22.072, df=8, p>0.01).* Once more, it is important to remember that the diverse sample within the dependent variable may have influenced the results. The variable of region already has shown some small cell counts in its categories, which when gender is controlled for, further reduce. Research has demonstrated that unemployment is most prevalent in North East regions, and lowest in South West regions (Robson, 2009;ONS, 2015c;ONS, 2015b). However, with unemployed respondents comprising only 3.6% of the derived economically active sample, the capacity to detect such associations and differences is restricted (see Table 8 for all percentage details).

Furthermore, the influence of whether respondents were above/ below the SPA, was also considered by this analysis. *A statistically significant association was identified among individuals who report to be below the SPA (X^2=31.412, df=8, p<0.001)*, however *this association was not found among individuals who are above the SPA (X^2=12.195, df=8, p>0.01).*

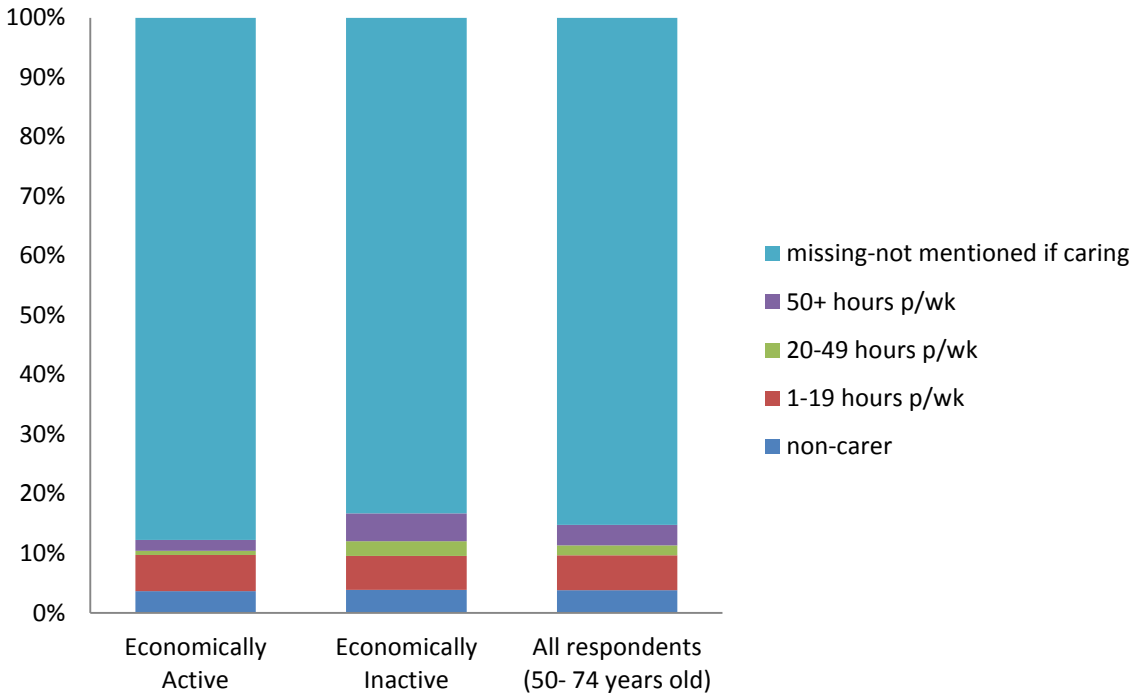
4.6 The association between economic activity in later life and caring characteristics

The final area explored by the analysis, was the association of caring status with economic outcomes, which is well established within research (Dentinger and Clarkberg, 2002;Navaie-Waliser et al., 2002;Young et al., 2005). Caregiving, of children and elders, has been associated with interruptions in individuals' careers, reduced hours spent in economic activity and health effects (Dentinger and Clarkberg, 2002;Pylkkänen and Smith, 2002). To explore the association caring status has upon economic outcomes in the context of this research, a series of further cross-tabulations and chi-square tests were used.

4.6.1 The association between economic activity in later life and caring status

Figure 71 presents the results, which explore the association between caring status and economic activity. Looking at the results, it was clear that the majority of respondents evidently had failed to provide a definite response relating to their caring status (see chapter 3, section 3.5.1.1.2.5 for details of this variables coding, and chapter 6, section 6.3 for discussion of the effects this coding had upon the results). It is evident that respondents who provide 1-19 hours of care per week represent a higher percentage among economically active individuals than economically inactive respondents. The percentages relating to providing care for '20-49 hours' and '50+ hours' per week, were higher among persons who were economically inactive, suggesting that these persons spend more time caring than persons who are instead economically active. Although more persons who are economically inactive report to be non-carers, this percentage difference is smaller than that of the percentage differences reported for the greater hours of care provided. The chi-square results suggest that *caring status and economic outcomes are associated*.

Figure 71: Economic activity among individuals (50-74 years old) by caring status (%), (England), 2010

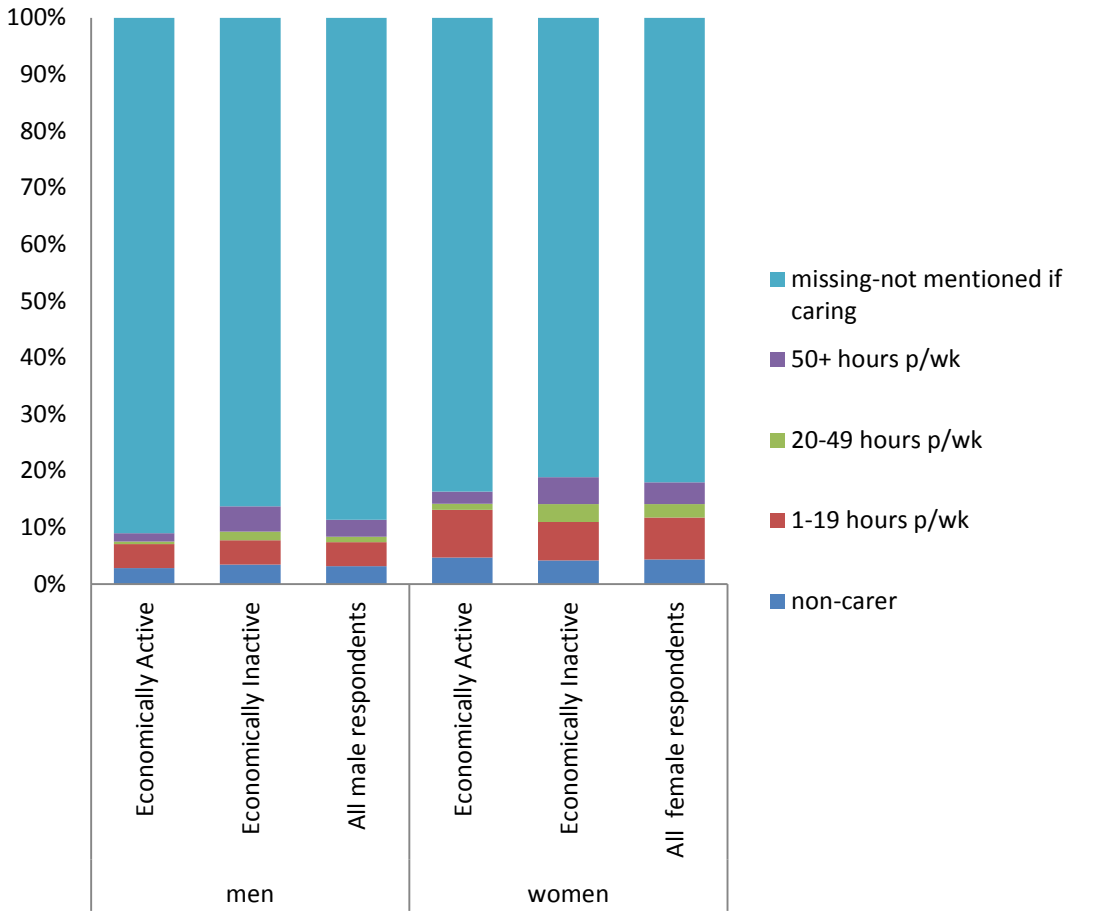


Note: p/wk=per week
X^2=72.651, df=4, p<0.001(weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)

For detailed N values and weighted percentages, refer to Appendix 36.
Source: Author's analysis, ELSA 2010.

Caring, throughout the literature is suggested to be stereotypically a female role (Evandrou et al., 2009;Sefton et al., 2011;Gilbert, 2014). To examine the influence of caring further, and to look at its association while controlling for gender, Figure 72 was created.

Figure 72: Economic activity among men and women (50-74 years old) by caring status (%), (England), 2010



Note: p/wk=per week
Men: X^2=35.530, df=4, p<0.001(weighted), (unweighted N=3,312, econ active=1,546, econ inactive=1,766)
Women: X^2=32.957, df=4, p<0.001(weighted), (unweighted N=4,092, econ active=1,522, econ inactive=2,570)
All Respondents (50-74 years-old): X^2=71.726, df=4, p<0.001(weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)

For detailed N values and weighted percentages, refer to Appendix 37.
Source: Author's analysis, ELSA 2010.

The results of Figure 72 continue to show the same patterns of Figure 71. Interestingly, there are some differences noted between the male and female respondents. Evidently, reports of being a non-carer are smaller among male respondents, whereas all of the categories which provide specific details on the hours spent providing care (1-50+ hours per week), show higher percentages of reports among women. This gender difference is further confirmed by the statistical significance of the chi-square results, which suggests that *there is an association between economic activity and caring status among men and women.*

Research has shown care-demands vary across the life span, with child and elder-care demands often being required during different periods of individual's lives, which can have differential effects upon economic outcomes. Figure 73 explores the economic outcomes of men and women, above/ below the SPA.

Figure 73: Economic activity among men and women who are above/ below the SPA, by caring status (%), (England), 2010

Note: p/wk=per week

Below-the-SPA, Men: X^2=66.973, df=4, p<0.001(weighted), (unweighted N=1,937, econ active=1,340, econ inactive=597)

Below-the-SPA, Women: X^2=52.419, df=4, p<0.001(weighted), (unweighted N=1,439, econ active=1,039, econ inactive=400)

Above-the-SPA, Men: X^2=.484, df=4, p>0.01 (weighted), (unweighted N=1,375, econ active=206, econ inactive=1,169)

Above-the-SPA, Women: X^2=12.309, df=4, p>0.01(weighted), (unweighted N=2,653, econ active=483, econ inactive=2,170)

All Respondents (50-74 years-old): X^2=72.752, df=4, p<0.001(weighted), (unweighted N=7,404, econ active=3,068, econ inactive=4,336)

For detailed N values and weighted percentages, refer to Appendix 38.

Source: Author's analysis, ELSA 2010.

The findings of Figure 73 continued to be insightful. The results show similar patterns to the two previous figures however, the group aged below the SPA, showed some slight differences to those above the SPA. The reports of caring, were particularly high among economically inactive women who were below the SPA, while particularly low among economically active men who were below the SPA. The chi-square results suggested that *there was a statistically significant association found among men and women who report to be below the SPA*.

4.7 Summary and key findings

The bivariate analysis of this chapter has been useful in exploring the relationships established in the literature review, surrounding economic activity among individuals (men and women) who are 50-74 years old (above/ below the SPA). Among the variables included within the analysis, it was evident that they all were statistically significant at some stage of the analysis. Thus, it could be said that the variables of age, gender, marital status, ethnicity, SRGH, LLSI, QoL, housing tenure, occupational social class, pension scheme membership, highest educational qualification, car access, region, and caring status were all associated with economic outcomes among individuals (50-74 years old). The analysis of this chapter went on to examine these associations while controlling for whether a respondent was above/ below the SPA, and male or female. This permitted the researcher to see whether the statistical significance of these associations remained and/ or fluctuated when the respondents were divided into particular groups of interest to the questions of this thesis (see Appendix 39 for a summary of this chapter's findings) (for details of the research questions, refer to section 1.5).

In relation to the variable of age, as previous research has also suggested, it was consistently apparent that persons who are below the SPA, more often report to be economically active compared to respondents who are above the SPA (Adams et al., 2002).

Regarding the variable of gender, the findings of this research found evidence to suggest that economic activity when below the SPA, is often higher among men, while among those who are above the SPA, economic activity is higher among women. Interestingly, this association was significant at the 0.005 level

among individuals who are above the SPA, while it was not statistically significant among individuals who are below the SPA.

With respect to marital status, the results suggest that economically inactive persons more commonly are widows, whereby being widowed is associated with being female (Wedderburn, 1965;Pai and Barrett, 2007). The results also suggested that being divorced, married and single is associated with economic activity among individuals aged 50-74 years old. Interestingly, when controlling for whether a respondent was above/ below the SPA and their gender, women appear to be among the most likely to be divorced or widowed, whereas men are more likely to be single or married. The results suggested that the association of marital status and economic activity was statistically significant among men and women aged 50-74 years old. However, these variables were not statistically significant among the results pertaining to men who are above the SPA or women who are below the SPA.

Among men and women aged 50-74 years old, the association between ethnicity and economic activity was statistically significant. This variables' statistically significant association disappeared when controlling for whether a respondent was above/ below the SPA, and their gender. Arguably, the small cell counts of this variable in relation to non-white respondents may have been responsible for these results being insignificant (chapter 6, section 6.3 revisits this notion).

The health variables revealed similar results to each other, whereby economically active individuals report higher percentages of being in better health, having a higher QoL score and not having a LLSI. Interestingly, among persons who were above the SPA, health reports seemed to improve; a finding which lends support to the ideas of 'health optimism' (see section 2.3.1) (Idler, 1993;Borawski et al., 1996;Chen et al., 2007). When men and women were examined separately there were some differences however, these were small. Evidently, women reported their health to often be better in later life, with increased reports of excellent health and QoL when above the SPA; however, women did appear to be more vulnerable to LLSI's in later life than their male counterparts. The analysis revealed that among men and women who are above/ below the SPA the health variables of SRGH and LLSI were statistically

significant, suggesting that they are associated with economic outcomes. With respect to the variable of CASP-19, statistical significance was noted among men and women who are below the SPA and women who are above the SPA. However, CASP-19 failed to show a statistically significant result among men who were above the SPA resulting in the researcher being unable to conclude that there was an association between this variable and the outcome of economic activity in relation to these individuals.

Exploring the associations of the socio-economic variables and economic activity status among individuals who are 50-74 years old (above/ below the SPA, male and female), further significant insights were found. It was noted that the intermediate categories of the socio-economic variables were often the most diverse across the outcome groups. An example of this is illustrated by the results surrounding housing tenure. The percentages of persons who were economically active and inactive reporting a tenure status of not paying for rent/ squatting were similar. However, a more pronounced difference in these percentages was noted between economically active and inactive persons in relation to the reports of renting through the LA/HA, which were far higher among inactive respondents. Instead, economically active individuals showed a larger percentage of reporting to part-rent and part-mortgage. The results of this section of the analysis, revealed that among individuals who are economically active, a larger percentage of respondents report to: part-rent and part-mortgage, report their occupational social class to be/ have been a managerial/ professional occupation, have access to a car, have an intermediate level of education and contribute to a pension scheme, compared to persons who are instead, economically inactive. Interestingly, persons who are above the SPA appear to be more likely to own their property outright, be/ or have been small employers/ own account workers, have no education, report to receive a pension and are less likely to have access to a car compared to individuals who are below the SPA. Among these results, all of the findings were statistically significant. It was however noted that the statistical significance between occupational social class and economic activity among women above the SPA; highest education and economic activity among men above the SPA; car access and economic activity among women above the SPA,

were significant to the 0.005 level, whereas all other results were significant to the 0.001 level.

In relation to the variable of region, the only result significant to the 0.001 level was found for individuals who are below the SPA (male and female, 50-74 years old). Respondents who were 50-74 years old (male and female), and men below the SPA, also found significant results (to the 0.005 level), however, all other results were not statistically significant suggesting no association between region and economic activity. The findings suggest that the South East and the East of England are associated with economic activity.

Lastly, the variable of caring status was analysed. The results found that among respondents who are above the SPA, caring status was not significant. Interestingly, in support of the literature, caring for 1-19 hours per week was more common among women, suggesting a gender difference (Evandrou and Glaser, 2003). The trends in the data reveal that increased hours spent caring appear to be associated with economic inactivity. This variable faced an issue, which left some respondents unidentified as carers/ non-carers, which could have influenced the significance of these results (section 3.5.1.1.2.5) (chapter 6 will discuss this further). For a complete illustration of chi-square test results, refer to Appendix 39.

If to understand these relationships better and to address the research questions of this thesis more holistically, further analysis is still required. Chapter 5 uses multivariate analysis (binary logistic regressions) to build upon the understandings of the relationships between variables associated with working up-to and beyond the SPA.

5. Chapter 5: Multivariate Results

5.1 Introduction

Both chapters 0 and 2 have found evidence to suggest that demographic, health, socio-economic, geographical and caring characteristics are associated with economic outcomes of later life (Adams et al., 2002;Mock and Cornelius, 2007;Gjonça et al., 2010;Stephens et al., 2011). This chapter seeks to develop our understanding of these relationships using multivariate analysis. To recap, the research questions addressed by this thesis are:

RQ1:	a) Among men and women aged over the SPA (defined as 60 for women and 65 for men) in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are over the SPA and economically inactive in 2010?
RQ2:	a) Among men and women aged between 50 years and the SPA in 2010, what factors are associated with being economically active, including demographic, health, socio-economic, geographical and caring factors?
	b) How do these characteristics compare to those of men and women who are below the SPA and economically inactive in 2010?
RQ3:	Using the results of RQ1 and RQ2, what are the most pronounced differences between persons who are economically active or inactive below and above the SPA?

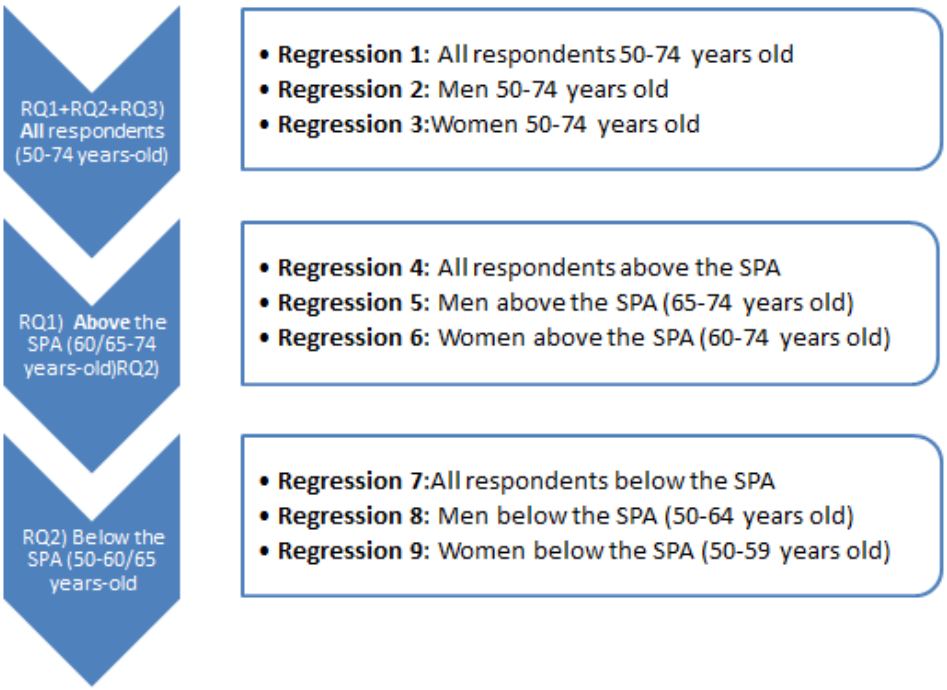
The bivariate analysis of chapter 0 has provided a preliminary insight into addressing these research questions. To enhance our understanding of individual characteristics associated with economic outcomes of later life and to contribute further towards answering the research questions of this thesis, additional detailed analysis was required. The nature of research questions 1, 2 and 3, appeal towards using multivariate analysis, as their emphasis examines associations between factors combined. Demographic, health and socio-economic factors encompass many possible variables to examine. For instance, demographic factors can include age, gender, marital status; health factors can include SRGH, reports of a LLSI, QoL (CASP-19 scores); whereas socio-economic factors can involve housing tenure, education and

occupational social class. Furthermore, variables which do not fall into these themes, such as geographical and caring-related factors are also anticipated to be associated with economic outcomes in later life, adding to the diverse array of variables for consideration by the analysis (Phillipson and Smith, 2006).

Individuals are frequently unique in the demographic, health, socio-economic, etc., characteristics they possess. This heterogeneity makes identifying individual characteristics, which influence whether a person is economically active up-to, and beyond the SPA, often very complicated. Using multivariate analysis techniques has the advantage of enabling the researcher to examine the significance and relationship of individual relationships between demographic, health, socio-economic, geographical and caring factors with the outcome variable. Previous research examined by the literature review, has revealed that factors are commonly examined independently rather than together, identifying a gap in the literature which this analysis helps to fill (Poole, 1997;Quick and Moen, 1998;Dewilde, 2012). Through reading the literature, a general sense of the most commonly identified factors associated with economic activity is grasped. This helps enhance the researchers' insight into which characteristics (independently), have assumed associations with economic outcomes up-to, and beyond the SPA and which can be assessed by multivariate analysis to examine their combined influences.

In total, the multivariate analysis of this research involved 9 separate binary logistic regressions. Each was built using the "ENTER" method (details of this methodology are discussed within section 3.5.4 and Table 17). In order to avoid multi-collinearity, earlier stages of the study conducted two correlation matrices. This ensured that none of the variables were highly correlated (see section 3.5.3.1 and Table 14). These nine regressions were split into three groups, each specifically dedicated to address the research questions of this thesis (illustrated in Figure 74).

Figure 74: Illustration of Regressions 1-9 and the sub-sample and Research question they refer to.



Source: Author's own

The research questions of this thesis include three separate groups of respondents: persons aged *50-74 years old* (RQ 1, 2 and 3), persons aged *above the SPA* (RQ 1), and persons aged *below the SPA* (RQ 2). Furthermore, each research question takes an interest in drawing comparisons between the three groups of respondents whilst exploring gender differences among and between them. This contributed to the decision of computing 9 regressions and the groupings identified in Figure 74 (see Table 17 for complete modelling strategy).

Primarily, the focus of the analysis centred upon the final model of each regression ('Model 5'). This model controlled for the full range of variables and was described as the 'model of best fit' due to its R^2 value being the largest and thus being the most appropriate to explain the variance of the variables. A sequential modelling approach was used, which allowed the researcher to test the sensitivity of models in explaining the likelihood of a person being economically active, whilst adding the sets of variables in blocks (demographic, health, socio-economic, geographical and caring) (the

modelling strategy is illustrated in Table 17). This approach permitted comparison of the findings of the preceding models (Models 1-4), enabling a richer understanding of how the variables behaved as each were introduced. Notably, the demographic variables of age and gender, varied across the 9 regressions depending on the sub-sample of interest (see Table 17's accompanying key for details of this).

This chapter is structured accordingly. To begin, the original analytical sample of all individuals aged 50-74 years old is examined (sections 5.2-5.2.1). This sample is then separated into groups of men and women, helping to establish any gender differences associated with economic activity in later life (section 5.3). Once these findings have been commented upon, the chapter adjusts the original analytical sample into two further groups: individuals who are *above the SPA* (see section 5.4), and individuals who are *below the SPA* (see section 5.6). The results are discussed in the same order as before. Notably, through dividing the original research sample into two distinct age groups, the researcher was able to examine the influence this had upon which individual characteristics associated with economic outcomes, alongside also being able to explore possible gender differences (sections 5.4-5.7.2). However, due to the large amount of information generated through analysis, only statistically significant results are discussed.

Table 20 illustrates the format of the chapter in the order of the regressions as they will be presented. Details of the samples used for each are also described.

Table 20: Regressions 1-9: details of the respondents used

Grouping of Regressions	Regression	Sample
A	1	50–74 years old, men and women
	2	50–74 years old, men
	3	50–74 years old, women
B	4	Above the SPA, men and women
	5	Above the SPA, men
	6	Above the SPA, women
C	7	Below the SPA, men and women
	8	Below the SPA, men
	9	Below the SPA, women

Grouping of Regressions=Groups into which the 9 regressions were separated

Source: Author's own.

The final part of this chapter presents three summaries, which together discuss the results of the 9 regressions in their groupings (see Table 20 'Grouping of Regressions' column) (section 5.8). The first will focus on regressions '1-3' (section 5.8.1), the second on '4-6' (section 5.8.2) and the third on '7-9' (section 5.8.3). A final summary concludes the chapter detailing key results found by this analysis (Section 5.9).

5.2 The odds of being economically active amongst persons aged between 50-74 years old, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Regressions 1-3 were designed to help answer research question 3, which was interested in examining individual characteristics associated with economic activity among individuals aged 50-74 years old.

5.2.1 The odds of being economically active among men and women aged between 50-74 years old, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 21 presents the odds ratios (OR's) of being economically active, among men and women aged 50-74 years old (Regression 1).

Table 21: Binary logistic regression 1: Odds ratios of being economically active among persons (men and women) who are aged between 50-74 years old, by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=5,797					
Above/ Below the SPA					
Below the SPA (ref)	1.000	1.000	1.000	1.000	1.000
Above the SPA	.641** (.490-.837)	.600*** (.453-.795)	.722 (.526-.991)	.715 (.520-.982)	.700 (.508-.965)
Age group (years old)					
50-54 (ref)	1.000***	1.000***	1.000***	1.000***	1.000***
55-59	.746 (.523-1.063)	.740 (.506-1.081)	.643 (.417-.991)	.655 (.423-1.013)	.644 (.412-1.005)
60-64	.225*** (.154-.329)	.202*** (.134-.303)	.361*** (.227-.575)	.368*** (.230-.587)	.356*** (.221-.573)
65-69	.062*** (.039-.099)	.054*** (.033-.090)	.151*** (.086-.265)	.154*** (.088-.271)	.144*** (.081-.255)
70-74	.021*** (.013-.036)	.019*** (.011-.033)	.067*** (.037-.123)	.068*** (.037-.125)	.062*** (.034-.115)
Gender					
Female (ref)	1.000	1.000	1.000	1.000	1.000
Male	1.782*** (1.501-2.115)	1.897*** (1.582-2.273)	1.872*** (1.512-2.318)	1.869*** (1.509-2.315)	1.758*** (1.416-2.183)
Marital Status					
Married (ref)	1.000	1.000	1.000*	1.000*	1.000
Single	.681* (.519-.893)	.790 (.593-1.052)	.885 (.629-1.244)	.879 (.625-1.237)	.843 (.598-1.188)
Divorced	.964 (.794-1.169)	1.292 (1.052-1.588)	1.485** (1.171-1.883)	1.478** (1.165-1.876)	1.440** (1.132-1.833)
Widowed	.787 (.587-1.056)	.900 (.662-1.224)	1.218 (.869-1.708)	1.210 (.861-1.698)	1.163 (.827-1.635)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.108 (.019-.608)	.128 (.023-.731)	.101 (.015-.670)	.092 (.014-.607)	.099 (.014-.690)
Black	1.563 (.605-4.041)	1.804 (.617-5.276)	1.203 (.336-4.311)	1.184 (.327-4.288)	1.130 (.316-4.044)
Black British	1.233 (.419-3.632)	.994 (.313-3.159)	1.484 (.442-4.980)	1.461 (.429-4.972)	1.287 (.377-4.400)
Asian	.848 (.387-1.855)	.785 (.338-1.822)	.470 (.169-1.313)	.473 (.165-1.356)	.491 (.159-1.512)
Asian British	1.073 (.513-2.243)	1.360 (.624-2.962)	.989 (.405-2.414)	1.001 (.410-2.448)	.913 (.370-2.254)
Any other	1.484 (.623-3.532)	1.648 (.645-4.211)	1.639 (.537-5.009)	1.563 (.511-4.774)	1.392 (.444-4.363)
SRGH					
Excellent (ref)		1.000***	1.000***	1.000***	1.000***
Fair		.611*** (.489-.763)	.771 (.600-.990)	.782 (.608-1.005)	.744 (.577-.960)
Poor		.182*** (.126-.263)	.204*** (.134-.310)	.206*** (.135-.313)	.214*** (.140-.325)

LLSI				
No LLSI (ref)	1.000***	1.000***	1.000***	1.000***
Yes LLSI	.361*** (.297-.439)	.362*** (.290-.451)	.360*** (.289-.449)	.360*** (.288-.450)
Yes long not limit	.861 (.723-1.024)	.854 (.703-1.037)	.852 (.700-1.036)	.859 (.705-1.047)
CASP-19				
High (ref)	1.000	1.000	1.000	1.000
Low	1.016 (.875-1.181)	.962 (.810-1.142)	.961 (.809-1.142)	1.002 (.842-1.193)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		2.862*** (2.352-3.482)	2.877*** (2.362-3.504)	2.951*** (2.417-3.603)
Rent LA/HA		1.081 (.805-1.450)	1.069 (.795-1.437)	1.096 (.812-1.480)
Rent privately		1.768 (1.127-2.774)	1.763 (1.124-2.766)	1.850* (1.169-2.927)
Rent free		3.145* (1.371-7.214)	3.303** (1.436-7.598)	3.227* (1.400-7.439)
Highest Education				
Degree level (ref)		1.000***	1.000***	1.000***
Higher level		.810 (.627-1.048)	.810 (.626-1.048)	.813 (.627-1.054)
Intermediate level		.860 (.682-1.086)	.858 (.679-1.084)	.865 (.683-1.096)
Low level		.577*** (.419-.795)	.579*** (.420-.798)	.565*** (.408-.781)
No qualifications		.591*** (.447-.782)	.592*** (.447-.785)	.590*** (.444-.783)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.507*** (.369-.696)	.514*** (.373-.707)	.507*** (.367-.700)
NS-SEC				
Managerial (ref)		1.000***	1.000***	1.000***
Intermediate occ		1.164 (.893-1.516)	1.170 (.898-1.525)	1.120 (.857-1.464)
Small employers		2.348*** (1.806-3.052)	2.368*** (1.820-3.082)	2.355*** (1.806-3.071)
Lower supervisory		1.030 (.761-1.394)	1.029 (.759-1.394)	1.015 (.746-1.381)
Semi-routine		1.656*** (1.322-2.075)	1.682*** (1.341-2.110)	1.651*** (1.314-2.074)
Pension Scheme Membership				
Contribute (ref)		1.000***	1.000***	1.000***
Receive		.072*** (.058-.091)	.071*** (.057-.090)	.072*** (.057-.091)

Contribute and Receive			.333*** (.254-.437)	.333*** (.254-.438)	.322*** (.244-.424)
Missing (Respondents not questioned on Pension scheme membership			.140*** (.109-.180)	.138*** (.107-.178)	.142*** (.110-.183)
Region					
London (ref)				1.000	1.000
North west				1.055 (.764-1.458)	1.071 (.773-1.484)
Yorkshire & Humber				.969 (.686-1.368)	.985 (.696-1.394)
East midlands				.663 (.464-.947)	.680 (.475-.974)
West midlands				.995 (.707-1.401)	1.037 (.734-1.466)
East of England				1.233 (.886-1.717)	1.253 (.898-1.748)
North east				.973 (.636-1.487)	.985 (.642-1.511)
South east				.972 (.711-1.328)	1.003 (.732-1.373)
South west				.875 (.624-1.226)	.891 (.635-1.252)
Caring status					
Non-carer (ref)					1.000***
1-19 hours p/wk					1.253 (.780-2.011)
20-49 hours p/wk					.438 (.202-.946)
50+ hours p/wk					.540 (.297-.981)
Missing					1.992*** (1.365-2.906)
-2LLR	5573.428	5139.703	4248.351	4233.536	4167.016
% Change -2LLR		7.782015	17.34248	0.348724	1.571263
Nagelkerke R^2	.437	.503	4248.351	.626	.634
Constant	3.650***	5.937***	12.691***	12.953***	7.777***

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables

Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010

Table 21 shows the R^2 improved as each block of variables was introduced. For example, Model 1 could explain 44% of the differences in persons' reports of economic activity (R^2= 0.437), while Model 5 could explain 64% (R^2=0.634).

Examining the final model of Regression 1 (see Table 21, Model 5), the statistically significant variables included: age group, gender, marital status, SRGH, LLSI, housing tenure, highest educational qualification, car access, occupational social class, pension scheme membership and caring status (see also Appendix 40).

In terms of demographic characteristics, the first variable identified as statistically significant was age group.[33] The results suggest that the odds of being economically active decrease with age. Evidently, individuals who are aged between 60-74 years are less likely than individuals who are 50-54 years old to be economically active (OR's: 60-64 years old=0.356; 65-69 years old=0.144; 70-74 years old=0.062). Gender also appears to be associated with economic activity in later life, whereby men's odds of being economically active are 1.7 times the odds among women. Marital status was also significant (at the 0.01 and 0.005 level), with divorcees being more likely than married individuals to be economically active (OR=1.440). Previous literature has reported that divorcees are more likely to rely on their own income whereas married persons are more likely to live in dual-earner households, supporting the regression findings (Lund et al., 2001;Szinovacz et al., 2012a).

Literature suggests that ill health is associated with a decreased likelihood of economic activity in later life (Banks et al., 2006;Banks et al., 2010). Persons reporting poor general health, or a LLSI, were less likely to be economically active than persons with excellent SRGH, or who did not report having a LLSI (OR's=0.214, 0.360 respectively). The variable CASP-19 was not statistically significant.

[33] Notably, prior to including the 'Pension Scheme Membership' variable to the model for this study, the 'SPA' variable had been statistically significant. The change in statistical significance may indicate that the effect of including the Pension Scheme Membership variable into the model, may have soaked up the effect of the SPA variable. Despite the later lack of statistical significance, the literature provides a strong body of evidence to suggest that the SPA is associated with economic outcomes. Furthermore, the current study was particularly interested by the effect of this variable, thus the researcher continued to use this variable to control the groups examined by the regressions that followed (Regressions 4-6 & 7-9).

Beginning with the socio-economic variable of housing tenure, the results revealed that among persons who part-rent and part-mortgage, rent privately and who rent for free, the odds of being economically active were 2.951, 1.850 and 3.227 times respectively those among owner-occupiers. In terms of education, among individuals with low or no qualifications, the odds of being economically active were 0.565 and 0.590 times respectively the odds among those with degree-level education. In addition, persons with car access were also shown to have a higher likelihood to be economically active in later life compared to those with no car access (OR=0.507). Occupational social class was also statistically significant, whereby among persons in the categories of small employers or semi-routine/routine occupations, the odds of being economically active were 2.355 and 1.651 times respectively the odds among those from managerial occupations. Finally, the variable which related to pension scheme membership was also statistically significant. The results suggest that among individuals who receive a pension or who both receive and contribute to a pension scheme, the odds of being economically active were 0.72 and 0.322 times respectively the odds among those who only contribute to a pension scheme. The missing category of this variable was also statistically significant, whereby persons who contribute to a pension have a higher likelihood of being economically active than individuals in the missing category. The missing category however fails to provide much detailed information on respondents, thus no other conclusions can be drawn at this stage.

The final variable included within the model found to be statistically significant, was caring status. The reference category and the missing category of this variable were the only of the categories to show a statistically significant result. Although the other categories were not statistically significant the odds of being economically active appeared to decrease as the number of hours spent providing care increased.

5.3 The relationship between demographic, health, socio-economic, geographical & caring variables with economic activity, among men and women who are aged between 50-74 years old.

Throughout the examination of literature surrounding the topic of extending working lives, men and women are identified as heterogeneous in their retirement and economic activity patterns (Johnson and Zaidi, 2007;Parry and Taylor, 2007;ONS, 2012c). The bivariate analysis has provided a preliminary understanding of the gender differences linked to economic activity and the explanatory variables of interest to this research, whereby the differences have been striking (see chapter 0 and the findings which control for gender, e.g. section 4.3.1.1). The literature on employment and gender presents two main conflicting arguments. One suggests that men often exhibit a stronger commitment to their work, complemented by their social stereotypical roles as providers, which has been argued to be a key factor which leads them to be more likely to be economically active beyond the SPA (Dentinger and Clarkberg, 2002). The second argument suggests that men often take on more physically-demanding roles which pose negative outcomes for their health (Quick and Moen, 1998;Eurofound, 2010). Combining this with men's lower life expectancy estimates, risk for exit from the labour market is anticipated to be amplified, particularly at older ages (Slack and Jensen, 2008). Although the literature presents contradictory arguments, and although men's and women's labour market patterns are often diverse, gender is consistently suggested to be significantly associated with economic outcomes (McKay and Middleton, 1998;Pienta and Hayward, 2002;Flynn, 2010).

Already, Regression 1 has shown the significant role of gender in explaining economic activity in later life (Table 21). In order to draw a clearer understanding of the gender differences among the associations of demographic, health, socio-economic, geographical and caring factors with economic outcomes among persons aged 50-74 years old, two additional binary logistic regressions were computed (Regressions 2 and 3). The following section presents the findings, which concentrated upon men (section 5.3.1).

5.3.1 The odds of being economically active among men aged between 50-74 years old, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 22 presents the results of the analysis of the regression which focused on men, aged 50-74 years old. Improvements of the R^2 as sets of characteristics were introduced, are noted. It is apparent that Model 1 can explain 43% of the differences in reporting being economically active whilst Model 5 can explain 66%.

Table 22: Binary logistic regression 2: Odds ratios of being economically active among men who are aged between 50-74 years old, by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=2,618					
Age group					
50-54 (ref)	1.000***	1.000***	1.000***	1.000***	1.000***
55-59	.821 (.489-1.379)	.922 (.531-1.600)	.806 (.422-1.538)	.846 (.440-1.627)	.782 (.399-1.534)
60-64	.248*** (.148-.413)	.248*** (.144-.427)	.454 (.239-.864)	.477 (.249-.912)	.436 (.223-.851)
65-69	.044*** (.026-.075)	.039*** (.022-.069)	.136*** (.070-.266)	.139*** (.071-.273)	.119*** (.059-.239)
70-74	.017*** (.009-.030)	.015*** (.008-.028)	.066*** (.032-.137)	.067*** (.032-.139)	.058*** (.027-.123)
Marital Status					
Married (ref)	1.000***	1.000***	1.000	1.000	1.000*
Single	.430*** (.299-.618)	.469*** (.320-.689)	.560 (.350-.896)	.567 (.354-.908)	.533* (.331-.858)
Divorced	.616** (.457-.831)	.786 (.571-1.083)	.939 (.647-1.363)	.946 (.650-1.377)	.899 (.614-1.316)
Widowed	.501 (.291-.863)	.510 (.286-.909)	.479 (.240-.958)	.462 (.230-.927)	.434 (.214-.882)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.058 (.005-.661)	.078 (.007-.918)	.056 (.003-.968)	.056 (.004-.877)	.064 (.004-1.119)
Black	2.266 (.573-8.962)	2.530 (.472-13.576)	1.919 (.323-11.394)	1.830 (.291-11.528)	1.623 (.253-10.429)
Black British	2.181 (.250-19.047)	2.233 (.180-27.686)	4.503 (.261-77.549)	3.849 (.196-75.400)	3.467 (.173-69.353)
Asian	1.683 (.525-5.396)	1.702 (.494-5.857)	.599 (.134-2.674)	.564 (.120-2.655)	.547 (.110-2.718)
Asian British	2.488 (.892-6.941)	2.466 (.847-7.175)	2.080 (.550-7.873)	1.802 (.477-6.814)	1.620 (.422-6.220)
Any other	.524 (.179-1.535)	.513 (.142-1.855)	.472 (.112-1.993)	.426 (.101-1.796)	.368 (.087-1.556)
SRGH					
Excellent (ref)		1.000***	1.000***	1.000***	1.000***
Fair		.634** (.461-.870)	.818 (.562-1.190)	.816 (.559-1.190)	.799 (.545-1.172)
Poor		.250*** (.156-.399)	.258*** (.147-.452)	.249*** (.141-.439)	.274*** (.155-.486)
LLSI					
No LLSI (ref)		1.000***	1.000***	1.000***	1.000***
Yes LLSI		.304*** (.228-.405)	.310*** (.221-.435)	.312*** (.222-.438)	.310*** (.219-.438)
Yes long not limit		.868 (.678-1.112)	.873 (.657-1.160)	.862 (.647-1.148)	.860 (.643-1.151)
CASP-19					

High (ref)	1.000	1.000	1.000	1.000
Low	1.154 (.927-1.438)	.997 (.771-1.289)	1.005 (.776-1.301)	1.055 (.812-1.372)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		3.136*** (2.338-4.208)	3.226*** (2.398-4.341)	3.321*** (2.460-4.484)
Rent LA/HA		1.017 (.644-1.607)	.994 (.627-1.576)	.999 (.626-1.593)
Rent private		1.959 (1.031-3.722)	1.921 (1.010-3.652)	2.003 (1.035-3.877)
Rent free		4.128 (1.199-14.217)	4.274 (1.229-14.859)	4.281 (1.225-14.961)
Highest Education				
Degree level (ref)		1.000**	1.000**	1.000***
Higher level		.953 (.676-1.345)	.942 (.667-1.332)	.959 (.675-1.362)
Intermediate level		1.151 (.827-1.601)	1.155 (.828-1.613)	1.175 (.839-1.647)
Low level		.482** (.296-.787)	.480** (.293-.788)	.459** (.278-.758)
No qualifications		.697 (.461-1.053)	.694 (.458-1.053)	.688 (.451-1.049)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.339*** (.196-.588)	.332*** (.190-.581)	.354*** (.201-.623)
NS-SEC				
Managerial (ref)		1.000***	1.000***	1.000***
Intermediate occ		1.135 (.682-1.889)	1.142 (.686-1.902)	1.081 (.646-1.807)
Small employers		2.937*** (2.058-4.193)	2.949*** (2.063-4.216)	2.997*** (2.089-4.300)
Lower supervisory		.841 (.572-1.236)	.877 (.594-1.293)	.889 (.599-1.318)
Semi-routine		2.298*** (1.646-3.207)	2.356*** (1.682-3.299)	2.330*** (1.658-3.273)
Pension Scheme Membership				
Contribute (ref)		1.000***	1.000***	1.000***
Receive		.061*** (.044-.085)	.062*** (.044-.087)	.062*** (.044-.087)
Contribute and Receive		.308*** (.210-.452)	.312*** (.212-.458)	.300*** (.203-.443)
Missing (Respondents not questioned on Pension scheme membership)		.160*** (.100-.254)	.159*** (.100-.254)	.157*** (.098-.252)

Region					
London (ref)				1.000	1.000
North west				.895 (.559-1.434)	.916 (.569-1.476)
Yorkshire & Humber				.657 (.393-1.096)	.676 (.403-1.132)
East midlands				.559 (.334-.935)	.570 (.338-.959)
West midlands				.841 (.507-1.395)	.881 (.527-1.470)
East of England				1.071 (.659-1.739)	1.079 (.662-1.760)
North east				.629 (.337-1.176)	.603 (.322-1.131)
South east				.722 (.454-1.147)	.762 (.478-1.216)
South west				.657 (.399-1.082)	.678 (.410-1.119)
Caring status					
Non-carer (ref)					1.000***
1-19 hours p/wk					1.113 (.503-2.463)
20-49 hours p/wk					.558 (.138-2.255)
50+ hours p/wk					.298 (.112-.788)
Missing					2.025 (1.100-3.726)
-2LLR	2722.146	2492.931	1972.68	1959.983	1923.19
% Change -2LLR		8.420379	20.86905	0.643642	1.87721
Nagelkerke R^2	.433	.505	.649	.652	.661
Constant	6.445***	9.840***	18.519***	22.41***	13.341***

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables
Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001
Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010.

Examining the final model of Regression 2 (Table 22), the statistically significant variables included: age group, marital status, SRGH, LLSI, housing tenure, highest education, occupational social class, pension scheme membership and caring status (see also Appendix 40).

Examining the significant findings of the demographic factors, it was clear that among men aged between 65-69 and 70-74 years, the odds of being economically active were 0.119 and 0.058 times respectively the odds among men aged 50-54 years old. This result supports pre-existing evidence, which reports that increasing age is associated with a reduced likelihood for economic activity (Bond et al., 2007;Banks et al., 2008a). Although the age groups of 55-59 and 60-64 years old were not statistically significant, the odds among these categories offer continued support of the existing literature on this topic (OR's=0.782 and 0.436).

Examining next the marital status variable, among single men, the odds of being economically active were 0.533 times the odds among married men.

Turning to explore the health variables, the SRGH and LLSI variables behaved in a similar way to the previous regression (Regression 1, Table 21). Evidently, individuals reporting poor SRGH or having a LLSI were less likely to be economically active than persons who reported to be in excellent SRGH or who did not report a LLSI (OR's=0.274 and 0.310 respectively). The variable CASP-19 continued to not be statistically significant.

In relation to housing tenure, the results suggested that among men who part-rent and part-mortgage, the odds of being economically active were 3.321 times the odds among owner-occupier males. The results also found that an individual's highest level of education was also a factor associated with economic outcomes. Among individuals with a low level of education, the odds of being economically active were 0.459 times among those who are educated to degree level (significant at the 0.005 level). For the variable of occupational social class, the findings suggested that lower occupational social class was associated with an increased likelihood of being economically active (OR's: small employer=2.997, semi-routine occupation=2.330). The variable of pension scheme membership was also statistically significant across all of the categories, suggesting that men who receive a pension or who both

receive from and contribute to a pension are less likely than individuals who solely contribute to a pension to be economically active (OR's: Receive= 0.062; Contribute and Receive=0.300). The category labelled as 'missing' was also statistically significant (OR=.157), however due to the diversity of this sub-group, it is difficult to draw any further conclusions.

Finally, one's caring status was also statistically significant at the reference category level. At the category levels of this variable however, no further statistical results were noted, limiting the conclusions which could be drawn (alike to the results found by Regression 1, Table 21).

In order to better understand the gender differences associated with individual characteristics of economic outcomes among individuals aged 50-74 years old, a third regression which examined women was explored (see section 5.3.2).

5.3.2 The odds of being economically active among women aged between 50-74 years old, by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 23 presents the results of the regression, which investigated the relationship of the demographic, health, socio-economic, geographical and caring variables with the outcome variable of economic activity among women aged 50-74 years old. Table 23 illustrates the individual R^2 values of each model computed, indicating their fit. Model 5 fitted best, and had the greatest ability to explain the variations in the reports of economic outcomes among the respondents.

Table 23: Binary logistic regression 3: Odds ratios of being economically active among women who are aged between 50-74 years old, by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=2,224					
Age group					
50-54 (ref)	1.000***	1.000***	1.000***	1.000***	1.000***
55-59	.624 (.382-1.018)	.536 (.315-.911)	.457 (.248-.841)	.461 (.249-.853)	.453 (.242-.850)
60-64	.119*** (.073-.195)	.087*** (.051-.148)	.182*** (.098-.336)	.185*** (.099-.344)	.174*** (.092-.329)
65-69	.031*** (.018-.053)	.023*** (.013-.041)	.072*** (.037-.138)	.074*** (.038-.143)	.067*** (.034-.132)
70-74	.009*** (.005-.017)	.007*** (.003-.014)	.025*** (.012-.054)	.025*** (.011-.054)	.022*** (.010-.049)
Marital Status					
Married (ref)	1.000***	1.000***	1.000***	1.000***	1.000***
Single	1.224 (.810-1.849)	1.553 (1.004-2.403)	1.572 (.931-2.654)	1.612 (.953-2.729)	1.583 (.936-2.676)
Divorced	1.355 (1.050-1.747)	1.892*** (1.440-2.487)	2.026*** (1.471-2.791)	1.996*** (1.447-2.753)	1.974*** (1.426-2.732)
Widowed	1.064 (.747-1.517)	1.294 (.895-1.871)	1.871** (1.252-2.796)	1.852** (1.238-2.770)	1.810** (1.208-2.713)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.533 (.032-8.834)	.417 (.017-9.942)	.378 (.007-20.520)	.396 (.007-22.587)	.343 (.006-20.595)
Black	.915 (.224-3.727)	1.267 (.283-5.671)	.767 (.121-4.855)	.889 (.136-5.809)	.900 (.144-5.642)
Black British	.793 (.220-2.853)	.632 (.163-2.445)	.840 (.197-3.583)	.970 (.220-4.269)	.861 (.195-3.807)
Asian	.404 (.134-1.213)	.309 (.097-.986)	.262 (.062-1.102)	.299 (.070-1.281)	.311 (.067-1.450)
Asian British	.289 (.079-1.057)	.526 (.137-2.017)	.468 (.120-1.828)	.544 (.139-2.139)	.510 (.129-2.017)
Any other	4.750 (1.099-20.533)	3.941 (.938-16.552)	4.544 (.909-22.709)	5.145 (.994-26.626)	4.876 (.903-26.320)
SRGH					
Excellent (ref)		1.000***	1.000***	1.000***	1.000***
Fair		.595*** (.433-.818)	.737 (.521-1.043)	.744 (.525-1.054)	.701 (.493-.998)
Poor		.105*** (.055-.203)	.121*** (.059-.245)	.122*** (.060-.248)	.120*** (.059-.245)

LLSI				
No LLSI (ref)	1.000***	1.000***	1.000***	1.000***
Yes LLSI	.405*** (.309-.530)	.389*** (.288-.525)	.386*** (.286-.522)	.382*** (.282-.518)
Yes long not limit	.824 (.643-1.055)	.801 (.609-1.054)	.800 (.608-1.054)	.804 (.609-1.062)
CASP-19				
High (ref)	1.000	1.000	1.000	1.000
Low	.911 (.739-1.123)	.904 (.712-1.147)	.904 (.712-1.148)	.932 (.732-1.187)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		2.674*** (2.040-3.507)	2.674*** (2.035-3.514)	2.756*** (2.089-3.637)
Rent LA/HA		1.095 (.740-1.619)	1.121 (.755-1.666)	1.171 (.784-1.750)
Rent private		1.521 (.776-2.982)	1.529 (.774-3.020)	1.577 (.793-3.137)
Rent free		2.607 (.748-9.085)	2.943 (.841-10.296)	2.831 (.805-9.958)
Highest Education				
Degree level (ref)		1.000	1.000	1.000
Higher level		.664 (.443-.994)	.665 (.443-.997)	.652 (.433-.980)
Intermediate level		.665 (.473-.935)	.664 (.472-.934)	.663 (.469-.937)
Low level		.614 (.396-.953)	.609 (.392-.947)	.593 (.380-.926)
No qualifications		.494*** (.333-.735)	.495*** (.332-.738)	.492*** (.329-.736)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.603 (.404-.900)	.619 (.413-.928)	.598 (.397-.900)
NS-SEC				
Managerial (ref)		1.000	1.000	1.000
Intermediate occ		1.212 (.870-1.687)	1.213 (.870-1.691)	1.153 (.824-1.613)
Small employers		1.787** (1.190-2.683)	1.797** (1.195-2.701)	1.743* (1.155-2.631)
Lower supervisory		1.633 (.976-2.732)	1.610 (.959-2.703)	1.518 (.895-2.574)
Semi-routine		1.354 (.984-1.863)	1.357 (.985-1.871)	1.311 (.949-1.813)

Pension Scheme Membership					
Contribute (ref)			1.000***	1.000***	1.000***
Receive			.077*** (.055-.106)	.075*** (.054-.104)	.077*** (.055-.107)
Contribute and Receive			.332*** (.222-.495)	.330*** (.220-.495)	.317*** (.211-.476)
Missing (Respondents not questioned on Pension scheme membership)			.151*** (.111-.207)	.148*** (.108-.203)	.154*** (.112-.212)
Region					
London (ref)				1.000	1.000
North west				1.279 (.808-2.024)	1.299 (.818-2.062)
Yorkshire & Humber				1.368 (.842-2.221)	1.395 (.856-2.274)
East midlands				.808 (.485-1.344)	.844 (.506-1.406)
West midlands				1.160 (.715-1.882)	1.207 (.741-1.967)
East of England				1.392 (.870-2.228)	1.418 (.884-2.275)
North east				1.545 (.851-2.807)	1.674 (.915-3.064)
South east				1.331 (.861-2.056)	1.361 (.878-2.110)
South west				1.195 (.745-1.916)	1.220 (.759-1.963)
Caring status					
Non-carer (ref)					1.000***
1-19 hours p/wk					1.361 (.740-2.504)
20-49 hours p/wk					.361 (.138-.945)
50+ hours p/wk					.780 (.362-1.681)
Missing					1.961* (1.187-3.240)
-2LLR	2799.012	2588.315	2193.66	2184.684	2150.497
% Change -2LLR		7.527549	15.24756	0.409179	1.564849
Nagelkerke R^2	.430	.494	.602	.605	.613
Constant	4.013***	7.685***	20.634***	16.897***	10.284***

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables
Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001
Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010.

Table 23 illustrates that the characteristics of: age group, marital status, SRGH, LLSI, housing tenure, highest education, occupational social class, pension scheme membership and caring status were statistically significant, suggesting that these variables are associated with economic outcomes among women between the ages of 50-74 years old (see also Appendix 40).

The results of the final model suggest that the odds of being economically active reduced with increasing age. Evidently, women aged between 60-64, 65-69 and 70-74 years old are less likely than women aged between 50-54 years old to be economically active (OR's: 0.174, 0.067 and 0.022 respectively). Evidently, the odds of the age groups suggest a lower likelihood of being economically active, confirming previous studies which have explored the association of age and economic activity outcomes (Johnson and Zaidi, 2007). The variable of marital status was also statistically significant (at the 0.001 and 0.005 level). Among divorced and widowed women, the odds of being economically active were 1.974 and 1.810 times respectively the odds among those who are instead married.

The health variables showed similar patterns to the previous two regressions, whereby among individuals whose SRGH is poor, or who report a LLSI, the odds of being economically active are 0.120 and 0.382 times respectively the odds among persons who have excellent SRGH or who do not report a LLSI.

In terms of housing tenure, among women aged between 50-74 years who part-rent and part mortgage, the odds of being economically active are 2.756 times the odds among women who are owner-occupiers. Along these lines, the literature has suggested that housing tenure is a useful indicator of an individual's social status, a factor shown to demonstrate that persons from lower social positions tend to have an increased need to be economically active, for instance to afford rent or to pay one's mortgage (Frogner, 2002;Palmer, 2014b).

For the variable of highest education, the findings suggested that among women who have no qualifications the odds for being economically active were 0.492 times the odds among women who are educated to degree level.

For the variable of occupational social class, the odds of being economically active among women reporting to be/ have been small employers were 1.743 times the odds among women from managerial occupations. The final socio-economic variable highlighted as statistically significant was pension scheme membership. Similarly to the previous two regressions, it was evident that individuals who receive or who both receive and contribute to a pension are less likely to be economically active than persons who solely contribute to a pension (OR's: receive=0.071; contribute and receive=0.310). Furthermore, the category labelled as 'missing' was also statistically significant, as individuals in this category are less likely to be economically active than individuals who contribute to a pension (OR=.154).

Finally, a statistically significant result was noted for the reference category of 'non-carer' (corresponding to the variable of caring status). However, at the categorical level of this variable, no further statistically significant results were found.

The results of regressions 1-3 are summarised together at the end of this chapter (see section 5.8.1). In this summary, the similarities and differences of the 3 regressions will be examined. Additionally, these results will be discussed in greater detail and in the context of the existing literature in the following chapter which will synthesise and explore the key findings of chapters 0 and 5 (see chapter 6).

The next part of this chapter presents the findings of regression 4-6.

5.4 The odds of being economically active amongst persons aged above the SPA (60/65-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

The variable of age, appears to be among the most prominent of the individual characteristics discussed within the literature (Phillipson and Smith, 2006). Specifically, the SPA has been associated with economic outcomes, often being highlighted as a common gauge used by individuals to decipher the time when it is appropriate to leave economic activity and retire (DWP, 2010b;AgeUK,

2012;Cribb et al., 2013a). Already, the findings discussed have shown that age, as an independent variable, is statistically significant, suggesting it is associated with individuals' outcomes of economic activity (among persons aged 50-74 years old). However, to help address the research questions and to explore the influence of age, (specifically the influence being above/ below the SPA), the researcher split the analytical sample into two separate groups:

1) Persons Above the SPA

2) Persons Below the SPA

Regressions 4-6 were specifically designed to help answer research question 1, which is interested in identifying the individual characteristics associated with economic activity among individuals who are *above the SPA*. Regression 4 focuses on men and women together, whereas Regression 5 looks at specifically men, and Regression 6 specifically at women.

5.4.1 The odds of being economically active among men and women aged above the SPA (60/65-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 24 presents the odds ratios of being economically active, among persons (men and women) who are aged above the SPA, (defined as 60/65-74 years old; 60 for women, 65 for men), permitting the researcher to see which independent variables are associated with the outcome of economic activity.

Table 24: Binary logistic regression 4: Odds ratios of being economically active among individuals (men and women) who are above the SPA (60 years old for women, 65 years old for men, cut off age of 74 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010.

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=3,423					
Above age groups					
SPA (60/65 dependent on gender)-69 years old	1.000	1.000	1.000	1.000	1.000
70-74 years old	.223*** (.167-.297)	.231*** (.173-.309)	.336*** (.247-.459)	.332*** (.243-.454)	.327*** (.239-.447)
Gender					
Female (ref)	1.000	1.000	1.000	1.000	1.000
Male	.973 (.785-1.207)	.983 (.789-1.224)	1.252 (.961-1.633)	1.255 (.962-1.637)	1.215 (.930-1.587)
Marital Status					
Married (ref)	1.000	1.000**	1.000	1.000	1.000
Single	.928 (.566-1.521)	.980 (.594-1.619)	.970 (.540-1.743)	.947 (.525-1.710)	.925 (.512-1.672)
Divorced	1.381 (1.046-1.823)	1.637*** (1.228-2.182)	1.494 (1.071-2.082)	1.500 (1.075-2.094)	1.487 (1.064-2.079)
Widowed	.735 (.514-1.050)	.833 (.579-1.198)	1.119 (.755-1.659)	1.127 (.759-1.674)	1.115 (.750-1.657)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.554 (.047-6.594)	.913 (.075-11.056)	.899 (.074-10.914)	.924 (.077-11.092)	.882 (.073-10.592)
Black	.766 (.145-4.050)	1.186 (.222-6.325)	.472 (.044-5.027)	.438 (.039-4.904)	.417 (.037-4.741)
Black British	.692 (.139-3.455)	.671 (.130-3.457)	.792 (.117-5.343)	.719 (.103-5.004)	.692 (.100-4.794)
Asian	.217 (.016-3.005)	.275 (.019-3.905)	.089 (.003-2.367)	.098 (.004-2.189)	.096 (.004-2.169)
Asian British	1.231 (.375-4.043)	1.444 (.425-4.906)	1.220 (.328-4.529)	1.140 (.302-4.302)	1.141 (.301-4.325)
Any other	4.945 (.996-24.561)	3.991 (.803-19.834)	5.399 (.897-32.506)	4.983 (.819-30.339)	4.999 (.813-30.720)
SRGH					
Excellent (ref)		1.000**	1.000	1.000	1.000

Fair	.671 (.476-.946)	.741 (.510-1.077)	.753 (.517-1.096)	.730 (.501-1.066)
Poor	.353* (.165-.753)	.399 (.180-.881)	.406 (.183-.897)	.387 (.175-.856)
LLSI				
No LLSI (ref)	1.000***	1.000***	1.000***	1.000***
Yes LLSI	.479*** (.357-.642)	.458*** (.332-.632)	.452*** (.328-.625)	.457*** (.331-.631)
Yes long not limit	.818 (.641-1.045)	.810 (.618-1.061)	.815 (.621-1.069)	.820 (.625-1.076)
CASP-19				
High (ref)	1.000	1.000	1.000	1.000
Low	.842 (.678-1.046)	.814 (.639-1.038)	.818 (.641-1.043)	.829 (.649-1.059)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		2.610*** (1.937-3.517)	2.616*** (1.938-3.531)	2.667*** (1.972-3.607)
Rent LA/HA		1.192 (.768-1.849)	1.170 (.751-1.824)	1.174 (.752-1.832)
Rent privately		1.875 (.940-3.738)	1.864 (.933-3.721)	1.857 (.928-3.714)
Rent free		2.883 (1.069-7.781)	2.910 (1.073-7.890)	2.821 (1.040-7.654)
Highest Education				
Degree level (ref)		1.000**	1.000**	1.000**
Higher level		.622 (.420-.922)	.624 (.421-.926)	.614 (.413-.912)
Intermediate level		.775 (.549-1.093)	.786 (.556-1.110)	.781 (.552-1.105)
Low level		.512** (.327-.800)	.521** (.332-.815)	.514** (.328-.805)
No qualifications		.516*** (.348-.765)	.524*** (.353-.779)	.518*** (.348-.770)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.558 (.350-.891)	.563 (.351-.902)	.559 (.348-.897)
NS-SEC				
Managerial (ref)		1.000***	1.000***	1.000***
Intermediate occ		1.322 (.911-1.918)	1.306 (.899-1.896)	1.283 (.881-1.866)
Small employers		2.338*** (1.615-3.385)	2.350*** (1.621-3.409)	2.348*** (1.616-3.411)
Lower supervisory		1.166 (.708-1.921)	1.154 (.699-1.904)	1.164 (.704-1.923)
Semi-routine		1.620** (1.166-2.251)	1.640** (1.178-2.281)	1.627** (1.168-2.266)

Pension Scheme Membership					
Contribute (ref)			1.000***	1.000***	1.000***
Receive			.057*** (.038-.086)	.056*** (.037-.085)	.058*** (.038-.087)
Contribute and Receive			.236*** (.144-.385)	.234*** (.143-.384)	.235*** (.143-.385)
Missing (Respondents not questioned on Pension scheme membership)			.097*** (.062-.151)	.095*** (.061-.149)	.099*** (.063-.155)
Region					
London (ref)				1.000	1.000
North west				.944 (.600-1.484)	.970 (.616-1.527)
Yorkshire & Humber				.907 (.556-1.479)	.916 (.561-1.497)
East midlands				.580 (.343-.979)	.588 (.348-.995)
West midlands				.729 (.448-1.187)	.747 (.458-1.216)
East of England				1.104 (.703-1.733)	1.109 (.706-1.743)
North east				.974 (.523-1.814)	.984 (.528-1.834)
South east				.865 (.563-1.329)	.877 (.570-1.348)
South west				.816 (.511-1.302)	.825 (.516-1.317)
Caring status					
Non-carer (ref)					1.000
1-19 hours p/wk					1.211 (.586-2.503)
20-49 hours p/wk					.465 (.143-1.520)
50+ hours p/wk					.926 (.354-2.422)
Missing					1.413 (.779-2.565)
-2LLR	2581.41	2493.553	2138.839	2129.81	2121.658
% Change -2LLR		3.40345	14.225244	0.422145	0.382757
Nagelkerke R^2	.092	.138	.309	.313	.316
Constant	.298***	0.422***	3.427***	3.927***	2.882*

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables

Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010.

Looking at the R^2 values presented in Table 24, it is evident that the model fit improved as each block of variables was introduced. Model 1 for instance, explains 9% of the differences between persons who are above the SPA and their economic outcomes (R^2=.092), while the final model, model 5, can explain 32% (R^2=0.316).

The results of the final model suggest that the variables: age group, LLSI, housing tenure, highest education, occupational social class and pension scheme membership were statistically significant (see also Appendix 40).

The only demographic variables identified as being statistically significant was 'age group', which was significant at the 0.001 level. Among individuals between the ages of 70-74 years old, the odds of being economically active were 0.327 times the odds among individuals aged between 60/65 (female or male) and 69 years of age. This finding is supported by the literature which has found older ages to be associated with economic activity exits and in effect, further establishes the importance for completing separate regressions for individuals above and below the SPA (Bonoli and Shinkawa, 2005;Bond et al., 2007;Banks et al., 2008a;Dini, 2009).

The variable of LLSI revealed similar results to Regressions 1-3, whereby reporting a LLSI is associated with a lower likelihood of being economically active (OR's: Yes, LLSI= 0.457).

In terms of housing tenure, among individuals who part-rent and part-mortgage, the odds of being economically active are 2.667 times the odds among persons who are owner-occupiers. The other socio-economic variable found to be statistically significant was highest education. Among individuals whose highest level of education is 'low level' or 'no qualifications', the odds of being economically active are 0.514 and 0.518 times respectively the odds among degree level achievers. It was also evident that among individuals who have been/ are small employers or from semi-routine occupations, the odds of being economically active were 2.348 and 1.627 times respectively the odds among persons from managerial roles. Lastly, pension scheme membership was also indicated to be important. Among individuals receiving a pension, or who both receive from and contribute towards a pension scheme, or iwho fell into the category labelled as 'missing', the odds of being economically active

were 0.058, 0.235 and 0.099 times respectively the odds among persons who report to solely contribute to a pension.

The next section (section 5.5) investigates gender differences among the factors associated with economic activity when above the SPA.

5.5 The relationship between demographic, health, socio-economic, geographical & caring variables with economic activity, among men and women who are aged above the SPA (defined as 65 for men, 60 for women) (60/65-74 years old).

Regression 4 noted that the explanatory variable of gender was not statistically significant. The previous Regression 1, which had explored the sample when aged between 50-74 years old, had however found a statistically significant result. Examining early descriptive analysis (see Table 13), it was evident that, when respondents were filtered to represent whether they were above or below the SPA and male or female, the sample reduced in size and became skewed in terms of the majority gender representing the sample. Among the sample identified as being above the SPA, women greatly outnumbered the number of men, while among persons who were below the SPA, far more were men. Arguably, these small cell counts may have contributed towards the lack of significance noted for the variable of gender in Regression 4 (Table 24) (see sub-section 6.2.2 for more discussion on this). In light of this and due to the interests of the research questions of this thesis, gender remained in the analysis despite it not being statistically significant in Regression 4 (Table 24). The following section presents the findings of the regression, which concentrated upon men (section 5.5.1).

5.5.1 The odds of being economically active among men aged above the SPA (65-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 25 presents the results of the analysis of the 'male-only' above the SPA regression (65-74 years old). The improvements of the R^2 as sets of

characteristics were introduced are noted by the researcher, as Model 1 can explain 6% (R^2= 0.059) of the differences in reporting being economically active, while Model 5 can explain 24% (R^2=0.239).

Table 25: Binary logistic regression 5: Odds ratios of being economically active among men who are above the SPA (65-74 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010.

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=1,142					
Above SPA age groups Men					
SPA 65-69 years old	1.000	1.000	1.000	1.000	1.000
70-74 years old	.375*** (.255-.551)	.388*** (.263-.573)	.461*** (.303-.700)	.458*** (.300-.698)	.457*** (.300-.698)
Marital Status					
Married (ref)	1.000	1.000	1.000	1.000	1.000
Single	.646 (.278-1.501)	.687 (.293-1.607)	.804 (.296-2.181)	.817 (.300-2.226)	.821 (.300-2.243)
Divorced	1.174 (.653-2.112)	1.354 (.740-2.478)	.963 (.494-1.878)	.975 (.496-1.917)	.986 (.500-1.944)
Widowed	.540 (.232-1.256)	.596 (.254-1.400)	.566 (.229-1.401)	.557 (.224-1.389)	.563 (.225-1.410)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	1.164 (.084-16.083)	2.524 (.180-35.450)	.984 (.066-14.647)	.808 (.052-12.445)	.802 (.052-12.360)
Black	.000 (.000-.)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Black British	.000 (.000-.)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Asian	.496 (.034-7.243)	.594 (.039-9.043)	.198 (.008-4.869)	.172 (.007-4.008)	.168 (.007-3.952)
Asian British	1.219 (.214-6.938)	1.221 (.210-7.096)	1.245 (.192-8.089)	.914 (.129-6.474)	.902 (.127-6.392)
Any other	.000 (.000-.)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
SRGH					
Excellent (ref)		1.000	1.000	1.000	1.000
Fair		.529 (.279-1.002)	.586 (.294-1.168)	.608 (.302-1.223)	.599 (.297-1.209)
Poor		.526 (.181-1.531)	.610 (.195-1.906)	.640 (.204-2.002)	.621 (.197-1.953)
LLSI					
No LLSI (ref)		1.000	1.000	1.000	1.000
Yes LLSI		.578 (.338-.988)	.576 (.323-1.026)	.557 (.309-1.002)	.565 (.313-1.019)
Yes long not limit		.885 (.582-1.345)	.881 (.560-1.384)	.912 (.577-1.441)	.914 (.578-1.446)
CASP-19					
High (ref)		1.000	1.000	1.000	1.000

Low	.861 (.587-1.262)	.812 (.534-1.236)	.817 (.536-1.246)	.826 (.540-1.264)
Housing Tenure				
Own outright (ref)		1.000	1.000*	1.000*
Part-rent part-mortgage		2.447** (1.390-4.306)	2.607*** (1.469-4.627)	2.615*** (1.470-4.654)
Rent LA/HA		1.907 (.853-4.264)	1.787 (.790-4.042)	1.763 (.778-3.992)
Rent privately		2.231 (.745-6.685)	2.056 (.678-6.229)	2.064 (.677-6.292)
Rent free		3.111 (.615-15.724)	3.004 (.577-15.629)	2.989 (.573-15.596)
Highest Education				
Degree level (ref)		1.000*	1.000*	1.000*
Higher level		.689 (.378-1.259)	.696 (.379-1.279)	.683 (.370-1.259)
Intermediate level		.880 (.501-1.544)	.919 (.520-1.625)	.906 (.511-1.607)
Low level		.332* (.143-.768)	.359 (.153-.839)	.350 (.149-.821)
No qualifications		.384* (.195-.757)	.384* (.194-.761)	.378* (.190-.752)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.317 (.097-1.034)	.325 (.099-1.068)	.324 (.098-1.066)
NS-SEC				
Managerial (ref)		1.000***	1.000**	1.000**
Intermediate occ		.695 (.233-2.074)	.686 (.228-2.061)	.685 (.228-2.059)
Small employers		2.617*** (1.504-4.554)	2.596*** (1.480-4.552)	2.639*** (1.497-4.653)
Lower supervisory		1.035 (.499-2.150)	1.034 (.494-2.167)	1.063 (.505-2.238)
Semi-routine		2.137* (1.221-3.739)	2.160* (1.224-3.812)	2.175* (1.231-3.842)
Pension Scheme Membership				
Contribute (ref)		1.000***	1.000***	1.000***
Receive		.100*** (.043-.235)	.100*** (.042-.238)	.101*** (.042-.239)
Contribute and Receive		.275 (.101-.750)	.272 (.098-.755)	.271 (.098-.750)
Missing (Respondents not questioned on Pension scheme membership)		.150*** (.051-.442)	.150*** (.050-.447)	.150*** (.050-.450)
Region				
London (ref)			1.000	1.000
North west			.771 (.357-1.666)	.776 (.358-1.681)

Yorkshire & Humber				.711 (.304-1.664)	.716 (.305-1.681)
East midlands				.656 (.283-1.519)	.668 (.287-1.556)
West midlands				.522 (.226-1.203)	.524 (.227-1.213)
East of England				1.050 (.502-2.194)	1.050 (.502-2.195)
North east				.561 (.176-1.791)	.555 (.174-1.774)
South east				.578 (.279-1.199)	.583 (.280-1.212)
South west				.516 (.227-1.176)	.516 (.226-1.176)
Caring status					
Non-carer (ref)					1.000
1-19 hours p/wk					1.123 (.205-6.155)
20-49 hours p/wk					.783 (.075-8.179)
50+ hours p/wk					1.347 (.200-9.097)
Missing					1.304 (.323-5.261)
-2LLR	831.776	809.859	724.659	717.495	716.978
% Change -2LLR		2.634964	10.52035	0.988603	0.072056
Nagelkerke R^2	.059	.095	.228	0.238	0.239
Constant	0.271***	0.369***	2.463	3.399	2.631

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables

Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010.

The final model of Regression 5 shows that the statistically significant variables found were: age group, housing tenure, highest education, occupational social class and pension scheme membership (see Table 25). It was clear that in comparison to the previous regressions, this regression found the least number of variables to be statistically significant (see also Appendix 40).

Beginning with the demographic characteristics, it was evident that age was the only variable to show a statistically significant result. The results suggested that among men aged between 70-74 years old, the odds of being economically active were 0.457 times the odds among men aged between 65-69 years old.

The results also indicated that for housing tenure, among individuals who part-rent and part-mortgage, the odds of being economically active beyond the SPA were 2.615 times the odds among individuals who own their property outright. The second significant socio-economic variable was highest education, whereby it was found that persons with no qualifications were less likely to be economically active compared to degree level achievers (OR=0.378). The third significant socio-economic variable was occupational social class. Among individuals in small employer or semi-routine occupations, the odds of being economically active are 2.639 and 2.175 times respectively the odds of individuals in managerial roles.

Finally, pension scheme membership was also noted to be statically significant. Among men who receive or who both receive and contribute to a pension, the odds of being economically active were 0.101 and 0.271 times respectively the odds among individuals who solely contribute to a pension. The missing category of the pension scheme membership variable was also statistically significant, as these individuals were less likely than those in the reference category, to be economically active. However, the missing category fails to provide any details of respondents accurate pension scheme status, and thus few conclusions can be drawn.

In order to understand the gender differences among individuals who are above the SPA and the individual characteristics that influence outcomes of economic activity, a separate regression that focused on women was explored (see section 5.5.2).

5.5.2 The odds of being economically active among women aged above the SPA (60-74 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 26 presents the results of the analysis for women who are aged above the SPA (60-74 years old). This table also presents the findings of the R^2 values for each of the models, which can help the researcher understand the fit of each model. Evidently, the final model, model 5, fitted the best explaining the largest percentage of the differences for reporting to be economically active among women who were aged above the SPA.

Table 26: Binary logistic regression 6: Odds ratios of being economically active among women *who are* above the SPA *(60-74 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010.*

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=2,281					
Above SPA age groups Women					
SPA 60-64 years old (ref)	1.000***	1.000***	1.000***	1.000***	1.000***
65-69 years old	.262*** (.196-.349)	.265*** (.198-.356)	.392*** (.284-.541)	.392*** (.283-.543)	.384*** (.277-.532)
70-74 years old	.075*** (.046-.122)	.079*** (.048-.129)	.138*** (.082-.234)	.134*** (.079-.228)	.128*** (.075-.218)
Marital Status					
Married (ref)	1.000	1.000*	1.000**	1.000**	1.000*
Single	1.057 (.557-2.005)	1.115 (.582-2.138)	1.182 (.554-2.522)	1.164 (.542-2.501)	1.110 (.516-2.389)
Divorced	1.511 (1.086-2.104)	1.832*** (1.297-2.586)	1.987*** (1.317-2.998)	1.985*** (1.312-3.004)	1.931** (1.273-2.927)
Widowed	1.013 (.669-1.533)	1.185 (.775-1.813)	1.707 (1.071-2.720)	1.681 (1.052-2.685)	1.650 (1.031-2.641)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Black	2.204 (.336-14.480)	2.725 (.392-18.963)	1.068 (.037-30.904)	1.047 (.036-30.529)	.974 (.031-30.469)
Black British	.600 (.111-3.259)	.565 (.098-3.251)	.776 (.109-5.549)	.756 (.101-5.652)	.717 (.096-5.331)
Asian	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Asian British	.795 (.156-4.061)	.977 (.180-5.297)	.666 (.099-4.498)	.673 (.099-4.580)	.692 (.100-4.808)
Any other	8.711 (1.148-66.099)	6.474 (.863-48.531)	9.712 (1.111-84.897)	9.226 (1.021-83.330)	9.499 (1.037-86.979)
SRGH					
Excellent (ref)		1.000	1.000	1.000	1.000
Fair		.814 (.534-1.241)	.862 (.543-1.370)	.879 (.552-1.400)	.834 (.521-1.333)
Poor		.262 (.085-.804)	.304 (.095-.972)	.301 (.094-.959)	.279 (.088-.891)
LLSI					
No LLSI (ref)		1.000***	1.000***	1.000***	1.000***
Yes LLSI		.432*** (.302-.617)	.402*** (.270-.599)	.400*** (.268-.597)	.404*** (.270-.603)

Yes long not limit	.797 (.582-1.091)	.759 (.536-1.075)	.763 (.537-1.082)	.770 (.542-1.095)
CASP-19				
High (ref)	1.000	1.000	1.000	1.000
Low	.818 (.623-1.074)	.803 (.590-1.093)	.809 (.594-1.103)	.824 (.603-1.125)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		2.387*** (1.653-3.447)	2.332*** (1.610-3.379)	2.419*** (1.664-3.517)
Rent LA/HA		.787 (.450-1.375)	.777 (.441-1.370)	.790 (.446-1.398)
Rent privately		1.655 (.640-4.280)	1.703 (.652-4.445)	1.647 (.629-4.308)
Rent free		3.933 (1.055-14.657)	4.354 (1.172-16.180)	4.296 (1.156-15.967)
Highest Education				
Degree level (ref)		1.000	1.000	1.000
Higher level		.585 (.343-1.000)	.591 (.345-1.012)	.577 (.336-.990)
Intermediate level		.708 (.453-1.108)	.723 (.461-1.134)	.722 (.459-1.135)
Low level		.562 (.321-.983)	.575 (.327-1.011)	.571 (.324-1.006)
No qualifications		.588 (.355-.972)	.616 (.371-1.023)	.608 (.365-1.011)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.604 (.354-1.028)	.625 (.364-1.072)	.618 (.359-1.064)
NS-SEC				
Managerial (ref)		1.000	1.000	1.000
Intermediate occ		1.478 (.953-2.292)	1.456 (.937-2.263)	1.387 (.890-2.163)
Small employers		2.267** (1.363-3.772)	2.243** (1.343-3.747)	2.187** (1.304-3.666)
Lower supervisory		1.499 (.737-3.046)	1.493 (.729-3.057)	1.453 (.707-2.988)
Semi-routine		1.387 (.913-2.109)	1.389 (.912-2.115)	1.340 (.877-2.047)
Pension Scheme Membership				
Contribute (ref)		1.000***	1.000***	1.000***
Receive		.058*** (.035-.095)	.056*** (.034-.093)	.059*** (.036-.098)
Contribute and Receive		.258*** (.144-.465)	.260*** (.143-.471)	.261*** (.144-.474)
Missing (Respondents not questioned on Pension scheme membership)		.112*** (.067-.187)	.109*** (.065-.183)	.116*** (.069-.194)
Region				

London (ref)				1.000	1.000
North west				1.026 (.575-1.831)	1.065 (.596-1.902)
Yorkshire & Humber				1.020 (.547-1.900)	1.028 (.551-1.921)
East midlands				.520 (.262-1.030)	.525 (.265-1.040)
West midlands				.906 (.486-1.686)	.945 (.507-1.762)
East of England				1.071 (.593-1.935)	1.079 (.597-1.951)
North east				1.235 (.569-2.681)	1.262 (.578-2.754)
South east				1.048 (.604-1.818)	1.071 (.617-1.861)
South west				1.078 (.594-1.955)	1.105 (.609-2.006)
Caring status					
Non-carer (ref)					1.000
1-19 hours p/wk					1.092 (.477-2.500)
20-49 hours p/wk					.334 (.079-1.410)
50+ hours p/wk					.711 (.224-2.258)
Missing					1.422 (.717-2.819)
-2LLR	1631.28	1569.08	1341.038	1333.49	1323.357
% Change -2LLR		3.812957	14.53348	0.562848	0.759886
Nagelkerke R^2	.193	.237	.390	.394	.401
Constant	.474***	676***	4.713***	4.836***	3.634*

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables

Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010.

Examining Table 26, the results of the final model suggest that among women aged between 65-69 and 70-74, the odds of being economically active were 0.384 and 0.128 times respectively the odds among those who were 60-64 years old, which is in line with the literature on increasing age and its association with economic outcomes (Leonesio et al., 2012;Mackey, 2013).

Marital status was significant at the 0.005 level. Among divorced women, the odds of being economically active are 1.931 times the odds among married women.

LLSI was the only health variable with a statistically significant result. Among individuals who have a LLSI, the odds of being economically active were 0.404 times the odds among those who do not report a LLSI.

Among individuals who part-rent and part-mortgage, the odds of being economically active were 2.419 times the odds among individuals who instead own their property outright.

In terms of the occupational social class variable, among individuals from small employer roles, the odds of being economically active were 2.187 times the odds among individuals from managerial roles.

A statistically significant result was noted for all of the categories of the pension scheme membership variable. Alike to the other regressions, individuals who receive a pension, or who both receive and contribute to a pension, or who were in the missing category of this variable, the likelihood of being economically active is lower than that of persons who solely contribute to a pension (OR's: receive=0.059; contribute and receive 0.261; missing: 0.116).

A summary of the results of regressions 4-6, can be found in section 5.8.2. The last part of the analysis of this chapter presents the findings of regressions 7-9.

5.6 The odds of being economically active amongst persons aged below the SPA (50-59/64 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

The final part of the analysis was interested in identifying which characteristics are associated with economic outcomes among persons who are below the SPA. This section of the analysis helped to address the research question 2 of this thesis. Additionally this analysis also helped in answering research question 3 as it provided the final group of individuals to which the other regressions already computed, could be compared to.

5.6.1 The odds of being economically active among men and women aged below the SPA (50-59/64 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 27 presents the odds ratios of being economically active, among persons (men and women) who are approaching the SPA (defined as: 50-59/64 years old; 59 for women, 64 for men) permitting the researcher to examine which independent variables are associated with the outcome of economic activity (Regression 7).

Table 27: Binary logistic regression 7: Odds ratios of being economically active among individuals (men and women) who are below the SPA (50-59 years old for women, 64 years old for men) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010.

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=2,374					
Below the SPA age groups					
50-54 years old (ref)	1.000	1.000	1.000	1.000	1.000
55-59/64 (dependent on gender)	.552*** (.390-.780)	.538*** (.371-.780)	.569 (.369-.879)	.583 (.375-.904)	.564 (.358-.888)
Gender					
Female (ref)	1.000	1.000	1.000	1.000	1.000
Male	.923 (.773-1.102)	.950 (.784-1.150)	1.375 (1.068-1.770)	1.373 (1.065-1.770)	1.249 (.963-1.621)
Marital Status					
Married (ref)	1.000	1.000	1.000	1.000	1.000
Single	.704 (.518-.957)	.848 (.604-1.191)	.879 (.576-1.344)	.884 (.578-1.352)	.822 (.535-1.264)
Divorced	.778 (.611-.990)	1.101 (.838-1.446)	1.505 (1.070-2.117)	1.494 (1.060-2.105)	1.427 (1.005-2.027)
Widowed	.664 (.406-1.084)	.718 (.424-1.217)	1.041 (.544-1.989)	1.054 (.547-2.028)	.933 (.488-1.783)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.054* (.006-.488)	.055 (.006-.527)	.042 (.004-.493)	.036* (.003-.415)	.036 (.003-.466)
Black	2.685 (.709-10.169)	2.616 (.626-10.927)	2.040 (.377-11.035)	2.181 (.392-12.129)	2.014 (.378-10.739)
Black British	2.679 (.269-26.678)	1.605 (.160-16.054)	3.387 (.327-35.124)	3.820 (.362-40.280)	3.142 (.295-33.426)
Asian	1.261 (.495-3.213)	1.106 (.406-3.011)	.594 (.173-2.035)	.647 (.181-2.310)	.757 (.178-3.229)
Asian British	1.453 (.567-3.726)	1.939 (.681-5.524)	.953 (.289-3.142)	.986 (.300-3.246)	.782 (.239-2.565)
Any other	1.097 (.453-2.655)	1.191 (.447-3.171)	.892 (.259-3.070)	.890 (.255-3.102)	.709 (.201-2.497)
SRGH					
Excellent (ref)		1.000***	1.000***	1.000***	1.000***
Fair		.554*** (.419-.731)	.751 (.532-1.060)	.754 (.533-1.065)	.712 (.499-1.016)
Poor		.199*** (.133-.298)	.187*** (.116-.303)	.190*** (.117-.308)	.202*** (.124-.329)
LLSI					

No LLSI (ref)	1.000***	1.000***	1.000***	1.000***
Yes LLSI	.295*** (.230-.378)	.291*** (.215-.395)	.289*** (.213-.393)	.280*** (.205-.383)
Yes long not limit	.887 (.692-1.136)	.891 (.667-1.190)	.888 (.664-1.189)	.883 (.656-1.189)
CASP-19				
High (ref)	1.000	1.000	1.000	1.000
Low	1.250 (1.016-1.538)	1.161 (.904-1.490)	1.159 (.902-1.489)	1.232 (.954-1.592)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		3.550*** (2.713-4.646)	3.597*** (2.744-4.716)	3.689*** (2.798-4.864)
Rent LA/HA		1.096 (.738-1.627)	1.089 (.731-1.622)	1.143 (.759-1.722)
Rent privately		1.871 (1.023-3.421)	1.900 (1.035-3.489)	2.193 (1.156-4.161)
Rent free		3.521 (.768-16.141)	3.905 (.843-18.082)	3.884 (.831-18.163)
Highest Education				
Degree level (ref)		1.000	1.000	1.000
Higher level		.997 (.705-1.410)	.989 (.698-1.402)	1.025 (.719-1.461)
Intermediate level		.899 (.659-1.227)	.881 (.644-1.205)	.904 (.657-1.243)
Low level		.659 (.415-1.048)	.653 (.409-1.040)	.628 (.391-1.010)
No qualifications		.627 (.420-.937)	.620 (.414-.930)	.613 (.406-.924)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.483*** (.313-.745)	.497** (.321-.770)	.498** (.319-.777)
NS-SEC				
Managerial (ref)		1.000***	1.000***	1.000***
Intermediate occ		.984 (.679-1.424)	.998 (.689-1.447)	.940 (.644-1.371)
Small employers		2.323*** (1.583-3.408)	2.386*** (1.622-3.511)	2.428*** (1.639-3.597)
Lower supervisory		.904 (.616-1.326)	.902 (.614-1.325)	.878 (.591-1.302)
Semi-routine		1.713*** (1.245-2.358)	1.745*** (1.265-2.407)	1.740*** (1.254-2.415)
Pension Scheme Membership				
Contribute (ref)			1.000***	1.000***
Receive			.057*** (.042-.076)	.055*** (.040-.074)
Contribute and Receive			.344*** (.244-.484)	.322*** (.228-.457)
Missing (Respondents not questioned on Pension scheme			.143*** (.103-.200)	.145*** (.103-.204)

membership)					
Region					
London (ref)				1.000	1.000
North west				1.328 (.837-2.109)	1.318 (.825-2.106)
Yorkshire & Humber				1.057 (.653-1.711)	1.074 (.659-1.750)
East midlands				.801 (.489-1.313)	.829 (.503-1.366)
West midlands				1.392 (.851-2.279)	1.512 (.912-2.508)
East of England				1.434 (.886-2.320)	1.472 (.903-2.400)
North east				1.066 (.602-1.891)	1.097 (.613-1.963)
South east				1.106 (.707-1.732)	1.165 (.740-1.835)
South west				.954 (.592-1.539)	.995 (.613-1.617)
Caring status					
Non-carer (ref)					1.000***
1-19 hours p/wk					1.170 (.633-2.165)
20-49 hours p/wk					.335 (.126-.893)
50+ hours p/wk					.397 (.193-.816)
Missing					2.242*** (1.388-3.622)
-2LLR	3186.126	2829.977	2125.8	2115.49	2048.546
% Change -2LLR		11.17812	24.88278	0.484994	3.164468
Nagelkerke R^2	.021	.195	.478	.482	.505
Constant	5.146***	8.072***	13.374***	11.807***	6.841***

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables

Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Source: Author's Own Analysis, ELSA 2010.

Looking at the R^2 values presented in Table 27 it is evident that with every model addition, the model fit improved. Model 1 for instance, could explain 2% of the differences in individuals' economic outcomes (R^2=0.021), whereas model 5 could explain 51% (R^2=0.505).

The final model of this regression found that age, for the first time, was not statistically significant (see also Appendix 40). Referring back to the bivariate analysis, it was apparent that a smaller sample of respondents were below the SPA (see Figure 50), which may have contributed towards the lack of significance here (discussed further in chapter 6).

The results of model 5 suggest that the variables of: SRGH, LLSI, housing tenure, highest education, car access, occupational social status, pension scheme membership and caring status were statistically significant (see also Appendix 40).

Among individuals whose SRGH was poor, or who reported a LLSI, the odds of being economically active were 0.202 and 0.280 times respectively the odds among individuals whose SRGH was excellent or who reported having no LLSI's. Notably, this finding is compatible with the literature, which has found that ill-health is associated with economic activity declines (Banks et al., 2006;Bond et al., 2007;Ahtonen, 2011).

In relation to housing tenure, among individuals who part-rent and part-mortgage, the odds of being economically active were 3.689 times the odds among persons who own their house outright.

The results also found that among persons with a low level of education, the odds of being economically active were 0.628 times the odds among individuals with a degree or equivalent.

Among persons with no access to a car, the odds of being economically active were 0.498 times the odds among persons who have car access.

The final model of Regression 7 also found that among persons who are/ who previously were small employers or in semi-routine occupations, the odds of being economically active were 2.428 and 1.740 times respectively the odds among persons currently/ previously in managerial roles.

Pension scheme membership once more was statistically significant. Evidently, among individuals receiving a pension, both receiving and contributing to a pension, or in the category labelled as 'missing', the odds of being economically active were 0.055, 0.322 and 0.145 times respectively the odds among individuals who report to solely contribute to a pension.

Lastly, the variable of caring status revealed that the more hours of care a person provides, the less likely they are to be economically active compared to non-carers (OR's: 20-49 hours per week=0.335; 50+ hours per week=0.397). The category of missing was also statistically significant, whereby the odds of being economically active were 2.242 times the odds of non-carers. The diversity of the missing category however, limited the ability of the researcher to draw any further conclusions.

The next section investigates the gender differences among the factors associated with economic activity when an individual is below the SPA.

5.7 The relationship between demographic, health, socio-economic, geographical & caring variables with economic activity, among men and women who are aged below the SPA (defined as 65 for men, 60 for women) (50-60/64 years old).

As was the case for Regression 4 (Table 24), Regression 7 (Table 27) also noted that gender was not statistically significant. Arguably, the small cell counts for male participants may have contributed to this (see Table 13 for more detailed cell count information). For this reason, and in order to address the research questions of this thesis, gender continued to be explored by the analysis.

5.7.1 The odds of being economically active among men aged below the SPA (50-64 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Improvements of the R^2 as sets of characteristics are introduced are noted by the researcher, and it is apparent that Model 1 can explain 15 % (R^2= 0.145) of the differences in reporting being economically active, while Model 5 can explain 59% (R^2=0.590).

Table 28: Binary logistic regression 8: Odds ratios of being economically active among men *who are* below the SPA *(50-64 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010.*

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=1,476					
Below the SPA age groups (men)					
50-54 years old (ref)	1.000***	1.000***	1.000***	1.000***	1.000***
55-59 years old	.802 (.477-1.350)	.890 (.507-1.560)	.772 (.391-1.525)	.811 (.405-1.620)	.742 (.359-1.536)
60-64 years old	.241*** (.144-.403)	.234*** (.134-.409)	.441 (.223-.871)	.461 (.232-.919)	.418 (.202-.863)
Marital Status					
Married (ref)	1.000***	1.000***	1.000	1.000*	1.000**
Single	.393*** (.266-.581)	.413*** (.270-.631)	.484* (.281-.834)	.479* (.277-.829)	.432** (.247-.755)
Divorced	.531*** (.381-.738)	.672 (.466-.969)	.986 (.613-1.588)	.986 (.610-1.596)	.900 (.550-1.473)
Widowed	.470 (.230-.961)	.444 (.205-.961)	.347 (.128-.942)	.325 (.118-.897)	.267 (.095-.745)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000-.)	.000 (.000)
Black	- (.000)	-(.000)	- (.000)	191000000.000 (.000-.)	- (.000)
Black British	- (.000)	- (.000)	- (.000)	777000000.000 (.000-.)	- (.000)
Asian	4.057 (.446-36.901)	3.688 (.378-36.021)	1.091 (.099-11.984)	1.221 (.097-15.338)	1.326 (.083-21.259)
Asian British	6.170 (.798-47.718)	5.691 (.723-44.770)	4.766 (.402-56.568)	4.012 (.364-44.193)	3.302 (.289-37.698)
Any other	.543 (.181-1.624)	.542 (.141-2.078)	.470 (.098-2.242)	.419 (.086-2.037)	.330 (.067-1.624)
SRGH					
Excellent (ref)		1.000***	1.000***	1.000***	1.000***
Fair		.669 (.459-.976)	.941 (.582-1.524)	.930 (.571-1.513)	.906 (.550-1.494)
Poor		.235*** (.141-.391)	.232*** (.123-.435)	.223*** (.117-.423)	.250*** (.130-.481)
LLSI					
No LLSI (ref)		1.000***	1.000***	1.000***	1.000***
Yes LLSI		.243*** (.174-.339)	.212*** (.139-.325)	.212*** (.138-.326)	.203*** (.130-.317)
Yes long not limit		.864 (.628-1.189)	.833 (.568-1.222)	.823 (.558-1.215)	.804 (.539-1.199)
CASP-19					

High (ref)	1.000	1.000	1.000	1.000
Low	1.366 (1.034-1.806)	1.174 (.835-1.650)	1.179 (.836-1.662)	1.270 (.892-1.810)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		3.618*** (2.511-5.214)	3.702*** (2.557-5.361)	3.932*** (2.688-5.753)
Rent LA/HA		.825 (.469-1.450)	.818 (.462-1.447)	.832 (.463-1.494)
Rent privately		2.159 (.931-5.011)	2.227 (.954-5.200)	2.526 (1.027-6.213)
Rent free		9.500 (.877-102.862)	10.608 (.972-115.833)	11.530 (1.047-126.956)
Highest Education				
Degree level (ref)		1.000	1.000	1.000
Higher level		1.158 (.754-1.778)	1.151 (.746-1.775)	1.224 (.784-1.910)
Intermediate level		1.289 (.854-1.944)	1.283 (.845-1.948)	1.377 (.897-2.115)
Low level		.577 (.307-1.083)	.571 (.302-1.080)	.544 (.284-1.043)
No qualifications		1.033 (.592-1.801)	1.057 (.602-1.856)	1.048 (.590-1.861)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.315*** (.164-.605)	.306*** (.157-.597)	.334** (.168-.664)
NS-SEC				
Managerial (ref)		1.000***	1.000***	1.000***
Intermediate occ		1.423 (.770-2.628)	1.424 (.769-2.637)	1.300 (.698-2.420)
Small employers		3.399*** (2.085-5.540)	3.535*** (2.158-5.791)	3.782*** (2.276-6.284)
Lower supervisory		.729 (.458-1.161)	.777 (.485-1.244)	.777 (.478-1.261)
Semi-routine		2.392*** (1.552-3.688)	2.483*** (1.601-3.849)	2.410*** (1.538-3.776)
Pension Scheme Membership				
Contribute (ref)		1.000***	1.000***	1.000***
Receive		.047*** (.031-.069)	.047*** (.031-.069)	.044*** (.029-.066)
Contribute and Receive		.331*** (.213-.514)		.305*** (.193-.481)
Missing (Respondents not questioned on Pension scheme membership)		.331*** (.213-.514)	.160*** (.090-.281)	.155*** (.086-.279)
Region				
London (ref)			1.000	1.000
North west			1.017 (.549-1.883)	1.022 (.546-1.912)

Yorkshire & Humber				.610 (.315-1.181)	.625 (.319-1.222)
East midlands				.510 (.263-.987)	.489 (.250-.958)
West midlands				1.142 (.575-2.268)	1.222 (.604-2.472)
East of England				.983 (.513-1.884)	.986 (.509-1.912)
North east				.698 (.321-1.517)	.652 (.298-1.428)
South east				.785 (.422-1.458)	.839 (.447-1.576)
South west				.755 (.392-1.452)	.805 (.414-1.566)
Caring status					
Non-carer (ref)					1.000***
1-19 hours p/wk					1.075 (.427-2.704)
20-49 hours p/wk					.348 (.065-1.861)
50+ hours p/wk					.196** (.065-.585)
Missing					2.342 (1.170-4.688)
-2LLR	1867.512	1650.970	1198.653	1187.573	1140.985
% Change -2LLR		11.59521	27.39705	0.924371	3.922958841
Nagelkerke R^2	.145	.298	.561	.566	0.590
Constant	6.728***	10.483***	18.548***	21.348***	11.786***

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables

Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Where no results were produced due to low cell counts a dash is used ("-")

Source: Author's Own Analysis, ELSA 2010.

Examining the final model of Regression 8 (Table 28), the statistically significant variables were: age group, marital status, SRGH, LLSI, housing tenure, occupational social class, pension scheme membership and caring status (see also Appendix 40).

A statistically significant result was noted for the reference category of the age group variable within the final model of this regression, however at the category levels no further results were shown to be statistically significant. Despite this, the results suggested that increasing age is associated with a decline in the likelihood of being economically active (Johnson and Zaidi, 2007).

In terms of marital status, among single individuals, the odds of being economically active were 0.432 times the odds among married persons.

The health variables continued to show that persons in worse health tend to be less likely to be economically active (OR's: poor SRGH=0.250; Yes, LLSI=0.203).

Among individuals who part-rent and part-mortgage, the odds of being economically active were 3.932 times the odds among persons who owned their houses outright. Regarding occupational social class, among individuals reporting occupations of small employers, or semi-routine/ routine, the odds of being economically active were 3.782 and 2.410 times respectively the odds among individuals who were in managerial roles. Pension scheme membership was also statistically significant. The results suggest that if individuals receive a pension (whether they receive only, or both receive from and contribute to a pension), or who fall in the category of 'missing', the likelihood of being economically active is lower than that among individuals who solely contribute to a pension scheme (OR's: receive=0.044; contribute and receive=0.305; missing=0.155 respectively).

Finally, caring status was also statistically significant. The results indicated that among men below the SPA who provide 50+ hours of care per week, the odds of being economically active are 0.196 times the odds among men who are non-carers.

To expand the understanding of gender differences among individuals who are below the SPA and the individual characteristics associated with outcomes of

economic activity among these individuals, the regression for women shall now be explored (section 5.7.2).

5.7.2 The odds of being economically active among women aged below the SPA (50-59 years old), by demographic, health, socio-economic, geographical & caring characteristics: Models 1-5

Table 29 presents the results of the analysis for women who are aged below the SPA (50-59 years old). This table also presents the findings of the R^2 values for each of the models which helps the researcher in understanding the model fits. Again, model 5 was the model of best fit and thus could explain the largest percentage of the differences for reporting to be economically active.

Table 29: Binary logistic regression 9: Odds ratios of being economically active among women *who are* below the SPA *(50-59 years old) by demographic, health, socio-economic, geographical and caring variables, (ELSA Wave 5), 2010.*

Demographic, Health, Socio-economic, Geographical and Caring characteristics	Model 1	Model 2	Model 3	Model 4	Model 5
N=898					
Below the SPA age groups					
50-54 years old (ref)	1.000	1.000	1.000	1.000	1.000
55-59 years old women	.618 (.377-1.012)	.513 (.297-.884)	.451 (.240-.847)	.462 (.245-.872)	.439 (.227-.851)
Marital Status					
Married (ref)	1.000	1.000**	1.000*	1.000*	1.000*
Single	1.367 (.767-2.438)	2.398 (1.195-4.814)	2.107 (.917-4.841)	2.379 (1.021-5.542)	2.468 (1.053-5.782)
Divorced	1.187 (.810-1.740)	2.145*** (1.356-3.393)	2.197** (1.270-3.799)	2.098* (1.210-3.637)	2.169* (1.227-3.836)
Widowed	1.247 (.591-2.627)	1.721 (.760-3.898)	2.523 (.981-6.489)	2.735 (1.054-7.098)	2.633 (1.024-6.774)
Ethnicity					
White (ref)	1.000	1.000	1.000	1.000	1.000
Mixed ethnic group	- (.000)	- (.000)	- (.000)	- (.000)	- (.000)
Black	.504 (.103-2.477)	.679 (.108-4.279)	.567 (.060-5.386)	.826 (.079-8.599)	.929 (.100-8.621)
Black British	1.226 (.108-13.984)	.850 (.065-11.084)	1.398 (.097-20.078)	1.996 (.137-28.982)	1.665 (.112-24.834)
Asian	.467 (.141-1.546)	.344 (.096-1.229)	.242 (.051-1.139)	.349 (.070-1.733)	.365 (.065-2.063)
Asian British	.129 (.022-.767)	.339 (.047-2.444)	.382 (.055-2.671)	.422 (.057-3.130)	.320 (.043-2.397)
Any other	2.573 (.425-15.585)	2.379 (.377-15.032)	2.822 (.319-24.986)	4.098 (.415-40.433)	3.297 (.324-33.519)
SRGH					
Excellent (ref)		1.000***	1.000***	1.000***	1.000***
Fair		.418*** (.262-.664)	.555 (.324-.949)	.561 (.327-.964)	.516 (.296-.899)
Poor		.067*** (.030-.152)	.067*** (.028-.162)	.069*** (.028-.170)	.064*** (.026-.159)
LLSI					
No LLSI (ref)		1.000***	1.000***	1.000***	1.000***
Yes LLSI		.382*** (.253-.578)	.347*** (.216-.558)	.343*** (.213-.554)	.322*** (.196-.527)
Yes long not limit		.911 (.596-1.394)	.933 (.578-1.505)	.904 (.557-1.465)	.862 (.526-1.412)
CASP-19					
High (ref)		1.000	1.000	1.000	1.000

Low	1.085 (.772-1.526)	1.179 (.791-1.758)	1.185 (.793-1.771)	1.258 (.832-1.904)
Housing Tenure				
Own outright (ref)		1.000***	1.000***	1.000***
Part-rent part-mortgage		3.259*** (2.132-4.980)	3.306*** (2.149-5.086)	3.405*** (2.188-5.297)
Rent LA/HA		1.714 (.929-3.165)	1.826 (.978-3.406)	1.999 (1.047-3.817)
Rent privately		1.392 (.525-3.693)	1.462 (.546-3.914)	1.687 (.592-4.807)
Rent free		.692 (.090-5.312)	.883 (.110-7.110)	.823 (.101-6.727)
Highest Education				
Degree level (ref)		1.000	1.000*	1.000*
Higher level		.748 (.383-1.463)	.743 (.380-1.456)	.725 (.364-1.444)
Intermediate level		.555 (.322-.957)	.533 (.308-.922)	.510 (.291-.893)
Low level		.905 (.410-1.999)	.883 (.396-1.968)	.810 (.356-1.843)
No qualifications		.346** (.178-.671)	.317*** (.161-.621)	.307*** (.154-.612)
Car Access				
Yes (ref)		1.000	1.000	1.000
No		.577 (.301-1.106)	.580 (.300-1.122)	.531 (.271-1.042)
NS-SEC				
Managerial (ref)		1.000	1.000	1.000
Intermediate occ		.893 (.536-1.489)	.933 (.557-1.565)	.877 (.516-1.492)
Small employers		1.177 (.593-2.335)	1.281 (.642-2.556)	1.224 (.606-2.469)
Lower supervisory		1.702 (.742-3.902)	1.738 (.749-4.035)	1.577 (.661-3.765)
Semi-routine		1.333 (.787-2.258)	1.394 (.818-2.376)	1.369 (.793-2.365)
Pension Scheme Membership				
Contribute (ref)		1.000***	1.000***	1.000***
Receive		.097*** (.056-.169)	.095*** (.054-.167)	.091*** (.051-.162)
Contribute and Receive		.331*** (.177-.617)	.321*** (.170-.605)	.292*** (.153-.558)
Missing (Respondents not questioned on Pension scheme membership)		.179*** (.116-.275)	.180*** (.116-.278)	.185*** (.118-.291)
Region				
London (ref)			1.000	1.000
North west			1.928 (.898-4.139)	1.887 (.866-4.109)
Yorkshire & Humber			1.882 (.858-4.131)	1.982 (.884-4.440)

East midlands				1.488 (.655-3.379)	1.748 (.756-4.042)
West midlands				1.599 (.721-3.546)	1.666 (.735-3.779)
East of England				2.119 (.962-4.670)	2.185 (.976-4.894)
North east				2.297 (.879-6.001)	2.962 (1.087-8.076)
South east				2.150 (1.047-4.412)	2.238 (1.075-4.660)
South west				1.390 (.647-2.987)	1.334 (.611-2.915)
Caring status					
Non-carer (ref)					1.000***
1-19 hours p/wk					1.604 (.675-3.811)
20-49 hours p/wk					.394 (.111-1.399)
50+ hours p/wk					1.012 (.360-2.845)
Missing					3.022** (1.500-6.089)
-2LLR	1158.886	1002.391	821.695	814.930	786.401
% Change -2LLR		13.503917	18.0265	0.8233	3.50079
Nagelkerke R^2	0.022	0.227	.428	.435	0.463
Constant	4.11***	7.623***	19.609***	10.967***	5.037*

Adjusted by Demographic, Health, Socio economic, Geographical and Caring-status variables
Significance Level: 95% CI *p< 0.01; ** p< 0.005; ***p< 0.001

Note: (ref)=reference category; LA/HA= Local Authority/ Housing Association; occ=occupation; p/wk=per week.

Where no results were produced due to low cell counts a dash is used ("-")

Source: Author's Own Analysis, ELSA 2010

Table 29 provides the results of the final binary logistic regression of this analysis. The final model of this regression found that age, for the second time was not statistically significant (see also Appendix 40). The bivariate analysis has revealed that the smallest number of women reported to be below the SPA (see Figure 50 which arguably may have contributed towards this lack of significance (discussed further by chapter 6).

Marital status was the only demographic variable to be statistically significant. Among individuals who are divorced, the odds of being economically active were 2.169 times the odds among married individuals.

The health variables of SRGH and LLSI, showed similar patterns to that of the previous regressions, whereby among individuals reporting poor SRGH, or to have a LLSI the odds of being economically active are 0.064 and 0.322 times respectively the odds among persons who have excellent SRGH or who do not report a LLSI.

The results relating to housing tenure showed that among individuals reporting to part-rent and part-mortgage, the odds of being economically active were 3.405 times the odds among owner-occupiers. Highest education was also statistically significant, whereby the likelihood of being economically active among individuals with no qualifications is lower than that among individuals who are educated to a degree level (OR=0.307).

This regression was the first of all 9 to find the variable of occupational social class to not be statistically significant. The bivariate analysis showed that women below the SPA comprised the smallest percentage of the total sample (see Table 13), which may have had an impact on these results (discussed further by chapter 6).

Pension scheme membership continued to be statistically significant, whereby individuals in the missing category and those reporting to receive or to both contribute to and receive a pension, had odds of being economically active which were 0.185, 0.091 and 0.292 times respectively the odds among individuals who only contribute to a pension scheme.

Finally, the categories of missing and the reference were statistically significant for the caring status variable. Once more, the conclusions ascertained were limited by the diversity of this category.

The next section provides a summary of the results for Regressions 7-9 (section 5.8). It also will provide summaries on Regressions 1-3 and 4-6, allowing the researcher to comment on differences and similarities between them (sections 5.8.1 and 5.8.2). An overall summary is also presented to conclude this chapter (section 5.9).

5.8 Summary of Multivariate Analysis findings

5.8.1 Regressions 1-3: Summary of key findings

The first set of regressions examined individuals between the ages of 50-74 years old. The analysis focused on understanding and identifying variables associated with economic outcomes. Table 30 presents the summarised findings for Regressions 1-3 using simple ticks and crosses to indicate whether a significant result had been found or not. The cells shaded in green indicate cases where variables were significant across all three regressions, whereas those in red indicate lack of significance across the three regressions.

Table 30: Summary of statistically significant variables across the regressions (1-3).

Characteristics	Individuals 50-74 years old		
	Men and Women	Men	Women
	Regression 1	Regression 2	Regression 3
SPA	X	-	-
Age group	✓	✓	✓
Gender	✓	-	-
Marital Status	✓	✓	✓
Ethnicity	X	X	X
SRGH	✓	✓	✓
LLSI	✓	✓	✓
CASP-19	X	X	X
Housing Tenure	✓	✓	✓
Highest Educational Qualification	✓	✓	✓
Car Access	✓	X	X
Occupational Social Class	✓	✓	✓
Pension Scheme Membership	✓	✓	✓
Region	X	X	X
Caring Status	✓	✓	✓

Significance at any level (p<0.01; p<0.005; p<0.001) detected=✓
No statistical significance=x
-=not applicable

Source: Author's Own.

Table 30 shows that the variables of age (age group), marital status, SRGH, LLSI, housing tenure, highest education, occupational social class, pension scheme membership and caring status are significantly associated with economic outcomes among individuals between the ages of 50-74 years (men and women: independently and when examined together). CASP-19, ethnicity and region were consistently not significant across the three regressions. Car access was statistically significant only in Regression 1 (whose sample examined men and women together). Examining the preceding models of these three regressions, the researcher found that the changes in the coefficients' size and directions were minimal. The findings of the regression largely reflect the findings already discussed by the literature review (see chapter 2). Where there were contradictions to the literature, this was among variables which had been less explored by the literature, or whose associations with the outcome variable were less clear-cut. The next section presents a summary of the results for Regressions 4-6.

5.8.2 Regressions 4-6: Summary of key findings

The second group of regressions examined by this analysis were interested in respondents who were above the SPA (60/ 65-74 years old). Table 31 presents the summarised findings of the analysis. As before, shaded areas indicate the consistent results across the three regression models.

Table 31: Summary of statistically significant variables across the regressions (4-6).

Characteristics	Above the SPA		
	Men and Women	Men	Women
	Regression 4	Regression 5	Regression 6
Age group	✓	✓	✓
Gender	X	-	-
Marital Status	X	X	✓
Ethnicity	X	X	X
SRGH	X	X	X
LLSI	✓	X	✓
CASP-19	X	X	X
Housing Tenure	✓	✓	✓
Highest Educational Qualification	✓	✓	X
Car Access	X	X	X
Occupational Social Class	✓	✓	✓
Pension Scheme Membership	✓	✓	✓
Region	X	X	X
Caring Status	X	X	X

Note: Age variable here represents the age variables, which were used specific to the regression computed

Significance at any level (p<0.01; p<0.005; p<0.001) detected=✓
No statistical significance=x
-=not applicable

Source: Author's Own.

Table 31 shows that the variables of age group, housing tenure, occupational social class and pension scheme membership were all associated with one's odds of being economically active when aged above the SPA among men and women, together and separately. Marital status was only significant in Regression 6 (women-only), indicating a gender difference. Likewise, highest education was statistically significant in regressions 4 and 5 (men and women, men-only), but failed to show a significant result for regression 6 (women-only), while LLSI was statistically significant for Regressions 4 and 6 (men and

women, women-only), but not for Regression 5 (men-only), also suggesting differences between men and women.

It was also interesting to note that ethnicity, SRGH, CASP-19, car access, region and caring status were consistently not significant across these three regressions. The odds reported across the preceding models of regressions 4-6 were quite consistent, whereby any changes that were noted, were minimal.

5.8.3 Regressions 7-9: Summary of key findings

Regressions 7-9 focused on respondents who were aged below the SPA (50-64/59 years old). Table 32 presents the results of these three regressions, using the same format as before.

Table 32: Summary of statistically significant variables across the regressions (7-9).

Characteristics	Below the SPA		
	Men and Women	Men	Women
	Regression 7	Regression 8	Regression 9
Age group	X	✓	X
Gender	X	-	-
Marital Status	X	✓	✓
Ethnicity	X	X	X
SRGH	✓	✓	✓
LLSI	✓	✓	✓
CASP-19	X	X	X
Housing Tenure	✓	✓	✓
Highest Educational Qualification	X	X	✓
Car Access	✓	✓	X
Occupational Social Class	✓	✓	X
Pension Scheme Membership	✓	✓	✓
Region	X	X	X
Caring Status	✓	✓	✓

Note: Age variable here represents the age variables, which were used, specific to the regression computed
Significance at any level (p<0.01; p<0.005; p<0.001) detected=✓
No statistical significance=x
-=not applicable

Source: Author's Own.

Examining Table 32, it is noted that the variables of SRGH, LLSI, housing tenure, pension scheme membership and caring status are associated with one's odds of being economically active when aged below the SPA among both genders, together and separately. Once more, differences in the results of men and women were found. For example, occupational social class and car access were significant in the regressions whose sample comprised of both men and women (Regression 7) and men-only (Regression 8), however did not show statistical significance in the Regression with the female-only sample (Regression 9). Marital status was not statistically significant in the regressions with both men and women (Regression 7) however, it was statistically significant when men and women were examined in separate samples (Regressions 8 and 9). Age was statistically significant only among the male-only sample (Regression 8) while highest education was only statistically significant in the regression with women only (Regression 9). Finally, ethnicity, CASP-19 and Region were consistently not significant across the three regressions.

The coefficient directions and sizes were consistent across the preceding models of each of the regressions, with any changes being only minimal.

5.9 Chapter Summary

After examining the results of the nine regressions, it was interesting to note their similarities and differences. Table 33 presents the findings of the 9 regressions in a similar format to before, however illustrates all nine regressions together.

Table 33: Statistical significance across the regressions of model of best fit.

Characteristics	50-74 years old			Above the SPA 60/65-74 years old			Below the SPA 50-59/64 years old		
	Men and Women	Men	Women	Men and Women	Men	Women	Men and Women	Men	Women
	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6	Regression 7	Regression 8	Regression 9
SPA	X	-	-	-	-	-	-	-	-
Age group	✓	✓	✓	✓	✓	✓	X	✓	X
Gender	✓	-	-	X	-	-	X	-	-
Marital Status	✓	✓	✓	X	X	✓	X	✓	✓
Ethnicity	X	X	X	X	X	X	X	X	X
SRGH	✓	✓	✓	X	X	X	✓	✓	✓
LLSI	✓	✓	✓	✓	X	✓	✓	✓	✓
CASP-19	X	X	X	X	X	X	X	X	X
Housing Tenure	✓	✓	✓	✓	✓	✓	✓	✓	✓
Highest Educational Qualification	✓	✓	✓	✓	✓	X	X	X	✓
Car Access	✓	X	X	X	X	X	✓	✓	X
Occupational Social Class	✓	✓	✓	✓	✓	✓	✓	✓	X
Pension Scheme Membership	✓	✓	✓	✓	✓	✓	✓	✓	✓
Region	X	X	X	X	X	X	X	X	X
Caring Status	✓	✓	✓	X	X	X	✓	✓	✓

Significance at any level (p<0.01; p<0.005; p<0.001) detected=✓
No statistical significance=x
-=not applicable

Source: Author's Own

Table 33 demonstrates the results of all the regressions. The variables of ethnicity, CASP-19, housing tenure and pension scheme membership showed similar results in all 9 regressions. Ethnicity, region and CASP-19 were not statistically significant throughout the multivariate analysis, suggesting that these variables are not associated with economic outcomes in later life when examined alongside other variables. Housing tenure and pension scheme membership were statistically significant across all 9 regressions, suggesting that they are associated with economic activity in later life (men and women, 50-74 years old, above and below the SPA) (see Appendix 41 and Appendix 42 for two figures which illustrate using stacked bar charts which variables were significant across the regressions).

The research questions of this thesis were particularly interested in identifying factors associated with economic outcomes among individuals who are above and below the SPA, and in examining gender differences. Through organising the regressions into appropriate combinations which could reflect the groups of interest detailed by the research questions, the researcher could identify the variables which had been found consistently to have a significant effect, which could allow the researcher to conclude it was associated with economic outcomes of that group of persons.

Table 34 highlights the individual characteristics which are associated with economic activity in relation to the groups of interest as specified by the research questions (see column headers) (see Appendix 43 for complete results).

It is important to remember that the dependent variable of this study included a diverse range of individuals in its binary categories (see section 3.5.1.1.1). Due to combining responses, the independent effect of the original current situation categories may have been disguised by the more common categories which were pooled into the same category of the final derived economic outcome variable (see Table 8 for details). For this reason, the researcher had to remain mindful when interpreting the results of the potential effects that this had on the findings.

Table 34: Summary of statistically significant variables across respondents

Men and Women (Regressions 1,4,7)	Men (Regressions 2,5,8)	Women (Regressions 3,6,9)	50-74 years old (Regressions 1,2,3)	Above the SPA (Regressions 4-6)	Below the SPA (Regressions 7-9)	Women 50-74 years old (Regression 3)	Women Above the SPA (Regression 6)	Women Below the SPA (Regression 9)	Men 50-74 years old (Regression 2)	Men Above the SPA (Regression 5)	Men Below the SPA (Regression 8)
LLSI, Housing tenure, Occupational social class, Pension scheme membership	Age group, Housing tenure, Occupational social class, Pension scheme membership	Marital status, LLSI, Housing tenure, Pension scheme membership	Age group, Marital status, SRGH, LLSI, Housing tenure, Highest education, Occupational social class, Pension scheme membership, Caring status	Age group, Housing tenure, Occupational social class, Pension scheme membership	SRGH, LLSI, Housing tenure, Pension scheme membership, Caring status	Age group, Marital status, SRGH, LLSI, Housing tenure, Highest education, Occupational social class, Pension scheme membership, Caring status	Age group, Marital status, LLSI, Housing tenure, Occupational social class, Pension scheme membership	Marital status, SRGH, LLSI, Housing tenure, Highest education, Pension scheme membership, Caring status	Age group, Marital status, SRGH, LLSI, Housing tenure, Highest education, Occupational social class, Pension scheme membership, Caring status	Age group, Housing tenure, Highest Education, Occupational social class, Pension scheme membership	Age group, Marital status, SRGH, LLSI, Housing tenure, Car access, Occupational social class, Pension scheme membership, Caring status

Source: Author's own.

The following chapter shall synthesise and explore the key findings of chapters 0 and 5. It will discuss the results of the analysis in relation to the research questions of this thesis. Additionally, existing literature surrounding the topic of extending working lives is revisited, to help highlight supportive and contradictory evidence compared to the findings of this research.

6. Chapter 6: Discussion & Conclusions

This chapter will synthesise and discuss the results presented in chapters 0 and 5, in five main sections. To begin, the first two sections of this chapter shall revisit the aim and research questions of this thesis and bring together the key findings of this research and their contextualisation within the existing body of literature (first presented in chapters 1 and 2) (sections 6.1 and 6.2). The third section of this chapter goes on to acknowledge limitations of this study (section 6.3). Following this, a discussion of the policy implications of the findings and practical suggestions for policy-makers to help encourage people to extend their working lives will be debated (section 6.4). The final section considers how future research could build on the present study; in terms of the methods used and the topic area investigated (section 6.5).

6.1 Revisiting the aim of this thesis

The DWP (2013), reported in 2013 that 27% of the workforce were aged 50 or older. Predictions suggest that this percentage is likely to increase to 33% by 2020 (Redden, 2013). This increase has largely been attributed to increasing longevity, which has permitted older adults to remain in good health and disability-free for longer periods of their lives (Lievre et al., 2007;Nilsson et al., 2011;Mackey, 2013;Unger and Schluze, 2013). As the number of older adults in the workforce increase in number and in age, there is a growing urgency for the government and policy-makers to encourage people to extend their working lives (Redden, 2013;Vickerstaff et al., 2015). This may help the welfare state to avoid issues such as skill shortages, escalating costs of state benefits, increasing numbers of older adults in poverty and the prospect of a pensions crisis, in the future (Hedges et al., 2009;Smeaton et al., 2009b). In addition to addressing these issues, extending working lives offers many opportunities to benefit society. For instance, many older adults report that they want to keep working between the ages of 65 and 70, claiming that it provides them with a sense of enjoyment and purpose (Calvo, 2006;Irving, 2015;Kalokerinos et al., 2015;Thieme et al., 2015). Economic activity in later life has also been positively correlated with health benefits and an increased ability to save for retirement, further highlighting the benefits extending

working lives could potentially bring in upcoming years (Coleman et al., 2006;Stibich, 2011).

Although steps have been taken to create policies which aim to help encourage people to be economically active up-to, and beyond the SPA (for instance, legislation set out by the EWLA), there remains a lack of robust evidence to help inform policy-makers of the factors which encourage economic activity in old-age. It is crucial to understand which factors play a role and the role that these factors play, if to achieve and sustain the objectives of the EWLA. Existing research has often focused on identifying individual characteristics associated with the decision to retire (Dwyer and Mitchell, 1999;Montalto et al., 2000;Dewilde, 2012;Erp et al., 2014). However, there has been far less research focused on individual characteristics associated with economic activity in later life.

The present study has sought to fill this gap in knowledge by investigating what factors are associated with economic activity among persons who are between 50-74 years old, in England. Through identifying individual characteristics (demographic, health, socio-economic, geographical and caring-related) associated with economic activity, insights into persons who are typically economically active or instead inactive in later life can be ascertained. The sample selected by this study and the analytical techniques which model the variables concomitantly, is unique to this study. The findings of this research provide an important contribution of robust evidence to the burgeoning gerontological literature on the topic of economic outcomes among individuals in later life.

This study offers an original contribution in terms of the timings in which the research was conducted and the data that was utilised. The research was completed over the period of 2012-2016. During this time, policy in the field of pensions and work has been in a state of flux whereby restructuring and reorganisation of legislation in relation to economic activity of older adults has been under great scrutiny and continuous change (Schaar and Matthiesen, 2011). Conducting research during this critical corridor of time has enabled the researcher to be at the forefront of research in this field. Furthermore, this timing allows for this research to contribute to our understanding of possible

influences that such policy changes may have in years to come, before their full implementation, giving this research scope to advise policy-makers and other stakeholders, of the potential impacts of such policies. Policy changes surrounding encouraging extensions in working lives, primarily target older-workers (commonly defined as those aged 50+). The data used by the present study was collected in 2010 and concentrates on individuals aged 50-74 years old (the exact same individuals to whom the EWLA policy changes target). The analysis of this study is distinctive to past work, as it explores the differences in individual characteristics of economic outcomes among individuals aged above/ below the SPA, separately. Through splitting the sample into these two groups, this research could better understand the economic outcomes of older adults around an age central to policies linked to the EWLA. This is an important first step in informing policy-makers and the government as to the patterns of economic activity according to individuals' particular characteristics in the English context.

The main contribution of this study is its methodological conceptualisation and operationalisation of multiple characteristics, which help to generate characteristic profiles typical of individuals (men and women who are either below or above the SPA), according to their economic outcomes; offering a blueprint for future research to build upon (see section 6.5).

6.2 Addressing the Research questions

The research questions of this thesis explore the *factors which are associated with economic activity and inactivity, among individuals (men and women), who are* above the SPA (59/64-74 years old) (research question 1) and below the SPA (50-59/64 years old) (research question 2). The final area of interest to this research relates to identifying *the most pronounced differences between persons who are economically active or inactive, who are below and above the SPA* (research question 3) (see section 1.5 for the research questions in full).

The sub-sections of this present section (section 6.2), will address and outline each research question in turn. For each question, the findings of the present study are critically discussed in reference to the current context of literature on

this topic area. This helps us to identify similarities and differences between the current and pre-existing literature on this area of interest. Sub-section 6.2.1, begins by identifying the common factors associated with economic activity, which underpin the interests of the research questions. Sub-section 6.2.2 will then go on to address research question 1, which seeks to identify the factors associated with economic activity among individuals who are above the SPA. Sub-section 6.2.3 will then address research question 2, which alike to research question 1 seeks to identify common factors associated with economic activity however, instead this sub-section takes an interest in respondents who are below the SPA. Sub-section 6.2.4 then identifies the most pronounced differences between sub-sections 6.2.2 and 6.2.3. Finally, sub-section 6.2.5 provides a short summary of the findings while also relating them back to the conceptual framework used by this thesis.

6.2.1 Introduction: Factors associated with economic activity/inactivity outcomes in later life.

The literature review of this thesis enabled the researcher to identify factors which pre-existing studies suggest are associated with economic outcomes (see chapter 2). It was evident that factors associated with economic outcomes are diverse (Uccello, 1998;Humphrey et al., 2003;Zaniboni et al., 2010;Nilsson et al., 2011). For instance, Phillipson and Smith (2006) in their review of research on the topic of Extending the Working life, identified 6 themes they felt were most important in influencing work and retirement patterns, which include: health status, economic inactivity ahead of SPA, social and demographic factors, financial factors, type of employment and finally, age cohorts. Whereas, in a more recent paper, Flynn (2010) paints a slightly different picture when reviewing existing literature linked to older-workers' work orientations and typologies of work and retirement; instead identifying financial security, caring responsibilities, social networks and career flexibility, as the predominant themes. Based on commonalities in existing research findings, the researcher selected five themes to explore, which included: Demographic, Health, Socio-economic, Geographical and Caring, variables. The consistencies and differences between the current findings (presented in

chapters 0 and 5) in relation to their context within the existing body of literature, is explored by this current chapter (Babbie, 2015).

6.2.2 Research question 1: Factors associated with economic activity among individuals who are above the SPA

This section discusses the findings of research in relation to the first research question of this thesis.

Studies have consistently found evidence to show that increasing age is associated with decreasing rates of economic activity. For instance, analysis of the BHPS by Johnson and Zaidi (2007), demonstrates dramatic declines in the economic activity rates of individuals aged above the SPA. Dubois and Anderson (2012), in their report, based on a literature review, quantitative analysis of EU databases, input from seven country reports and examples gathered from other EU member states, found that beyond the age of 65, the percentage of individuals who work tends to decrease (with persons over the age of 75, being among those rarest to work) in the EU.

The bivariate results of the present study are compatible with the evidence of existing literature, whereby among respondents who were *above the SPA*, accounts of economic inactivity were more common than reports of economic activity (see Figure 48). The multivariate results continued to support pre-existing findings, whereby it was noted that among individuals who were 70-74 years old, the likelihood of being economically active was lower than that among individuals who were 60/65-69 years old (see Table 24).

Another prevalent factor commonly associated with economic outcomes, is marital status. According to Phillipson and Smith (2006) in their review of research looking at factors which influence labour market participation of older-workers; among persons aged beyond the SPA, married and divorced persons are economically active more often than widowed and single persons. The bivariate analysis of the present study supports this result and found marital status to be associated with economic activity (see Figure 51 and Figure 52). However, at the multivariate level of the analysis the results no longer were statistically significant, thus no association could be confidently identified (see Table 24).

Dini (2009) using data from the LFS, Annual Population Survey (APS) and the ELSA, suggests that there are gender differences in the effect of marital status upon economic outcomes; which may have had an impact on the statistical significance of the analysis which looked at a sample of men and women together. Dini suggests that women aged between the SPA-69 years old, who are married or separated, are more likely to be economically active, while men who are between the SPA-69 years old reporting these marital statuses, are less likely to be economically active. Equally, Smeaton and McKay (2003) in their quantitative analysis of the LFS (2000-2001), noted marital status to be particularly influential upon women's economic outcomes, whereby participation rates of separated and divorced women exceed that of married women.

Consistent with other research, the multivariate analysis of the present study noted gender differences (see Table 25 and Table 26). Evidently, male respondents who are above the SPA failed to show a significant association between marital status and economic activity (see Table 25), supporting Smeaton and McKay (2003) who found that marital status appears most influential upon women. The present study found among the female-only analysis that the categories of married and divorced, were statistically significant (see Table 26). Divorced individuals showed higher odds of being economically active (see Table 26) in line with the findings already discussed and that of researchers such as Humphrey et al. (2003) who have found that married individuals tend to plan and take earlier retirement than non-married individuals (Szinovacz et al., 2012b) (see Table 24).

The second theme identified by the research questions of this thesis, was health. Health has been linked to economic outcomes by the literature, whereby the most common arguments suggest that ill-health is associated with economic inactivity (Vickerstaff, 2010;Robroek et al., 2013;Virtanen et al., 2014). Interestingly, research has also found evidence to show ill-health is associated with increasing age. For example, in 2012 the ONS reported that the prevalence of a long-standing illness or disability, is highest among older individuals (ONS, 2014). A general consensus of the literature is that poor health selects individuals out of the labour market (Disney et al., 2006;Doshi et al., 2008;Börsch-Supan et al., 2009;van den Berg et al., 2010;Rice et al.,

2011;Gessa, 2015). For example, Gessa (2015) using the ELSA, links working beyond the SPA with health and suggests that working beyond the SPA is associated with positive evaluations of health. Gessa argues that this reflects how the healthiest individuals are those who continue in paid employment. Looking towards the analysis of the present study, the LLSI variable was found to be statistically significant (see Table 24), suggesting it was associated with economic outcomes among individuals who are above the SPA. The presence of a LLSI was associated with a decreased likelihood of being economically active among individuals who are above the SPA, further supporting the results of the existing literature discussed (see Table 24).

Literature often notes there are gender differences in the types of health issues which people experience and the influence these have upon economic activity outcomes (Vlassoff, 2007). For instance, women tend to live longer than men, however research has also found that women often have more issues relating to chronic illness and disability, later in life (Orfila et al., 2006). The variable of LLSI showed a clear gender difference in the present research whereby a significant result was evident among women (see Table 26), but not among men (see Table 25). Once more, it is critical to acknowledge the small cell counts of male respondents in the above the SPA group (see Table 13), which may have resulted in this finding being insignificant (further discussed in section 6.3). Looking towards the significant result of women (see Table 26), it was apparent that women who report to have a LLSI are significantly less likely than females who instead do not have a LLSI to be economically active. This is in line with the evidence provided by other research, supporting the evidence surrounding ill-health being associated with economic inactivity (Disney et al., 2006;Doshi et al., 2008;Börsch-Supan et al., 2009;van den Berg et al., 2010;Rice et al., 2011;Gessa, 2015).

The third theme examined by the research questions of this thesis, focused on socio-economic variables. The first variable examined, related to housing tenure. Frogner (2002) suggests that choice of housing can often be determined by a person's labour market status. Factors such as an individual's age, education, household type, ethnicity and financial and criminal history correlate with the probability of owning ones house outright as opposed to being a mortgagee, which has further been linked to the probability of being

economically inactive (Frogner, 2002). Housing tenure is suggested to provide a good indication of an individual's life-time accumulated financial assets, which are interestingly also both factors which have been associated with economic outcomes (Dalstra et al., 2006). A prominent hypothesis noted by literature that looks at the relationship of labour supply and housing tenure, is the Oswald hypothesis. This hypothesis suggests that homeownership increases unemployment (Battu et al., 2008;Isebaerta et al., 2015;Kantor et al., 2015). According to the Greater London Authority (2013), persons aged 65 and over, are more likely to own their property outright compared to younger individuals, which if in line with the Oswald hypothesis suggests that they are more likely to be economically inactive. Frogner (2002) has found evidence to suggest that owning a property outright generally is associated with lower monthly outgoings; which can affect the decision to work or not. In light of this, Frogner (2002) suggests that older adults who have paid off their mortgage are more likely to take retirement compared to someone who still has some of their mortgage to pay off, or rent to finance.

The bivariate analysis of the present study confirms that the majority of persons who report to own their houses outright were economically inactive (see Figure 60). Furthermore, in support of the findings of Greater London Authority (2013), individuals who were above the SPA reported the highest percentages for owning their houses outright (see Figure 61). Evidently, among individuals who are above the SPA, those who were economically inactive reported the higher percentages of being homeowners; once more supporting the Oswald hypothesis' expectations (Figure 61). Looking towards the multivariate analysis of this thesis, a significant association was detected between economic outcomes and the variable of housing tenure among respondents (men and women; together and independently) who are above the SPA (see Table 24-Table 26). This association suggests that persons who part-rent and part-mortgage are more likely to be economically active than individuals who are homeowners, providing support towards the existing literature on this topic and the Oswald hypothesis (Frogner, 2002) (see Table 24-Table 26).

A second socio-economic variable which has been highlighted by the literature and the analysis of the present study as being associated with economic

outcomes, relates to individuals highest educational achievement (McKay and Middleton, 1998). Johnson and Zaidi (2007) who used the BHPS to explore factors related to work over the life-course, identify education as a key factor associated with working patterns, lifetime earnings and employability prospects. Data from the Eurostat (2008), has found that individuals with higher levels of education have the greatest likelihood of continuing to be economically active beyond the SPA. Using this same data, Clayton (2008) offers further support surrounding the relationship of education and economic activity in later life and reports that 19% of men and 11% of women with tertiary education are employed beyond the SPA, while only 9% of men and 4% of women with basic education were shown to be employed.

Looking at the current study findings, highest education was statistically significant among men and women (together), who are above the SPA (see Figure 63 and Table 24). Among the statistically significant categories, individuals with a lower level of education (i.e. categories of: low level and no qualifications) were less likely to be economically active compared to individuals educated to degree level, which is compatible with previous research findings (see Table 24). One conflicting finding however, related to the lower level education category of the present study which was labelled as 'Intermediate education' (see Table 24). This category was not statistically significant, despite pre-existing evidence suggesting that lower levels of education, which include these respondents, lead to different economic outcomes beyond the SPA. This difference is postulated to have been a result of coding differences of the present study respondents, who were pooled in this variable in a unique way. Furthermore, the present study explores economic activity as opposed to Clayton (2008) who examined whether respondents were employed, once more illustrating a difference in these pieces of research which may have contributed to the contrast in findings that were noted.

According to Scholes et al. (2008), previous analysis of the ELSA has shown that women are less educated than men. The bivariate analysis of this study found that a higher proportion of women reported to have no education/ low level education/ intermediate level education compared to men, whereas a higher proportion of men reported to be educated to degree level/ higher level

compared to women (see Figure 65). Clayton (2008) also demonstrates a more pronounced drop among men than women in employment activity outcomes beyond the SPA. The present study notes in the multivariate analysis that among men, education was statistically significant (Table 25), while for women no statistically significant result was found (Table 26). Interestingly, the results of the current study highlighted that men who have no qualifications are less likely than men of the same age with degree level education to be economically active, supporting evidence which reports that individuals who are above the SPA and who have higher levels of education are more likely to remain economically active (Eurostat, 2008) (Table 25). It is important to account for the fact that the present study explores economic activity, as opposed to employment status among a select group of individuals (refer to section 3.5.1.1.1, Economic outcome-, for more information on the concept of economic activity). Cohort differences may affect the outcomes of the individuals in the present study, which may consequently result in contrasting results particularly surrounding the effect education has upon economic activity beyond the SPA. Accounting for this may help to explain differences between the current study and other literature contexts, which have explored this association.

Turning now to look at the third socio-economic variable of occupational social class, the literature which looks at adults who are above the SPA has found that an individual's occupational social class is associated with economic outcomes (Marmot et al., 2003). Links to other variables already discussed, have been highlighted by the literature, including this variables close relationship to factors such as: education, health and finances, among others (ONS, 2013c). Phillipson and Smith (2006) in their literature review of factors associated with economic activity, note that men and women in lower social class groups are more likely to cite health-related reasons which lead to them leaving work prior to reaching the SPA. It is also noted in this review of the literature that individuals from routine and semi-routine occupations have fewer opportunities to work beyond the SPA compared to individuals in professional and managerial groups. Phillipson and Smith refer to analysis which uses ELSA 2002 and report that there are social class variations in the reasons stated for taking early retirement, whereby men in higher social class

groups report financial incentives to be the biggest enticement, whereas middle and lower social class groups report ill-health to be the biggest stimulus affecting their decisions (Marmot et al., 2003). A more recent paper by Radl (2012a), reports that the groups of workers who retire latest are those in the upper and lower ends of the occupational ladder.

The bivariate analysis of the present study found that among individuals who are above the SPA, fewer persons in managerial positions were economically inactive, while a greater percentage of individuals who were in semi-routine roles reported to be economically inactive (see Figure 62). This evidence supports previous findings which have found that individuals in lower occupational social class groups have fewer opportunities to be economically active beyond the SPA (Phillipson and Smith, 2006). The multivariate analysis of this study further confirmed the statistical significance of this variable (see Table 24-Table 26). It was peculiar however to note that respondents in intermediate social class groups were statistically significant (in this instance: small employers), whereby they reported increased odds for being economically active (see Table 24-Table 26). Arguably, these differences are a result of the data, which for the present study focused on respondents who were above the SPA, who according to literature are the individuals who are shown to have increased economic activity in small firms (ONS, 2012b-c). The sample of the present study explores *outcomes* as opposed to stated retirement *intentions* and furthermore, looks at more recent data than existing research on this topic. The findings of the current study appeal to the findings of Radl (2012a) who found that groups of workers who retire latest are often from the upper and lower ends of the occupational ladder (see Figure 62, Figure 63 and Table 24-Table 26).

Evidence from Hall (2006) and the ONS (2013h-a) suggests that there are gender differences in occupational social class trends. They report that men are twice as likely as women, to be in higher managerial roles, whereas women are more likely to be in intermediate occupations. Occupational gender segregation and the tendency for women and men to work in different occupations has also been identified as a key cause for gender inequalities relating to employment and retirement (Blackburn et al., 2014). Despite this, Radl (2012a) who explores labour market exits in western Europe and the

effects of social class and gender on the timing of retirement, has found that the way in which social class influences retirement timing is largely the same for women and for men. In the analysis of the current study, when respondents were separated into gender-specific groups, the statistical significance of this variable continued to be evident (see Figure 63 and Table 24-Table 26). Interestingly, the odds found were alike between men and women; however, the categories identified as significant varied. Among men, the categories of managerial, small employers and semi-routine were significant, while among women the only category which was significant, was 'small employers'. These results offer support to the conclusions drawn by Radl (2012a) and literature which has discussed gender differences in occupations taken up (Blackburn et al., 2014) (see Table 25 and Table 26).

A fourth socio-economic variable widely discussed by the literature as being associated with economic outcomes, relates to pension scheme memberships (Ginn and Arber, 2000;Abraham and Ledolter, 2006;Phillipson and Smith, 2006;Banks et al., 2014;Eurostat, 2014;Vlachantoni et al., 2015). Many existing studies have found that contributions to a pension are associated with economic activity, while receipt of a pension is associated with economic inactivity in later life (Banks et al., 2007;Banks and Tetlow, 2008). Data analysis by Eurostat (2014), echoes these results and reports that the number of adults who report to receive a pension, increases with age; with individuals who are above the SPA being among the most likely to report receiving a pension.

Private pensions can provide enhanced financial security in later life, however strategies to encourage membership to private pension schemes (such as the auto-enrolment initiative first outlined in the Pensions Act 2008) are relatively new (Silcock et al., 2012;GOV.UK, 2014). Looking towards factors associated with such pension scheme memberships, can help us to better understand who of the sample respondents are among the most likely to be part of such schemes. Research exploring the relationship between economic activity and pension scheme memberships has found that demographic and socio-economic characteristics can affect the odds of an individual working for an employer who offers a private pension scheme (Ginn and Arber, 2000;Vlachantoni et al., 2015). Vlachantoni et al. (2015) demonstrate in their

analysis of the UKHLS that older, male and married individuals appear to have the strongest associations with belonging to a pension scheme, while persons reporting to be educated to a low level or renting their home, show negative associations with pension scheme memberships.

The bivariate analysis of this study found that among individuals who are above the SPA, a higher proportion of economically active individuals contribute to a pension, while a higher proportion of economically inactive individuals receive a pension (see Figure 68 and Figure 69). These findings were consistent with previous literature which has reported a positive relationship between pension receipt and increasing age, and a negative relationship between pension contributions and increasing age (Banks and Tetlow, 2008). Looking towards the multivariate analysis of this study, pension scheme membership continued to yield statistical significance (see Table 24-Table 26). The trends in the data revealed that among individuals who are above the SPA and report to receive a pension, or who report to both receive and contribute to a pension scheme, are less likely than individuals who report to solely contribute to a pension scheme, to be economically active. These findings continued to be conclusive of the results identified by other studies which have examined this association in the past.

Although the results for men and women were similar (see Table 25 and Table 26), the category of 'Receive and contribute' in the male-only analysis, was not statistically significant. It was also noted that the odds of men reporting to receive a pension were higher than the odds noted for this same category in the female equivalent analysis. Although these findings in part appeal to the results of Vlachantoni et al. (2015), it is important to remain mindful of the unequal numbers of male and female participants in the sample (see Table 13), and the missing category of this variable, which potentially could have had an effect on the results which were found (discussed further by section 6.3). Despite this, largely the results were in line with the expectations of the researcher, and confirmed many of arguments already presented by other researchers on this topic.

Another key variable identified by the literature, which comprises the fifth theme identified by this study for acting as influential upon economic

outcomes among individuals who are above the SPA, is caring status (ONS, 2013h-a;AgeUK, 2015). Across the literature, caring is predominantly suggested to be a female role among 50-64 year-olds (Tajfel, 1972;Hogg and Reid, 2006). However, recent statistics from the ONS (2013h-a) demonstrate that more men than women undertake caring beyond the age of 65.

Research which explores the association between care and economic activity has found that undertaking family care responsibilities has a highly significant effect upon the decision to work beyond the SPA (Finch, 2011). Phillipson and Smith (2006) in their review of literature relating to factors that influence labour market participation of older-workers, identify care as a 'push' factor (i.e. pushing people out of the labour market). Yeandle (2005) points out in her framework for policy and practise relating to the topic of sustaining working lives, that people with caring responsibilities can find it difficult to achieve a work-life balance, sometimes opting to leave work to lessen the pressures of caring.

Vlachantoni (2010), using the ELSA, Wave 3, demonstrates there is a negative association between economic activity prevalence and the number of hours of care provided. Furthermore, Finch (2011) in their research which explored whether an individual's work history influences the decision to work beyond the SPA, report that lengthy years in employment increase the likelihood of working beyond the SPA, while periods of inactivity reduce this likelihood. More specifically, this research found that persons who have provided care for more than 20 years are less likely to work beyond the SPA. An interesting finding in this research however, relates to individuals who had provided fewer than 5 years, who report odds that suggest that they are more likely to extend their working lives (compared to a reference group of persons who had never provided care) (Finch, 2011).

Looking at the bivariate and multivariate analysis of this study (see Figure 73 and Table 24), it was apparent that among individuals who were above the SPA, caring status was not statistically significant and thus could not be associated with economic outcomes. Although research has found that men beyond the age of 65 are more likely to take on care responsibilities, the cell counts of men who are above the SPA in the present study were low. For this reason, no

strong conclusions could be formulated in reference to these individuals (see Table 24 and Table 25) (refer also to section 6.3).

It is important to note that research such as Finch (2011) who explored time spent caring and its effect on economic outcomes, refers to time spent caring in terms of *number of years* as opposed to *hours per week*. Using different units means that the generalisability of these previous results is restricted. Furthermore, other research which has explored the association between care hours and economic activity such as Vlachantoni (2010), focus on older data, do not focus on the age group of above SPA-74 years old inclusively, and do not categorise respondents in the same way as the present study. Arguably, this may have led to the differences in results of previous studies and that of the present research (see Table 24-Table 26).

To summarise, it is evident that the findings of the current study largely reflect the arguments presented by existing literature. Although at points there are discrepancies, the researcher of the current study notes the possible reasons this has been the case. The variables of age, marital status, LLSI, housing tenure, highest education, occupational social class and pension scheme membership have all in some way, been shown to be significant among respondents who are above the SPA. For the majority of the variables, significant findings are influenced by gender. Variation among respondents who are above the SPA is also evident; however, to gather a more holistic understanding of the characteristics which influence economic outcomes of individuals in later life, those who are below the SPA also are of interest. These respondents were examined by research question 2 and will follow in the next sub-section.

6.2.3 Research question 2: Factors associated with economic activity among individuals who are below the SPA

This section discusses the findings of the current and pre-existing research in relation to the second research question of this thesis.

In the previous sub-section 6.2.2, analysis of the BHPS by Johnson and Zaidi (2007), revealed that with increasing age, economic activity rates decline. In support of this, research by Whiting (2005) who uses the LFS to look at labour

market participation of older people, also has found that the proportion of people in employment drops significantly beyond the age of 50.

In line with pre-existing literature, the multivariate analysis of the current study which looked at individuals who were below the SPA (50-year prior to reaching the SPA), also found that the odds for being economically active were lower among older respondents (i.e. those aged 55-SPA) compared to younger individuals (i.e. those aged 50-54 years old) (see Table 27).

Research by the OECD (2011), examines trends of retirement in later life. They report that men leave the labour market on average later than the pensionable age, and that men on average retire later than women. In the current study, men and women were separated into independent samples to explore whether there were any gender differences in terms of the association between age and economic activity. Evidently, a significant association was found among the male sample, however no significant result was found for the female sample; indicating a gender difference (see Table 28 and Table 29). Interestingly, among the male sample, the only category that was statistically significant was the reference category; limiting the conclusions which could be drawn. However, the odds found among the other categories were supportive of existing literature, whereby the likelihood of being economically active decreased with increasing age. Research by Emmanouilidi and Kyriazidou (2012) who use the first four waves of the ELSA data to study labour market transitions of older persons in Britain, report that individuals aged 55-59 years old exhibit high variability in their employment transitions. Respondents identified as below the SPA, include this age group and thus arguably this high variability may have influenced the findings of the current study and may have been responsible for the lack of statistical significance beyond the reference category. Another argument to consider, is that the sample of women in the below the SPA participant pool, was smaller than that of males in this age group, which may have resulted in the female sample failing to identify a statistically significant result (see Table 13 and the discussion in section 6.3).

As has been discussed previously, marital status has been associated with economic outcomes. Khan (2009), using household LFS data to examine trends in labour market participation among older-workers, reported that

married/ cohabitating individuals are more likely to be in employment than persons who do not have a partner; particularly if the head of the family is below the SPA. This evidence is echoed by Dini (2009), who explored variations of economic activity status among older-workers in the UK and found that men aged between 50 and the SPA, who are married/in civil partnership or cohabitating, are more likely to be employed and less likely to be economically inactive than men in any other marital or civil partnership position. Dini (2009) also comments that women and men aged 50 to the SPA, who are widowed or whose partner has died, are less likely to be in employment than women or men of the same age in any other marital or civil partnership position. Notably, researchers Phillipson and Smith (2006) and Smeaton and McKay (2003) have also found evidence to suggest that being divorced can be motivational upon some individuals, particularly women, to leave the house, meet new people and to budget for one's family, resulting in economic activity.

Looking at the analysis of the current study, it was surprising to find that among the respondents who are below the SPA (men and women), marital status did not show a statistically significant association with economic activity (see Table 27). Nonetheless, through separating men and women into gendered groups, significant results were revealed (see Table 28 and Table 29). The results were in line with existing evidence, whereby it was found that among single men, the likelihood of being economically active was lower than that of married men; while for women those who were divorced were more likely to be economically active than married women (Smeaton and McKay, 2003;Phillipson and Smith, 2006;Dini, 2009;Braveman and Page, 2012). There are a number of possible reasons as to why marital status was not significant in relation to the analysis which examined men and women together (see Table 27). Firstly, the present analysis concentrates on a specific age-range, those 50-64 years old, and is focused on England as opposed to Dini (2009) and Khan (2009), who look at the UK as a whole. Notably, the current study also includes additional variables in the multivariate stage of the analysis, which may have led to significance of this variable being hidden by associations of alternative variables. Looking back towards the bivariate analysis (see Figure 52 and Appendix 39), it is evident that marital status was suggested to be

significant and thus associated with economic activity among individuals who are below the SPA. This evidence lends further support towards the argument that the model structure used in the more detailed multivariate analysis, may have had an influence on the significance of the result. Finally, the ratio of men to women in the sample was unequal (which also may have affected the results that were found) (discussed further by section 6.3). Existing studies have found that the association between marital status and economic activity differs between men and women, which may have complicated the results of the analysis which looked at the sample that included both men and women (Table 27), as the ability to find a consensual statistically significant result is likely to have been hindered.

Inspecting the odds of the significant results, it was evident that in line with Dini (2009), men who report a marital status of being married indeed appear to be more likely to be employed and less likely to be economically inactive than men in any other marital status. Additionally, among women, those who are divorced, have increased odds for being economically active, supporting the evidence found by Phillipson and Smith (2006).

Turning now to look at the theme of health, similarly to the findings which relate to individuals who are above the SPA (see section 6.2.2), the majority of research exploring this topic suggests that ill-health is associated with economic inactivity (Vickerstaff, 2010;Robroek et al., 2013;Virtanen et al., 2014). In fact, Macnicol (2015), who looks at data on older-workers sourced from the DWP, claims that ill-health is the most frequently cited reason for early exits, with the earlier the exit the more likely it is to be a result of ill-health. Phillipson and Smith (2006) echoes this finding and notes that earlier retirements are more often driven by health factors as opposed to financial aspects. The ONS (2012b-a) use self-reported health to illustrate a person's healthy life expectancy as it is a strong independent predictor of mortality. Likewise, evidence from Chanfreau et al. (2014) using the ELSA to examine changes to work and income around the SPA, has found that a majority of individuals who have a long-term illness are not even working before reaching the SPA, providing yet more support to the arguments of other existing research.

The bivariate analysis of this study confirmed there to be a significant association between health and economic activity among individuals who are below the SPA (see Figure 54 and Figure 56). For example, among individuals who were below the SPA, reports of 'excellent' SRGH were most common among economically active individuals, whereas reports of 'fair' and 'poor' health were more frequent among persons who were economically inactive (Figure 54). Economically active individuals also report no LLSI more frequently, and are less likely to report a LLSI, than individuals from the same age group who instead are economically inactive (Figure 56). Together, these findings reflect the conclusions of prior research on this area of interest (Sinclair et al., 2014;Macnicol, 2015).

Equally, the multivariate analysis of this study (see Table 27-Table 29), found the variables of SRGH and LLSI to be statistically significant. This provided evidence to suggest that economic outcomes are associated with poor SRGH and accounts of having a LLSI, among individuals who are below the SPA (men and women, together and separately), whereby these individuals have the lowest likelihoods for being economically active. These findings support previous literature surrounding health and its links to economic activity, which provides a sense of reliability from the current study's findings.

In reference to the theme of socio-economic variables, home-ownership has been identified as a major asset, which can influence economic activity (Dol and Horsewood, 2013). Researchers such as Smeaton and McKay (2003) and McNair et al. (2004), have found evidence from looking at survey data to suggest that financial commitments associated with housing and home-ownership, are associated with continued economic activity in later life. Smeaton and McKay (2003) report from their findings that persons (men and women) who have the highest probability of labour market participation, are those with outstanding mortgages on their properties. Looking towards the bivariate analysis, it was apparent that the percentage of individuals reporting this tenure type (in the current context being labelled as 'part-rent and part-mortgage'), was indeed largest among economically active respondents (see Figure 61).

Controlling for extraneous factors, Dol and Horsewood (2013), in their working paper which looks at the extent to which home-ownership affects retirement timings, found that individuals with mortgage-debt, more often delay their retirement (to beyond the SPA), while renters and homeowners with low net housing costs (rent/ mortgages) are more likely to retire early (prior to the SPA). Although there is an evident gap in the literature which looks at the association between housing tenure and economic activity (specifically among persons aged 50-59/64 years old), it was noted that many of the findings of the present study were supported by the analysis that has been discussed here.

Looking towards the multivariate analysis of the present study it was interesting to note that a significant association was found between economic activity and housing tenure (see Table 27-Table 29). Part-rent and part-mortgagees (men, women, men and women) were more likely than owner-occupiers to be economically active when below the SPA, and these same individuals have the highest (significant) odds of economic activity than any other tenure type (see Table 27-Table 29). These findings are conclusive with the results of the other studies.

A second socio-economic variable indicated by the literature to have a significant association with economic activity, is highest education. It has been noted that in developed economies, inadequate education, particularly among low-skilled individuals, can cause premature retirement due to it increasing ones risk of becoming unemployed and decreasing ones chances of receiving job offers (Stenberg et al., 2012). Whiting (2005) confirms this, whereby her analysis of the LFS has found employment rates decline among persons (who are below the SPA) with lower levels of education. Phillipson and Smith (2006) also note that individuals with a degree appear more likely to consider extending their working life in comparison to those who instead have no formal qualifications.

Looking towards the analysis of the current study, the multivariate results failed to identify a significant association between economic activity and highest level of education among individuals who are below the SPA (men and women) (see Table 27). Despite this, the odds found were complimentary to

the results of previous research exploring this association, whereby persons with no qualifications are less likely to be economically active than persons with a degree level of education.

It has been noted by research such as that by Scholes et al. (2008), that attainment of education can vary by gender; which the researcher attributes may have been the cause of the statistical significance not being found among the sample which examined men and women together (Table 27). Scholes et al., report that as a consequence of social roles, particularly among older women, stereotypes of women as caregivers have been barriers to women obtaining an education (Scholes et al., 2008).

Interestingly, the multivariate analysis confirmed there to be a gender difference in terms of this variable's association with economic activity outcomes. It was noted that the category of "no qualifications" was highly significant among the female-only analysis (see Table 29), whereby the odds found suggested that women reporting this education level are less likely to be economically active than women who possess a degree. The bivariate analysis revealed that women reporting 'no qualifications' represented the second highest percentage of females who were economically inactive, drawing parallel to the findings of Scholes et al. (2008) and research looking at the relationship between education and economic outcomes (see Figure 65). Although it was somewhat surprising not to find a significant association among men (see Table 28), it is important to recognise that the current study uses alternative data to other research, has a specific sample and uses multiple variables within its model, which may have resulted in the independent effect of this variable being masked by other variables. However, it is noted that the odds ratios attached to men were largely in line with what would be expected in light of previous findings from existing research.

The third socio-economic variable explored by the analysis, was car access. Gurley and Bruce (2005) using the first four waves of data from the Family Assistance Longitudinal Study (FALS), have reported there to be a positive relationship between car ownership/access and employment outcomes. Baum (2009) also suggests that vehicle ownership can promote work. Similarly, Raphael and Rice (2002) found large differences in employment rates, weekly

hours work and hourly earnings, among respondents between the ages of 16-65 years old who did and did not have a car.

Looking towards the analysis of the current study, it was evident that the multivariate and bivariate analysis found car access to be statistically significant (see Figure 66, Figure 67 and Table 27). The odds found consistently suggested that persons who had access to car, were more likely to be economically active compared to persons who instead did not; offering confirmation to existing study results surrounding the association between economic activity outcomes and car access in later life.

The literature review identified females to often be at a disadvantage in having car access (OECD, 2001;Raphael and Rice, 2002;Gurley and Bruce, 2005;Baum, 2009) and thus it was unsurprising to see within the multivariate analysis that there was a gender difference (see Table 28 and Table 29). Car access was not statistically significant among women (see Table 29) while for men it did note a significant association (Table 28). It is important to be mindful that other variables in the model may have soaked up the variance and masked this variable's independent effect in the female-focused regression. In light of the smaller number of women in this sample, it is important to remain aware of the implications this may have had upon the results (see Table 13 and section 6.3 for more details). Interestingly, the odds attached to this variable within the female-only regression did reflect the trends noted by existing literature, whereby individuals without car access showed less likelihood for being economically active (Dargay and Hanly, 2007).

The next socio-economic variable which was explored, and which has been shown to have a significant relationship with economic activity in later life, is occupational social class. Radl (2012a), who analysed social variability in retirement timing in Western Europe using data from the Survey of Health, Ageing and Retirement in Europe (SHARE), found that social class exerts a strong influence upon retirement processes. In their research, individuals who fell into the upper and lower end of the occupational ladder retired the latest. Phillipson and Smith (2006) also identify links between social class and economic outcomes in their literature review, which examines factors associated with extending the working life. They report that individuals from

routine/ semi-routine occupations tend to have fewer opportunities to work beyond the SPA compared to persons who are instead in managerial roles. Silcock (2012), who analyses the implications of extending working lives and its impact on retirement adequacy, also has found that a person's occupation type affects their likelihood of being in work in later life; whereby managerial workers and self-employed individuals are more likely to be in work at older ages than those in lower skilled and semi-routine occupations.

The current study reported a significant association between the variables of occupational social class and economic activity among individuals who are below the SPA, offering further support to existing studies that have investigated the association between these two variables (see Table 27). The significant categories included individuals in 'managerial', 'small employer' and 'semi-routine' roles. Looking at the odds attached to these categories, individuals who reported to be in, or to have been in, semi-routine roles or small employers, had odds which suggest that these individuals were more likely to be economically active compared to individuals in the category of managerial roles. These findings are in line with the results found by Radl (2012a) and Silcock (2012). In terms of the odds attached to small employers, research such as McNair et al. (2004) who analyse ONS data to help understand changing work in later life, reports that individuals who are small employers are very unlikely to change their job. Given the increased odds for economic activity among these individuals it may be that these respondents are also less likely to change from being economically active to inactive similarly to how they appear to not change jobs much either.

Notably, occupational social class for this study is based upon the reports of economically active and inactive respondents, whereas other studies look only at occupational social class reports of economically active individuals. For this reason, there may be differences in the significance of the results found and the trends in the data that were noted. Furthermore, the present study explores individuals who are specially aged below the SPA, defined as 50-59/64 years old, which once again is not repeated by other research which the finding are compared to. The occupational social class variable itself can be coded in various ways, and again, it is important to note that differences into

how the categories of this variable are collapsed and separated must be noted before generalisations of results can be confidently made.

Looking back towards the research of Radl (2012a), it is interesting to find that the association between social class and retirement timing was reported to be largely the same for women and for men. However, it is found that men are twice as likely as women to be in higher managerial roles, whereas women are more likely to be in intermediate occupations (Hall, 2006;ONS, 2013g). McNair et al. (2004) also report that there are significant gender differences between the categories of NS-SEC. McNair et al. (2004) suggest that some of the features of social class distributions attached (in this instance to job changes), may be a result of gender as opposed to class.

The male sample of the present study found a statistically significant result while the female sample did not; indicating a gender difference (see Table 28 and Table 29). This was partly unexpected given the conclusions of Radl (2012a), however this result does moderately appeal to the work of Hall (2006) and the ONS (2013g).

The final socio-economic variable considered, was pension scheme membership. The most common arguments presented by the literature suggest that contributions to a pension scheme, are most frequent among individuals who are below the SPA and economically active (Ginn and Arber, 2000;Abraham and Ledolter, 2006;Phillipson and Smith, 2006;Banks et al., 2014;Eurostat, 2014;Vlachantoni et al., 2015). Prior to the SPA, individuals are less likely to be in receipt of a pension, often as a consequence of age-eligibility rules (Eurostat, 2014). Initiatives designed to encourage private pension scheme memberships, such as auto-enrolment, have only been introduced in the past decade, consequently having limited benefits for the baby-boomers in terms of enhacing their pension contributions (Silcock et al., 2012;GOV.UK, 2014).

Examining the analysis from this study, the variable of pension scheme membership was statiscally significant across the bivariate and multivariate analsis (see Figure 69 and Table 27-Table 29). The data analysis confirmed that a higher proportion of individuals below the SPA contribute to a pension as opposed to receiving a pension, compared to individuals who are above the

SPA. Interestingly, the results from the multivariate analysis echoed the findings of exisiting literature, whereby among the individuals who either solely receive a pension, both contribute towards and receive a pension, or who were in the missing category, the likelihood of being economically active was lower than among individuals who solely contribute to a pension (see Table 27-Table 29).

The last variable identified as being statistically significant in the models, was caring status. The link between caring status and economic activity among individuals who are below the SPA, is highlighted by a variety of literature sources. For example, Census data for England and Wales notes that individuals aged between 50-59 years old are the largest proportion of people who provide care; of these individuals the majority are women (National Statistics Online 2003). Vlachantoni (2010), supports these findings and further sheds light through her analysis of the ELSA, whereby she reports that the majority of less intense care (defined as fewer hours), is provided by the younger-old (defined as 50-64 years old). Vlachantoni (2010) also reports that the proportion of carers who are employed/ self-employed, reduces as the intensity of care provided increases. However, what was particularly striking in the analysis of Vlachantoni (2010) was that the majority of carers were employed; with a quarter of 'round-the-clock' carers (aged 50-64 years old) reporting to be employed or self-employed!

Looking towards the multivariate analysis of this thesis, the association between caring hours and economic activity was consistently statistically significant (see Table 27-Table 29). The results revealed that among the samples which looked at men and women together, and women alone, the category labelled as 'missing', was statistically significant, whereby the odds indicated that these individuals were more likely than non-carers to be economically active. This brought some issues for the researcher in terms of how to interpret. Looking towards the methodology (section 3.5.1.1.2.5), it is apparent that identifying these individuals simply as 'carer' and 'non-carer', was not possible, thus respondents in this group were hard to distinguish in terms of their caring status. Yet, their relationship as respondents was suggested to show a significant association with the variable of economic activity. Lack of detail surrounding the respondents in this category however,

does not permit the researcher to draw any firm or reflective conclusions beyond what the odds did show (further details can be found in section 6.3). The researcher could confidently conclude however, that in the male sample, men who are below the SPA and providing 50+ hours per week of care, are less likely to be economically active than non-carers who are below the SPA (as this category was not ambiguous) (Table 28). This result supports the conclusions drawn by Vlachantoni (2010) relating to care intensity.

Vlachantoni (2010) notes gender differences in her research, whereby men aged 50-64 years old are reportedly more likely to be economically active than women, both among carers and non-carers. Although both the female and male-only samples found caring status to be statistically significant, the categories identified as significant, did differ; providing some supportive evidence to demonstrate a gender difference. Despite this, due to the discrepancy in the numbers of men and women in the below the SPA (see Table 13), and the category of 'missing' more often being significant as opposed to the categories which could better define the specific number of hours a person provided care per week, the ability of this variable to show more distinct gender differences, was somewhat restricted.

To summarise, alike to the first research question, many factors associated with economic activity in existing research, continue to show significant associations with economic activity in this study. The variables of age, marital status, SRGH, LLSI, housing tenure, highest education, car access, occupational social class, pension scheme membership and caring status showed significant relationships with economic activity among individuals who were below the SPA. As before, gender differences were evident and variations in the significance across these variables were reflected across the analysis. These findings contribute to our understanding of characteristics associated with economic outcomes. The following sub-section (section 6.2.4) comments on the most pronounced differences between respondents who are above/ below the SPA. This sub-section will also draw reference to the differences between those who were economically inactive or active.

6.2.4 Research question 3: The most pronounced differences between persons who are economically active or inactive, above/ below the SPA

The final research question of this thesis sought to identify the most pronounced differences between the factors associated with economic outcomes (economic activity and inactivity), among individuals who are 'above' and 'below' the SPA.

Beginning with the variable of age, pre-existing research has found a wealth of evidence to show that older adults are less likely to be economically active than younger individuals (Johnson and Zaidi, 2007). The results of the current study were in line with existing findings, whereby the bivariate analysis revealed that the percentage of individuals who were economically active was lower among respondents who were 'above the SPA', compared to respondents who were 'below the SPA' (see Figure 48). The multivariate analysis continued to highlight a significant association between the variable of age and economic activity among respondents who were 'above' the SPA, however age was only statistically significant among men identified as 'below' the SPA (see Table 24 and Table 28). Despite lack of statistical significance among the other below the SPA regressions (Table 27 and Table 29), the odds noted did confirm the findings of previous literature, whereby with increasing age the likelihood of being economically active, decreases. The researcher attributes that the lower number of women in this sample may have been responsible for this variable not proving to be significant for the other regressions (see Table 13 for more details of the sample size and section 6.3 for comment on the possible implications of this). However, these findings may also indicate that the influence of age as a factor associated with economic activity outcomes, may play a more influential role among those above the SPA, while among those who are below the SPA other factors such as health are more important in determining economic activity outcomes (Macnicol, 2015).

An interesting illustration of this can also be demonstrated by the evidence of age being statistically significant among women who were above the SPA while caring status was not statistically significant, whereas the reverse was true among SPA sample who were below the SPA (see Table 29 and Table 29).

Johnson and Zaidi (2007) note from their analysis of BHPS data that the career trajectories of women are very different to men, as women tend to exhibit more diverse routes with more interruptions, while the participation rates of men between the ages of 15 to 64, are relatively unchanging. Johnson and Zaidi (2007) identify that social surveys conducted during, and immediately after the second world war, indicated that a general belief at the time was that married women (with or without children), should not go to work and should instead be care providers. Caring has been identified to be predominantly undertaken by women, especially prior to the age of 65 (Tajfel, 1972;Hogg and Reid, 2006). Evidently, the current research results largely support existing evidence surrounding the association between age and economic activity however, the findings of the present study have also highlighted evidence to show how at ages prior to the SPA, this relationship can vary between men and women.

A second variable which has been associated with economic outcomes in the literature, relates to marital status (Smeaton and McKay, 2003;Phillipson and Smith, 2006;Dini, 2009;Braveman and Page, 2012). Looking at existing research the arguments that are discussed predominantly report that persons (regardless of whether they are above/ below the SPA) who are married or divorced, are more likely to be economically active than persons who are instead widowed or single (Dini, 2009;Khan, 2012). The analysis of the current study failed to find a statistically significant result to indicate an association between marital status and economic activity outcomes among respondents (men and women together) in the 'above' and 'below' SPA groups (see Table 24 and Table 27). This was somewhat surprising, however previous studies have reported that the association between marital status and economic activity is particularly influential among women (Dini, 2009;Smeaton et al., 2009b). The researcher attributes the unequal number of men and women in the 'above' and 'below' SPA groups to underlie why these associations were not statistically significant in multivariate analysis (see Table 13 and section 6.3 for further details). Interestingly, when gender was controlled for, the analysis revealed that men and women (studied independently) who are below the SPA, in fact report a significant association between marital status and economic activity (see Table 28 and Table 29). Whereby, the odds which were

statistically significant mimicked the trends noted by pre-existing studies which explore the association between marital status and economic activity (Smeaton and McKay, 2003;Phillipson and Smith, 2006;Dini, 2009;Braveman and Page, 2012). Interestingly, among respondents who were above the SPA, the female sample also reported a statistically significant association between marital status and economic activity however, among men in this age group no statistically significant result was indicated. Fewer men in the study sample reported to be 'above the SPA' thus when these individuals' responses were divided down further into the four response categories of the marital status variable, the male sample may have struggled to find a statistically significant result due to small sample numbers. However, the lack of statistical significance of this result does appeal to original findings of previous studies which have identified that the association of marital status with economic activity to be stronger among women (Dini, 2009;Smeaton et al., 2009b). A final argument surrounding the evident differences in the results of men and women, who are above/ below the SPA, relates to their age. Research has found that marital status is closely associated with a person's age whereby reports of being married, widowed or divorced, appear to increase with age (ONS, 2015a). Women, due to their higher life expectancies are identified as being more likely to become widowed (Orfila et al., 2006). This was supported by the bivariate analysis (see Figure 52), where it was noted that reports of being widowed were higher among women and highest among women who are above the SPA. Due to the current research splitting the respondents into two age samples (above/ below the SPA), these differences may have been masked as persons in each sample were alike in age (+/-10 to 15 years). Furthermore, it was evident that the number of men in the sample of respondents who were above the SPA, was particularly small, while the number of men in the sample of respondents who were below the SPA exceeded the number of women (see Table 13). Consequently, the gender differences in terms of the association between marital status and economic activity may not have been as effectively captured, potentially influencing the significance of the results found.

Moving on, towards the theme of health, existing research which looks at the association between health variables and economic activity reports that working up-to and beyond the SPA is associated with positive evaluations of

health (Disney et al., 2006;Doshi et al., 2008;Börsch-Supan et al., 2009;van den Berg et al., 2010;Rice et al., 2011;Gessa, 2015). Researchers including Macnicol (2015) and Phillipson and Smith (2006) report that the most frequently cited reason for early exits from the labour market is ill-health; whereby earlier exits often are more likely to be a result of ill-health as opposed to factors such as financial incentives. The bivariate analysis, confirmed that the percentage of respondents reporting ill-health (i.e. 'Yes, I have a LLSI' and accounts of 'poor' SRGH) was highest among individuals who were below the SPA and economically inactive, supporting the evidence noted by Macnicol (2015) and Phillipson and Smith (2006) (see Figure 55 and Figure 56). Looking at the multivariate analysis, the variables of 'SRGH' and 'LLSI' were statistically significant across the analysis relating to individuals below the SPA (men and women, men-only, women-only). This reinforces the findings of previous studies which suggest that health is associated with economic outcomes, whereby ill-health appears to lead to economic inactivity, particularly earlier in life. Looking towards the findings attached to individuals who were above the SPA the results once more demonstrate evidence to support pre-existing arguments surrounding ill-health's association with economic inactivity (Disney et al., 2006;Doshi et al., 2008;Börsch-Supan et al., 2009;van den Berg et al., 2010;Rice et al., 2011;Gessa, 2015). Evidently, among individuals who were above the SPA and economically active, the percentage accounts for reporting 'No, I do not have a LLSI' exceeded that of the other groups (the only exception being among individuals who were below the SPA and economically inactive, who reported the largest percentage of these ill health reports) (see and Figure 56). This was somewhat expected given statistics from the ONS, who in 2012 noted that the prevalence of a long-standing illness or disability, is higher among individuals who are older (ONS, 2014)). Looking towards the multivariate analysis of this group of respondents, the LLSI variable was statistically significant (among men and women together), suggesting that this variable is associated with economIc activity outcomes (see Table 24). However, looking towards the gendered analysis, the male sample failed to find a significant result for this variable (see Table 25). Researchers such as Vlassoff (2007) identify that there are gender differences in terms of health issues experienced and the influence that they have upon economic outcomes. Orfila et al. (2006) sheds further light on this

and identifies that although women tend to on average live longer than men, issues relating to chronic illness and disability are most prevalent among women, particularly in later life. The variable of 'LLSI' evidently reveals a significant association with economic outcomes among the female sample of respondents who were above the SPA, lending support to the work of Orfila et al. (2006) (see Table 26). However, the variable of SRGH was insignificant throughout the analysis (see Table 26, and also Table 24 and Table 25). Arguably, through having multiple variables in the model, the independent effect of this characteristic may have been masked or alternatively due to this variable being uniquely derived (see section 3.5.1.1.2.2), the ability to compare this variable to other findings was restricted. Notably however, the odds of the SRGH variable, although insignificant, support the arguments that ill-health increases the likelihood of a person being economically inactive.

The third theme of this thesis, focused on socio-economic variables. Of the variables which fell under this theme, the variable of housing tenure was shown to be consistently significant across all of the analysis (bivariate and multivariate: men and women, men-only, women-only) (see Figure 61 and Table 24-Table 29). The literature which has explored this association, reports that individuals (above/ below the SPA) who are homeowners, are among the most likely to become economically inactive as a result of having less incentives not to take retirement compared to persons with more monthly outgoings (i.e. those who need to pay rent or pay off their mortgage) (Frogner, 2002;Smeaton and McKay, 2003). Evidently, looking towards the multivariate analysis it was found that the category of 'part-rent and part-mortgage' showed odds which were higher than owner-occupiers for being economically active in later life (this was true of Table 24-Table 29). The findings of the analysis were complementary of existing findings surrounding housing tenure's association with economic outcomes.

A second socio-economic variable examined by the current study, was highest educational qualification. Researchers such as Stenberg et al. (2012) and Clayton (2008), identify evidence to show that low or inadequate education can cause premature retirement and result in economic inactivity in later life. Building on this, Phillipson and Smith (2006) suggest that individuals who have a degree are more likely to extend their working lives than individuals who

instead have no formal qualifications. Looking towards the findings of this study, this variable showed a statistically significant result for respondents who were above the SPA, however those below the SPA did not find this variable to be statistically significant (see Table 24 and Table 27). In line with existing research, education levels lower than degree (low level education and no qualifications) had odds associated with a higher likelihood of being economically inactive (see Table 24) than degree level achievers, while respondents with 'no education' were less likely to be economically active (see Table 27).

In existing research, gender differences in terms of the influence of highest level of education upon economic outcomes has been emphasised (Scholes et al., 2008). According to Scholes et al. (2008), previous analysis of the ELSA has shown that women are less educated than men, with the most pronounced difference being among older respondents. Looking at the analysis, it was evident that among respondents who were above the SPA, only the male sample found a significant association; whereas among individuals who are below the SPA, only the female sample found a significant result (see Table 25 and Table 29). The bivariate analysis revealed that the variation in education level was complex among respondents who were male and female, above/ below the SPA. The researcher attributes that this, combined with the unequal number of men and women in each of the SPA defined samples (see Table 13), may have had an impact on the significance of the findings when controlling for gender (discussed further by 6.3). Finally, the additional variables which accompanied this variable in this model may have masked its independent effect due to the age differences of respondents in the two samples (above vs. below the SPA).

A third socio-economic variable which research has suggested to be associated with economic outcomes, was car access. According to the literature, with increasing age, persons become more likely to give-up driving and have less access to transport (Hjorthol, 2013). Car access has been associated with employment, whereby persons with car access are suggested to be more likely to be economically active than those who do not have access to a car (Raphael and Rice, 2002;Baum, 2009). The bivariate analysis (refer to Figure 67 and Figure 66) demonstrated that among economically active individuals, car

access appeared to be higher than that reported by economically inactive individuals, providing further support to evidence presented by researchers such as Baum (2009) and Raphael and Rice (2002). Looking towards the multivariate analysis, it was interesting to note that individuals who were above the SPA consistently found this variable to be statistically not significant (see Table 24-Table 26), while among respondents who were below the SPA the results were statistically significant (except for the female-only regression which was not statistically significant) (see Table 27-Table 29). In light of the evidence that car access generally is higher among younger individuals (Hjorthol, 2013), the current research argues that this variable is hence more influential upon economic outcomes among the younger respondents in the sample who were identified as being below the SPA. Research has also demonstrated car access to be more prevalent among men, which further may help to explain the evident gender difference noted among the sample of respondents who were below the SPA (OECD, 2001;Raphael and Rice, 2002;Gurley and Bruce, 2005;Baum, 2009). In line with expectations, car access is associated with economic activity, while inactivity is associated with no access to a car.

A fourth socio-economic variable considered by this study was occupational social class. According to research by Radl (2012a) using data from Western Europe (SHARE) to examine social variability in retirement timing, social class has a strong influence upon retirement outcomes whereby individuals who are in the upper and lower ends of the occupational ladder are those who retire the latest. Additionally, it has been reported that older adults are more likely to be employees at small companies (ONS, 2012b-c). This evidence was echoed by literature which has examined respondents who are both above/ below the SPA (Phillipson and Smith, 2006). Exploring the results from the current study, this variable was shown to be statistically significant across the analysis conducted, with the only exception being women below the SPA who failed to find a statistically significant association (see Table 24-Table 29). Looking at the significant results, complimentary to existing literature ((such as research by Radl (2012a)), individuals in the lower end of the social ladder (semi-routine category) showed increased odds of being economically active. It was also evident from the analysis that among respondents who were above the SPA

(men and women; men only; women only) and below the SPA (men and women; men only), individuals who were/ had been 'small employers', were more likely than persons in managerial roles to be economically active (see Table 24 and Table 28). Research from the ONS provides evidence to suggest that older-workers are more likely to work in smaller firms which offers support to the results that were found by earlier studies (ONS, 2012b-c).

In terms of gender differences, the majority of research that was reviewed suggested that the way in which social class influences retirement timing is largely the same for women and for men (Radl, 2012a). This finding was supported by the evidence found in the current study relating to respondents who were above the SPA. However, among individuals below the SPA, a gender difference was evident, whereby the female-only analysis failed to identify a significant result. The lack of statistical significance attached to women below the SPA was arguably a result of the small number of women in this particular sample. Additionally, alternative variables in the model may have soaked up the effect of this variable resulting in it appearing not to be significant.

The final socio-economic variable examined by this research, was pension scheme membership status. Existing studies suggest that beyond the SPA, withdrawal from pensions becomes increasingly likely (Eurostat, 2014). Private pensions play an important role in financial preparedness for retirement (Banks et al., 2014), thus it is unsurprising to note that economic activity has been linked to pension contributions, whereas economic inactivity has been associated with pension receipt (Eurostat, 2014). The findings of the current study compliment the results of existing research interested in this association. Pension scheme membership was statistically significant across the analysis (Table 21-Table 29) whereby it was noted that individuals who report to contribute to a pension scheme, have higher odds of being economically active compared to those who are receiving a pension, both contributing to and receiving a pension, or, who fell into the missing category of this variable.

The fourth theme explored by this study was geographical factors, whereby the variable of region was explored. According to research, the majority of older-workers congregate towards the south of the UK, while areas which progress northwards show deteriorations in percentages of older-workers in

employment (ONS, 2013f). Beyond the bivariate analysis, region was not identified as being statistically significant. The researcher notes that the cell counts attached to the response categories of this variable were small (see Appendix 44), particularly when the samples were divided by gender and age, which may have reduced the ability of this variable to detect a significant results, especially in the context of multiple other variables (discussed further in section 6.3).

The final theme and variable examined, was caring status. The agreement across the literature suggests that younger individuals are more likely to be care providers; whereby women below the age of 65 tend to be the most frequent persons to provide care, whereas beyond this age this responsibility appears to shift towards being a male role (National Statistics Online 2003). Research argues that providing care can influence the number of hours a person spends as economically active, whereby the intensity of care that is provided can particularly influence decisions to remain economically active or not (Phillipson and Smith, 2006;Vlachantoni, 2010;Finch, 2011). Looking at the multivariate results, among respondents who are above the SPA, caring status did not prove to be statistically significant (seeTable 24-Table 26). However, among the respondents who are below the SPA, the multivariate analysis revealed caring status to be a statistically significant across the regressions (men and women together, and independently). It could therefore be said that caring status is associated with economic outcomes among individuals who are below the SPA (see Table 27-Table 30). Examining the categories that were significant and their relevant odds, the analysis consistently identified the reference category of 'non-carer' to be significant. Among the analysis which looked at men and women together, and women independently, the missing category was also shown to be statistically significant. The odds attached to the missing category suggested that respondents in this category were more likely than non-carers to be economically active. The current study, as is discussed later in section 6.3 of this chapter, was restricted in terms of identifying exactly who 'missing' respondents were in respect to their caring status, which made it difficult to draw any strong conclusions from these findings. Despite this, it was noted among the male-only regression that the category of '50+ hours per week'

was statistically significant, permitting more detailed conclusions to be drawn in relation to this regressions' results. The odds attached to this category suggested that these individuals had a lower likelihood of being economically active compared to individuals who are instead non-carers. This offers support to the existing body of literature surrounding the intensity and duration of care having a negative relationship with economic activity in later life (Phillipson and Smith, 2006;Vlachantoni, 2010;Finch, 2011). This result however was also somewhat surprising as research in the past has suggested that the tendency for caring to become male dominated is more frequent among those who are above the SPA (National Statistics Online 2003), while this significant result was only pinpointed among the males who were below the SPA. Arguably, the higher cell counts of males in the below the SPA sample may have influenced this result (see section 6.3 for further comments on this). The evidence gathered from the analysis however, remains insightful as it supports the conclusions drawn by existing studies surrounding the provision of care acting as a barrier to economic activity (Phillipson and Smith, 2006;Vlachantoni, 2010;Finch, 2011). Evidently, the significance of the caring status variable among the below the SPA sample (who are more likely to be part of the 'sandwich generation'), offers support to existing research which identifies caring to be particularly influential upon economic activity outcomes of younger persons (who are likely to be juggling more responsibilities such as economic activity, child and elder-care, compared to older adults) (Neal and Hammer, 2007).

The results presented in Table 35 help to create a visual picture of the findings discussed in sections 6.2.2 and 6.2.3.

Table 35: Significant and not significant independent variables among respondents who are above/ below the SPA, by gender, ELSA 2010.

Green cells identify results which had been statistically significant (95% CI p< 0.01, p< 0.005 or p< 0.001), red cells identify where results had not been statiscally significant, black cells indicate where analysis was not computed.

Source: Author's own.

Examining Table 35 can help expand our understanding of how men and women who are above/ below the SPA are diverse in terms of the variables which are associated with their economic outcomes. Evidently, all of the variables included within this analysis were suggested to be statistically significant supporting the literature review which presented evidence to show that these variables have been found to play a significant role by pre-existing studies.[34] The added value of the present study however, relates to its ability to differentiate whether respondents were above/ below the SPA and their gender, enabling the researcher to better understand the role these variables play. Synthesising the trends in the data among persons who are above/ below the SPA, and who are male and female, enables the researcher to see the number of times a significant result had been found. Among individuals who were above the SPA, the variables of housing tenure, occupational social class and pension scheme membership were the most commonly found to be statistically significant and thus associated with economic activity outcomes in this group. Whereas, among individuals who were below the SPA, the variables of SRGH, LLSI, pension scheme membership and caring status were the most frequently found to be statistically significant and thus associated with economic outcomes. The significant results of men and women, were also different. Evidently, the variables of age, occupational social class, car access and region were more influential upon the economic outcomes of men than they were of women's. On the other hand, the variables of marital status, LLSI and CASP-19 appeared to be more influential upon women than they were upon men.

6.2.5 Summary of research question findings

This chapter has discussed the key findings of the research in response to the research questions of this thesis and in relation to existing literature in this topic area. The findings show that economic outcomes of older adults are often associated with the demographic, health, socio-economic, geographical and caring-related factors that an individual possesses. The variables of age, gender, marital status, ethnicity, self-reported general heath, reports of a LLSI,

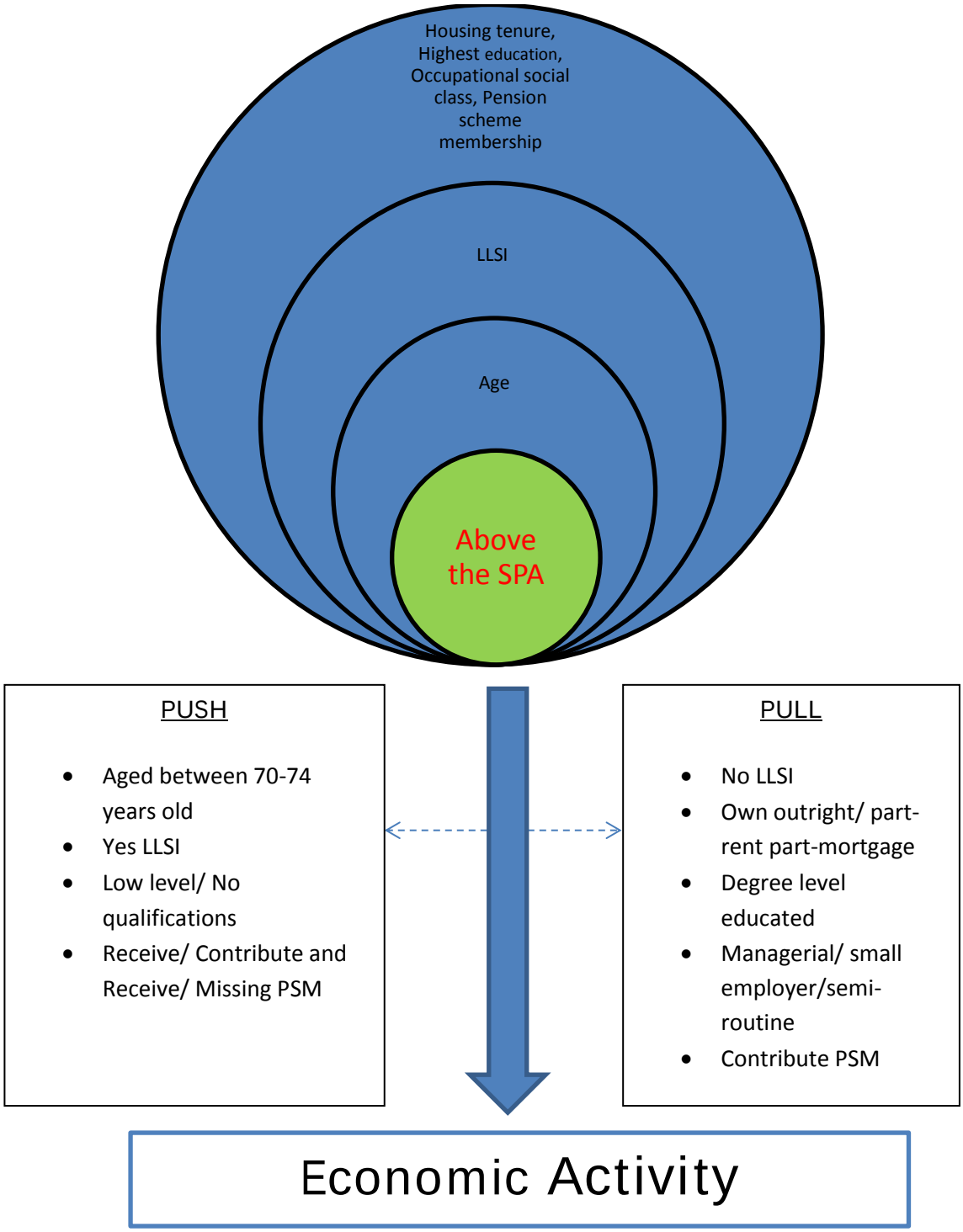
[34] Although ethnicity and QoL at the multivariate stage of the analysis later became not statistically significant, bivariate stages of analysis did note significant results (see chapter 0).

QoL, housing tenure, highest level of education, car access, occupational social class, pension scheme membership, region and caring status at, at least one stage of the analysis (bivariate or multivariate) were demonstrated to be significantly associated with economic outcomes. There were evident differences between persons who are above/ below the SPA in the factors that were statistically significant and thus associated with their economic outcomes. For example, the multivariate analysis has shown that among persons who are above the SPA, the variables of age, LLSI, housing tenure, highest level of education, occupational social class and pension scheme membership are associated with economic activity outcomes. In contrast, among individuals who are below the SPA, the variables of SRGH, LLSI, housing tenure, occupational social class, car access, pension scheme membership and caring status are associated with economic activity outcomes. The findings of the present study are mostly consistent with the literature and where there are discrepancies, it is possible that additional factors are part of the relationships that were studied. Perhaps the most important part of the findings relates to the ability of the study to examine the combined influence of the variables and the associations they have with economic activity among individuals from two age groups (those of individuals who are above the SPA and those who are instead below the SPA), and further among men and women separately. The thesis has shown that some variables are significant for some individuals, while those who are of a different gender or different age group may not appear to be influenced by such factors. Additionally, this thesis has the ability to demonstrate using odds the relative magnitude and direction relationships between variables have, on a categorical level, helping us to gather a clearer perspective of how these associations interrelate. The findings of this thesis can be informative for future research and their analysis, interested in the topic of factors associated with economic outcomes among older adults.

In conclusion, Figure 75 to Figure 80, together revisit the conceptual framework of the thesis (first illustrated in section 2.7), and reconsiders the relative importance of the factors, helping us to understand the association and relationships between demographic, health, socio-economic, geographical and caring characteristics with economic activity outcomes of older adults. Generally, the analysis found that demographic, health, socio-economic, geographical and caring-related factors affect economic activity outcomes

among adults in later life independently and in combination. However, as discussed throughout this thesis the association between variables suggested to be associated with economic outcomes can become more complex when controlling for age and gender. The characteristics identified as significant and which can be said to be associated with a person being economically active among the different groups of individuals have been unpacked through revising the conceptual framework and creating separate frameworks for men and women who are above/ below the SPA. Through adjusting the final outcome box to read 'Economic Activity' as opposed to the original 'Economic Outcome', the framework has become clearer in terms of its focus and acts as a particularly interesting reference point for policy-makers interested in the topic of extending working lives. In total, six frameworks are illustrated which each reflect the significant variables relevant to the groups of interest of each particular framework. The variables which were significant feature under their designated arch (which represent the themes: Demographic, Health, Socio-economic, Geographical and Caring), while the variables which were not significant have been omitted from the framework. Additionally, the push and pull elements of the framework in these revised versions now include more detail whereby the significant categories and the relationship suggested by the odds are noted. As opposed to having the generic 'individual' at the centre, the frameworks which look at men and women together use a green central circle, while for men-only a blue circle is used and for women-only a pink circle is used (age details are noted within this same circle via text). The revised conceptual frameworks highlight the heterogeneity between individuals who are above/ below the SPA, and who are male and female. These frameworks provide a useful foundation for policy-makers offering insight into the factors, which appear to influence whether a person is economically active in later life.

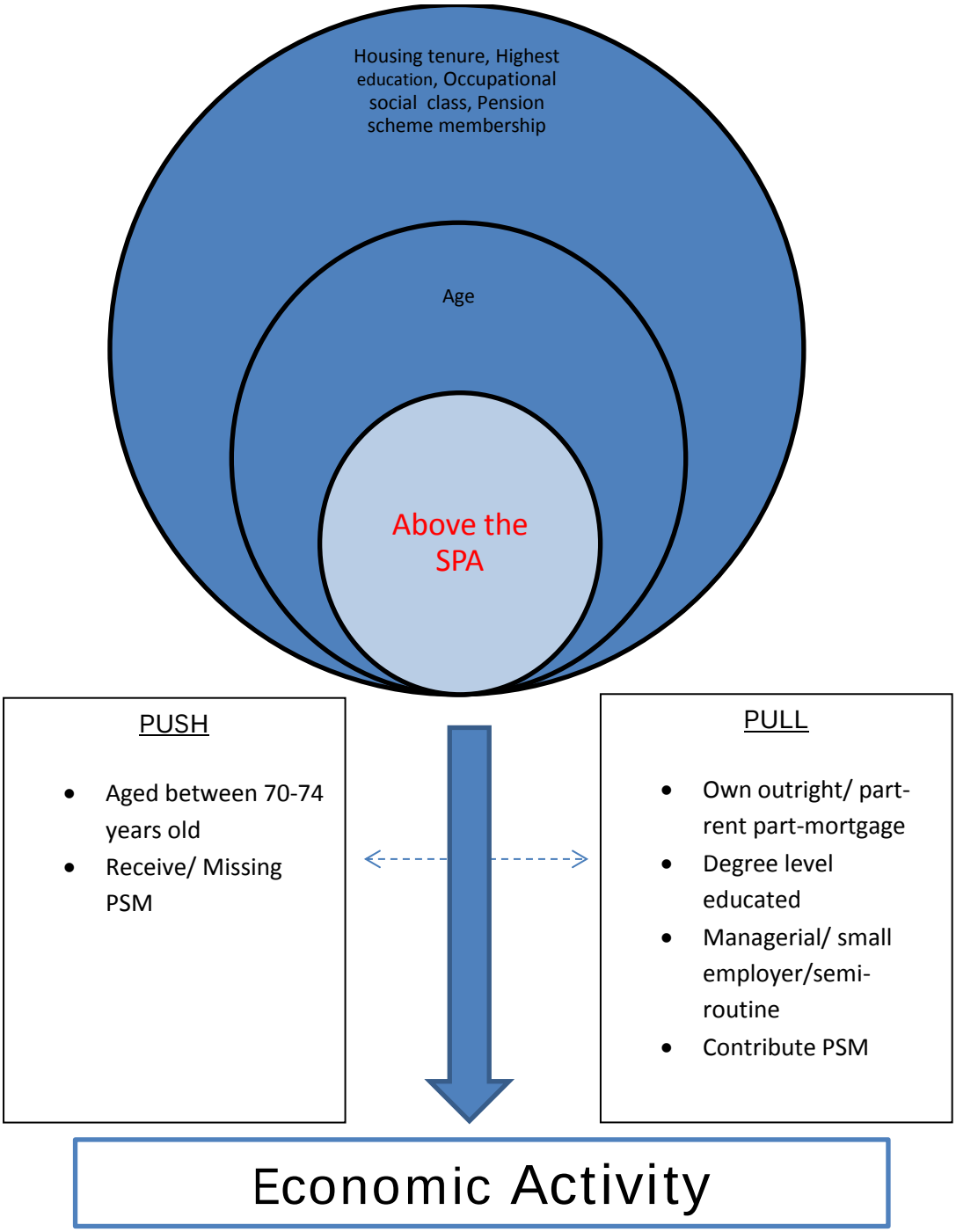
Figure 75: Factors associated with economic activity among men and women who are above the SPA: Outcome of study findings



Source: Author's own

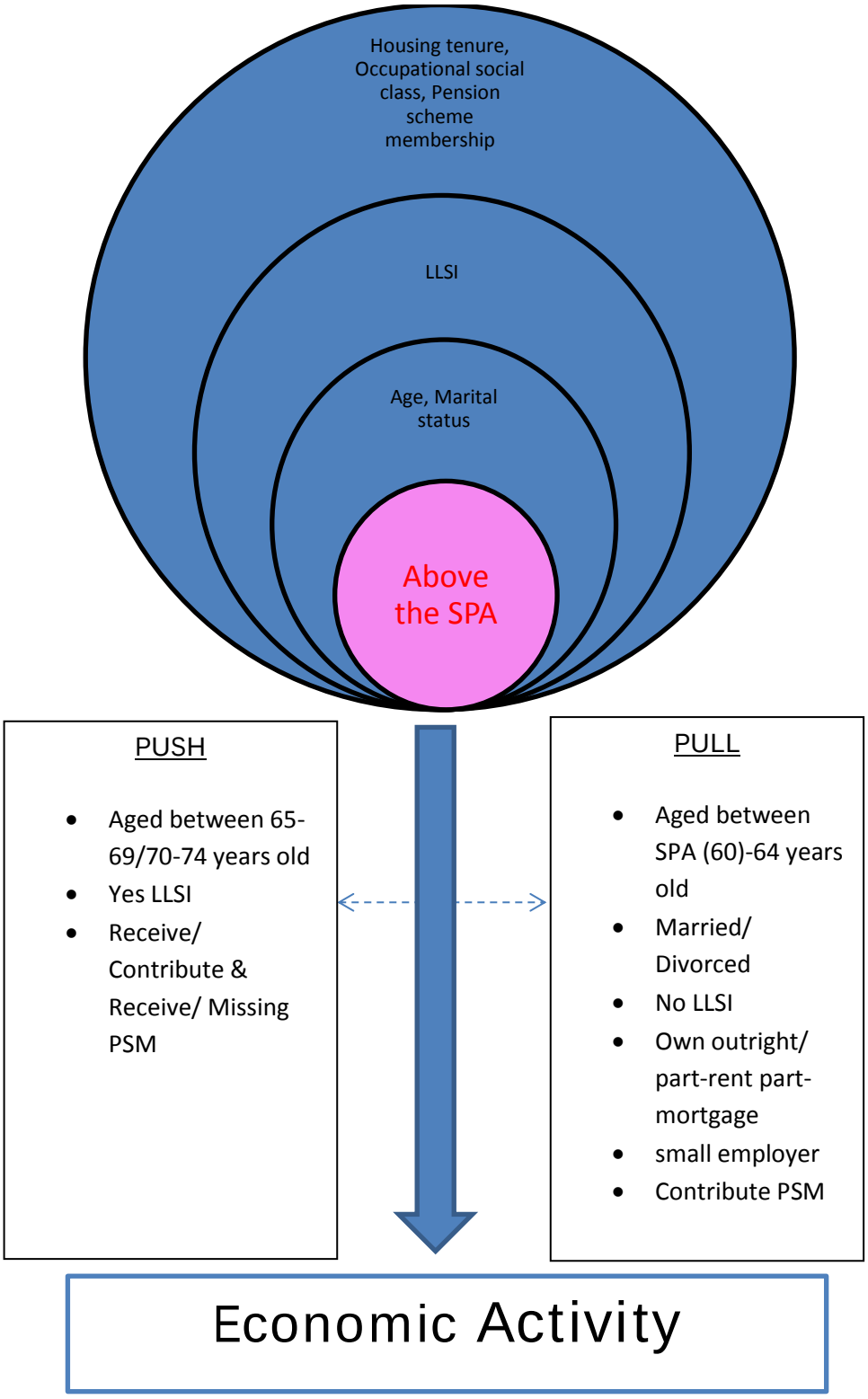
Note: PSM=Pension scheme membership

Figure 76: Factors associated with economic activity among men who are above the SPA: Outcome of study findings



Source: Author's own
Note: PSM=Pension scheme membership

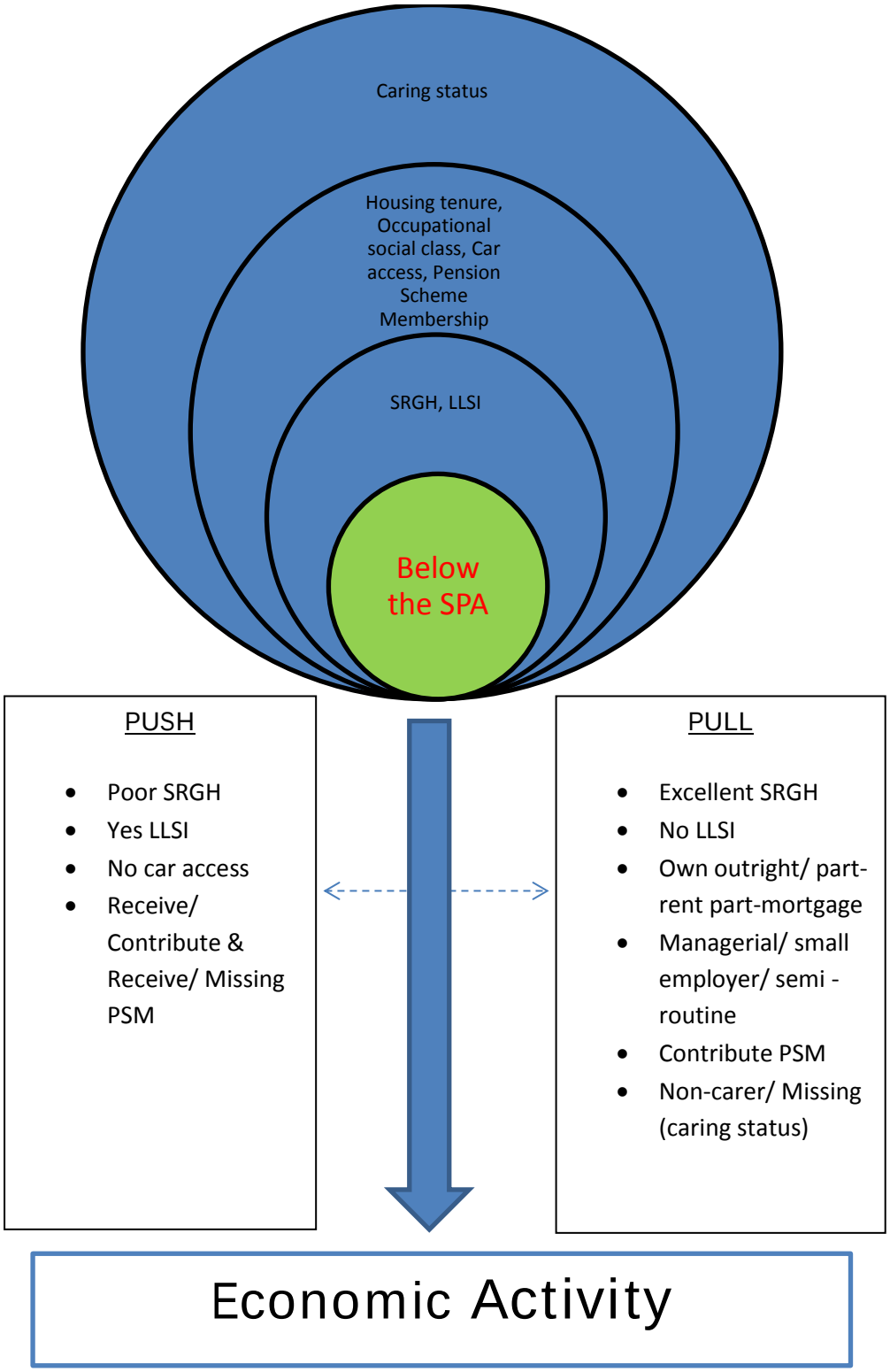
Figure 77: Factors associated with economic activity among women who are above the SPA: Outcome of study findings



Source: Author's own

Note: PSM=Pension scheme membership

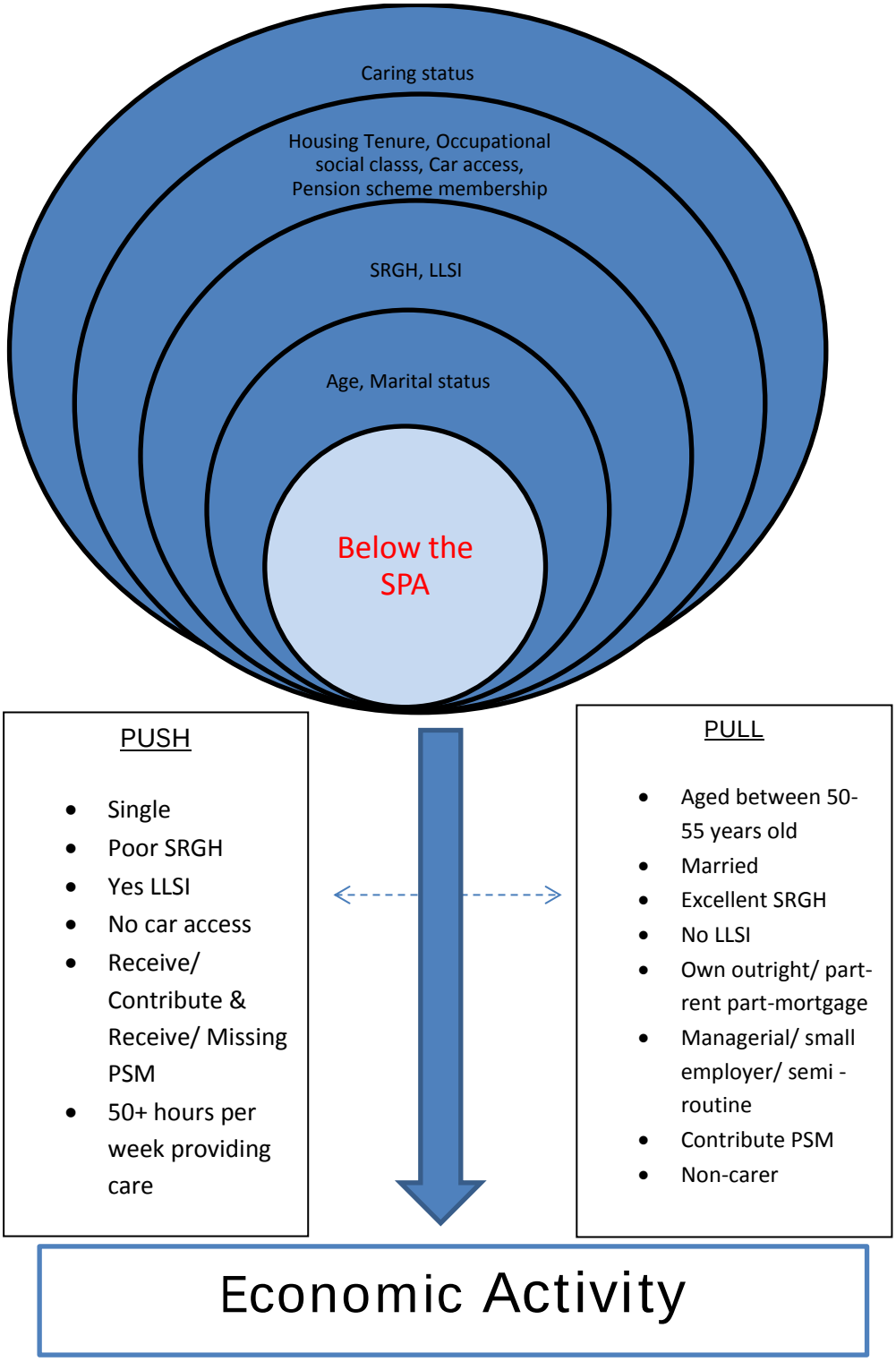
Figure 78: Factors associated with economic activity among men and women who are below the SPA: Outcome of study findings



Source: Author's own

Note: PSM=Pension scheme membership

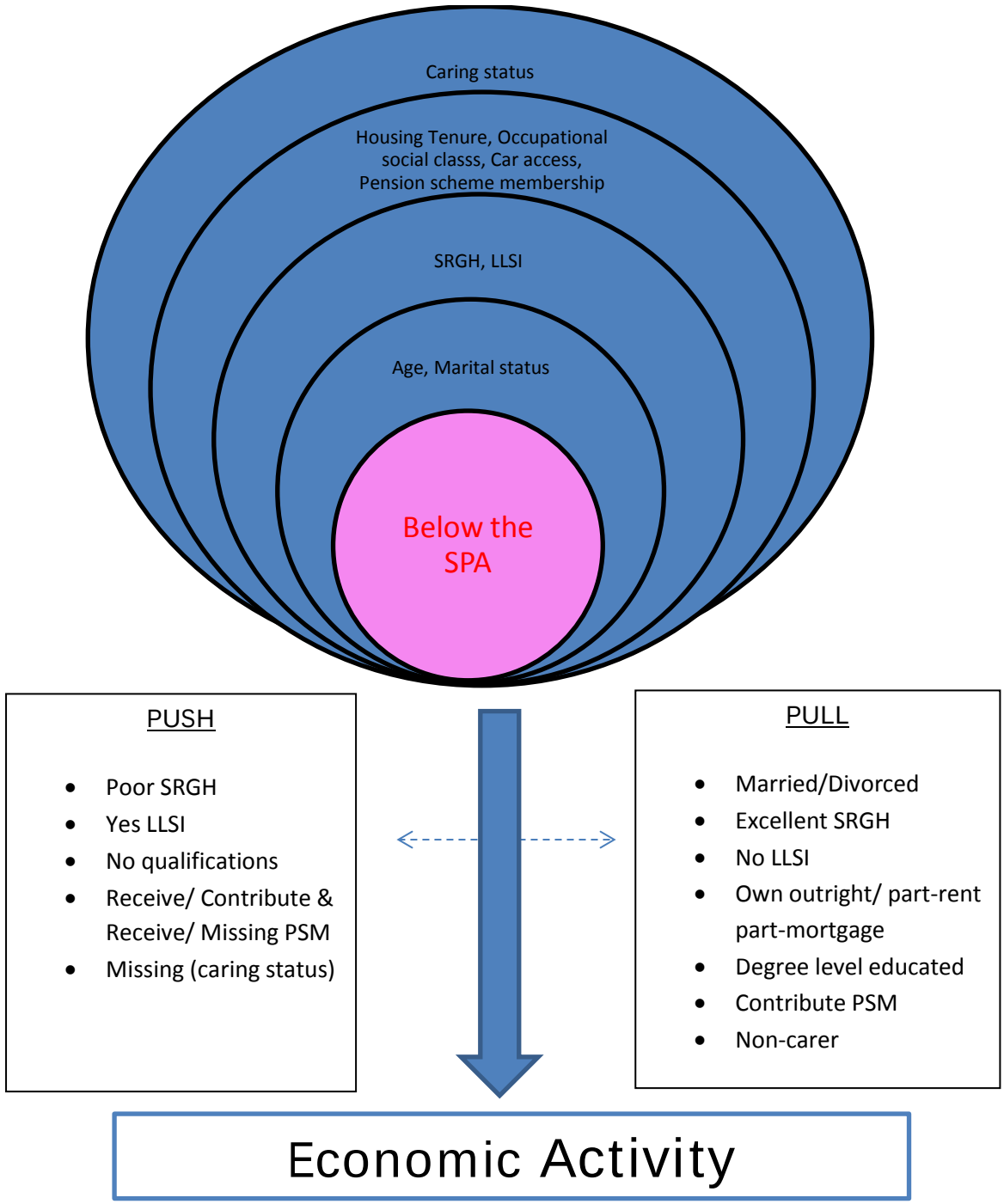
Figure 79: Factors associated with economic activity among men who are below the SPA: Outcome of study findings



Source: Author's own

Note: PSM=Pension scheme membership

Figure 80: Factors associated with economic activity among women who are below the SPA: Outcome of study findings



Source: Author's own

Note: PSM=Pension scheme membership

6.3 Limitations of the research

As is the case for all research, there were some unavoidable limitations and shortcomings to the current study.

First, due to using secondary data the analysis of this study was restricted to the respondents sampled, the questions asked and the responses noted by the data collected from the chosen survey, the ELSA. This survey is constrained to England, restricting the generalisability of this research. Interestingly however, the literature review has suggested that many of the individual characteristics included by the analysis of this study influence economic outcomes among persons living in other countries in a similar way. The potential to probe participants for clarification of their responses is not obtainable when using secondary data. Instead, the current study relied on the researcher selecting appropriate variables she felt could help address the interests of the research questions. This required the researcher to interpret what the questions were asking and what the respondents meant from their answers (thus was subjective to the researcher). Manipulating the data to reflect the interests of the research revealed how using secondary data can present issues. One example of this is demonstrated during the analysis of the 'caring status' variable. Due to filtering of the ELSA questionnaire participants sometimes were not asked further questions. For instance, if respondents had not provided care in past month they were not asked later if they had provided care in past week and how long this was for.[35] When deriving the 'caring status' variable a number of respondents fell into a category which the researcher labelled as 'missing'. As a consequence of filtering, these respondents had not mentioned if they provided care and thus had not later been asked the question about the number of hours of care they provided. For this reason, these respondents did not fit into the other categories of this variable as their caring status could not be confidently interpreted.[36] Using

[35] The filters were dependent on respondent answering [wpactca]/ [WpAct=4]. Refer to main questionnaire of Wave 5. Responses of "not mentioned" furthermore, do not provide a clear indication of 'yes' or 'no' of being a carer. So the current research was not even able to identify whether these respondents were non-carers or not.

[36] The variable pension scheme membership also had a category labelled as 'missing', which was a consequence of respondents not being asked questions related to their pension scheme membership status. Essentially, this also meant that interpretations of the results could not be confidently made in relation to this category.

secondary data was a disadvantage in this sense as, although the researcher could derive a variable to suit their preferences this was reliant on the responses and questions asked by the survey. Evidently, regressions 7 and 9 (Table 27 & Table 29), note that this category of 'missing' respondents was statistically significant, however due to the ambiguous nature of the individuals who are found in this category, no confident conclusions could be drawn.

A second limitation, which may be considered, relates to cell counts. From conducting descriptive analysis, frequencies relating to the variables of 'region' and 'ethnicity' appeared to have some cell counts which were particularly small (i.e. under 30) (see Appendix 44). Another observation relating to cell counts concerns the evident skews in the numbers of men and women when separated into the two age groups ('above' and 'below' the SPA) which the researcher fears may have masked some of the true differences between individuals of opposing sex in the context of this study (see Table 13). These issues were evident regardless of whether weighting was applied. The researcher was mindful of these potential added influences upon the results. In the future, research could use alternative variables if they are available or could pool categories together to enhance numbers or use a sample which is less skewed in terms of gender; although this would reduce the level of detail which could be achieved.

Reducing the level of detail can pose further issues relating to interpreting analysis, and makes up the third limitation of this study. The dependent variable of the current study was derived through combining original 'current situation' responses into a new binary variable (see section 3.5.1.1.1 for more details). Although this had the advantage of increasing cell counts among the less commonly reported situations, the ability to examine differences between these sub-groups was no longer possible. Prior to the analysis, the researcher conducted descriptive investigations to explore the outcome variable (see Table 8 and Table 9). In particular, differences between the economically active group compared to those who were employed, unemployed and seeking work; and the economically inactive group compared to those who were retired, permanently sick or disabled, looking after home or family, among persons who are above and below the SPA, were explored. This analysis did not

highlight any substantial differences between the original variable's categories and the newly coded binary outcome variable, even when controlling for SPA. However, due to using an outcome variable which merged sub-groups, the heterogeneity was harder to confidently and reliably disentangle. The researcher remained mindful of these categorical differences when it came to interpreting the analysis however, felt that through mimicking the widely recognised ONS definition of economic activity, the generalisability and validity in measuring economic outcomes could be improved (ONS, 2013d;ONS, 2013e). Furthermore, the more simplistic binary outcome variable enabled the researcher to go into depth in terms of individual differences which were included into the analytical models.

A final limitation of this study, relates to the variables that were included. The scoping literature review demonstrated that a wealth of other factors have been associated with economic outcomes (see Chapter 2). Such variables included: health-risk behaviour habits (i.e. smoking and BMI) (Lantz et al., 2001), training opportunities available (Centre for Research into the Older Workforce, 2004), stress and depression levels (Michie and Williams, 2003), reports of ADL/IADLs (Saastamoinen et al., 2012), happiness ratings (Pearlin and Johnson, 1977;Christ et al., 2007;Siegrist et al., 2012), income (£) (Swanson, 2004;Auerbach et al., 2010;Chai et al., 2013;Cribb et al., 2013a), hours at work (Bakker and Demerouti, 2007) and the relationship of carer to the recipient of care (Conde-Sala et al., 2010), among other variables. However, restrictions of time and issues of variable availability in the ELSA dataset, multi-collinearity with other independent variables and complications of coding the analysis, meant that the researcher needed to be selective, leaving the opportunity for analysis in the future to build on these findings.

Despite these shortcomings, the dataset yielded new information on characteristics of older adults in England who are economically active and inactive, both before, and after reaching the SPA. Little is known about the combined influence of individuals' characteristics and their association with economic outcomes hence, this analysis, although constrained to the variables included, has contributed valuable information which may aid policy-makers in assisting people to be economically active for longer and more effectively in the future. The understandings generated from the present research are also

likely to benefit future generations of individuals in extending their working lives as they approach and reach the SPA as policy-makers now have a more comprehensive understanding of individual characteristics and their contributions in effecting whether a person is likely to be economically active in later life. How policy-makers may achieve this is explored by the following section.

6.4 Policy implications and recommendations

The findings of this research, have significant policy implications in a number of key areas, such as promoting economic activity among a heterogeneous ageing population, identifying those vulnerable to becoming economically inactive, and achieving the objectives of the EWLA.

Research helps to provide policy-makers with insight and understanding of the policies they formulate and implement, and with knowledge on introducing effective policies (Cartwright and Hardie, 2012). The current research has identified that in addition to a diverse array of factors which are associated with economic activity outcomes, individual differences (including a person's age and gender) can influence economic activity outcomes further. Older adults represent a heterogeneous population (Weyman et al., 2012), further highlighted by the results of the current study. Consequently, there is unlikely to be one, over-arching policy for the whole-population which can act as a simple solution in facilitating people to be economically active in later life. Instead, it has been suggested that a *multifaceted (segmented) policy response* which can help identify people into sub-sets based on their individual characteristics, may be more effective (Weyman et al., 2012). An example of a policy which takes into account such heterogeneity is the widely recognised Active Ageing Index developed by Zaidi and colleagues, which is an example of a framework which can measure and monitor active ageing outcomes at country levels (Zaidi et al., 2013). This framework can help policy-makers to identify lower and higher scoring EU and UNECE (United Nations Economic Commission for Europe) countries, helping to identify instances of good practise and promoting policy learning between countries. In particular, Northern and Western Europe are recognised for their higher active ageing scores (Zaidi, 2014). Exploring the four domains in the active ageing index,

'employment' and 'participation in society' are of particular relevance. It is apparent that Sweden, Cyprus and Portugal score highly in terms of the employment rates of older workers (between 55-74 years old) (Zolyomi, 2013). Additionally, for the domain of participation in society, which consists of indicators on: voluntary activities, care for grandchildren, care for older adults and political participation, Sweden, Italy and Luxembourg are top scorers (Zolyomi, 2013). It may be helpful for policy-makers to look towards the practises of these higher scoring countries to better support and encourage extensions in working lives.

Insights gathered by the current study help to highlight individuals who are most and least likely to be economically active. Using these findings, individuals who are most vulnerable to becoming economically inactive can be better identified now and in years to come. *Gender* is among one of the most commonly cited factors attributed towards variations in economic outcomes in later life (McKay and Middleton, 1998;Pienta and Hayward, 2002;Flynn, 2010). The current study offers further support to outcome differences whereby it was found that a larger proportion of women (aged 50-74 years old) were economically inactive compared to men of the same age (57.7% as opposed to 42.3 %), (see Figure 49) (Evandrou et al., 2009;Sefton et al., 2011;Gilbert, 2014). However, it is noted that gender appears to have received little attention when formulating policies (Loretto and Vickerstaff, 2015). Instead, until now policy-makers have seemed have taken gender neutral or male career-trajectory approaches (Loretto and Vickerstaff, 2015). Making more effort to examine women's careers and possible ways in which to encourage them to extend their working lives would be one area for future policy to consider and can offer a foundation for multifaceted policies to begin. A good example of a policy response which considers the impact that gender can have on working lives, relates to Carer Credits, introduced in the UK in 2010 (Carer's Allowance Unit, 2016;GOV.UK, 2016). Providing care has been shown to have a significant impact on the career trajectories, specifically of women, often leading to a reduced number of hours in work, or a total exit from the labour market, which can present issues in terms of protecting their pensions in the future (Dentinger and Clarkberg, 2002;Pylkkänen and Smith, 2002). The introduction of Carers Credits has helped carers to fill gaps in their National Insurance records and has removed the inflexibilities of the previous Home

Responsibilities Protection scheme (McMillan and Gay, 2015). This change has enabled carers to combine paid work with unpaid care provision, to make more informed choices about working and to take more personal responsibility for saving for retirement. The introduction of the Carers Credit is a good example of how the Government and policy-makers can create a more balanced work-life ratio for older adults, so that working in later life can be a matter of choice as opposed to being an obligation in order to make ends meet (Szinovacz et al., 2001;Vickerstaff, 2010).

Hedges et al. (2010) suggests that *obvious* and *easy to understand* policies are the most likely to be motivational in achieving objectives. In particular, indirect communication via *trusted* surrogates has been shown to be effective by Hedges et al. (2010). Perhaps emphasis on employers to explain to their employees the value of fuller working lives would be one way to achieve this (Strudwick and Kirkpatrick;DWP, 2013). Using employers could help provide a perspective from that particular company or business whereby together individuals can identify the barriers they face and the solutions and the support they feel they need (Department for Work and Pensions and Baroness Altman, 2015). Resources such as the 'Employer Toolkit: Guidance for Managers of Older Workers', developed by the government in 2015 (Department for Work and Pensions, 2015b) provide support and guidance to managers of older workers across all business sectors (Department for Work and Pensions, 2015a). Guidance relating to the challenges of managing older people in different sectors of the economy are among some of the future development plans for this toolkit, however it is unclear whether in the longer term it could help to meet the objectives of the EWLA.

Helping the public to understand the objectives of the EWLA is key if to implement change. Weyman et al. (2012) suggested in their report surrounding interventions of extending working lives that media-based communications are not enough. Instead, there is a need to change structural and normative influences. One way this could be achieved is through employers providing their employees with more *choice* over extending their working lives and pension investments/withdrawal architectures. The auto-enrolment pension initiative (2012) (referred to previously in section 2.3.7.1) demonstrates one good example of facilitating behaviour change through

structural and normative influences (GOV.UK, 2014). Leading on from this idea it is useful to also look at recent reforms of health and social care which have focused on choice and personalisation of services (HM Government, 2006). Such reforms aim to create services that can respond to individual needs (HM Government, 2007). The ideas linked to these reforms could be coupled with the EWLA in order to help create more person-centred policies in the future for economic activity. Evidently, from the research commented upon in the literature review, flexibility and choice appear to be of particular value in relation to decisions of extending the working life (Arthur, 2003;Merkes, 2003;Clayton, 2008;von Bonsdorff et al., 2009;BBCNews:POLITICS, 2012), thus efforts to include some of the tactics adopted in the health and social care reforms may also benefit from being used during pension reforms in the future. A good place to start from a policy perspective could be increasing opportunities for flexible retirement among older workers. Many Scandinavian countries have flexible working opportunities targeted at older workers and have among the highest effective retirement ages (Holiday, 2012)(see also Table 3). For example, Sweden offers an option of a partial pension receipt, which enables individuals to combine partial working and partial retirement. This may serve as a suitable model to follow on from, helping people to have more control over options in later life to fit around their capacity and needs.

This research has shown that characteristics associated with economic activity vary between older adults (DWP, 2014). It is important that individual differences are recognised and that efforts are made to help target persons who are both approaching and who have reached the SPA who are most vulnerable to becoming economically inactive, if to encourage them to extend their working lives more effectively in the future. Reflecting on the evidence presented in Chapter 2 concerning cohort differences (touched upon in sections 2.2.1, 2.3.5, 2.3.7 and 2.4.3), it is important to consider how working lives are likely to change in the future, and the implications that this may have for policy. For instance, the current study identified housing tenure to be significantly associated with economic activity outcomes. At the same time, the literature review identified that older adults (aged 50+) are more likely to own their property compared to younger adults who instead are more likely to rent (see section 2.4.1) (Greater London Authority, 2013). This result was echoed by the results of this study (see Figure 61). The future outlook of home ownership

for younger cohorts appears quite bleak, with the under thirties being referred to by the work of McKee (2012) as 'generation rent'. Renting has been associated with unemployment and early exits from the labour market (Banks et al., 2008b;Battu et al., 2008), thus individuals in the future may need additional help and encouragement to remain economically active due to them being more likely to rent. Consequently, the influence of housing tenure is likely to alter, illuminating the need for policy to be adaptive to the changing trends in the characteristics of younger cohorts and the effects this has for their economic activity outcomes.

Another variable's influence, which is likely to reshape the working lives of future cohorts, relates to the variable of ethnicity. This variable failed to show a statistically significant result in the recent study across the multivariate analysis, however this was largely attributed to the small cell counts of individuals in the minority groups. The literature review highlighted that the projected number of BME populations is set to increase (Katbamna and Matthews, 2006;ONS, 2012b-b;Smith, 2013). It is imperative for policy-makers to recognise such diversity when formulating policy so that factors associated with extending working lives specific to individuals from BME groups are to be effectively considered when designing policy in the future (Khan, 2012). As such, the characteristics of individuals of the future are likely to change, which will ultimately influence future analyses. It is important that policy-makers remain mindful of these projected changes and monitor their impact upon characteristics associated with economic activity outcomes if to design legislation that is effective and efficient in encouraging extensions in working lives. The next section (6.5), presents some further ideas for future research to consider, which may help us to improve and continue to contribute to our understanding of factors associated with economic activity in later life.

6.5 Recommendations for future research

While this thesis has improved our knowledge of factors associated with economic outcomes among older adults, a number of opportunities for research in the future arise which may contribute towards us furthering our understanding of characteristics that are associated with economic outcomes in later life. These opportunities are discussed briefly in this section.

One future direction could include studies of a longitudinal nature. This type of analysis could help monitor whether the number of people who extend their working lives increases or not across time and whether individual characteristics associated with economic activity in later life fluctuate. For example, health and well-being in relation to persons who do, and do not extend their working lives can be traced using longitudinal analysis, which may help policy-makers better understand the implications and effects of extending working lives. This also may give an indication towards the effectiveness of policies such as the EWLA in their efforts to encourage people to be economically active in later life and the effects such legislation has upon society, health, well-being, etc., in the long term. Longitudinal analysis looking at life-courses of individuals is also like to benefit from future research (Kim and Moen, 2002;Blekesaune et al., 2008;von Bonsdorff et al., 2009;Dewilde, 2012). The findings of this study illustrate that (depending on whether respondents are above/ below the SPA) people are more likely to be economically active in later life if they are in good health, have access to a car, have a higher level of education as well as having fewer caring responsibilities. Helping people achieve this should be one of the government's priorities. However, many barriers associated with economic activity up-to and beyond the SPA which have been highlighted in this research such as being in poorer health, not having access to a car, having no education and having time-consuming caring duties, are issues which could potentially be prevented by addressing problems earlier in the life-course (Marmot, 2010). Ensuring access to healthcare, a good diet, a good education and support for persons who need to care for others, are likely to result in fewer people reaching old-age in circumstances that are suggested to lead to a lower likelihood of economic activity in later life. The government has highlighted the need to promote active ageing across the life-course if to ensure that people can remain healthier as they age (Marmot, 2010). Likewise, policies that regulate the quality of education and support services for individuals at risk of becoming a carer could also lead to an increased likelihood of people being economically active as they approach and reach the SPA.

To improve our understanding of individual characteristics associated with economic activity and inactivity in later life a second approach of future research could be to use mixed methods. Using mixed methods, the current

quantitative analysis could be complemented by additional qualitative analysis to explore which factors individuals feel effect their economic outcomes (Sale et al., 2002). Alternatively, qualitative research accompanying quantitative statistics could be used to help pilot and inform policy recommendations (ILC, 2014). For instance, older adults could be interviewed allowing us to better understand which policy initiatives they would like to see implemented and which they feel are likely to benefit their ability to extend the working life. Furthermore, details of sources which could encourage economic activity for longer could be collected. It would be interesting to analyse economic outcomes ex-ante and ex-post, to determine whether such encouragement would make a difference to the economic outcomes of older adults. The input of relevant stakeholders is also likely to strengthen future qualitative slants taken. Insights on their thoughts on how to encourage extensions of working lives from perspectives of employers, employees, health and social care professionals, members of parliament, other household members and older adults themselves, together can help generate a more holistic understanding about how initiatives to encourage extensions of working lives can be improved and become most effective in achieving their goals.

Finally, future work could include an ambitious plan of replicating the analysis of this thesis within different contexts (i.e. other countries/ using an alternative dataset). Such replications could help to determine the extent of variation in individual characteristics associated with economic activity outcomes among persons who are approaching or who have reached the SPA. Furthermore, this could provide comparative analysis to the present study, enabling us to discern whether factors associated with economic outcomes are generalisable across other contexts (Azarian, 2011). Additionally, comparative analysis provides a wider field of which to analysis whereby if similarities were noted the global validity and transferability of the current study findings could be increased (Landman, 2008;Keman, 2011). The analysis of the present study is specific to England. The 'Survey of Health, Ageing and Retirement in Europe' (SHARE) is a cross-national longitudinal study of ageing. It includes respondents aged 50+ from 18 European countries (Economic and Social Data Service, 2015). Whilst the ELSA is not officially part of SHARE, both projects have maintained comparability through harmonisation, achieved through equivalent designs and efforts made through data collection which

lead to questions/ modules being comparable to other national and international surveys (Economic and Social Data Service, 2015). These newer studies may also like to consider adding further independent variables or alter the outcome variable criteria's specified (e.g. differences in part-time and full-time work uptake). The derived binary outcome variable of this research has been criticised for its lack of ability to differentiate differences between the heterogeneous subgroups of individuals' current situations. Future work could examine in more detail the association between these sub-groups and individual characteristics, to inform our understanding of factors that influence working lives and retirement in later life.

Research on the association between individual characteristics and economic outcomes among older adults is still in its infancy. This study is an original contribution to this burgeoning area of investigation, which is set to grow in importance as efforts to encourage extensions in working lives develop in England and around the world. This study has broadened the existing methodology used to identify characteristics associated with economic outcomes in later life. As highlighted in the introduction (chapter 1) the EWLA has been a key initiative in encouraging people to be economically active for longer. However, it is necessary to have information on which to base policies, which is where this study contributes. While emphasising that individual characteristics associated with economic activity are not homogeneous among older adults it also demonstrates that improving economic activity does not have to stop upon reaching the SPA. It is therefore informative research and strong evidence for what policies need to adopt if to encourage people to be economically active for longer.

Appendices

Appendix 1: SPA and economic activity status: sample size, **unweighted and weighted %'s by ELSA** Wave.

ELSA Wave	SPA status	Economic activity Group	Unweighted Sample (N) and unweighted (%)		Weighted (%)
1	Above the SPA	Economically active.	427	10.6	*10.7*
		Economically inactive.	3,595	89.4	*89.3*
		All Above the SPA	4,022	100.0	*100.0*
	Below the SPA	Economically active.	3,409	68.1	*69.0*
		Economically inactive.	1,596	31.9	*31.0*
		All Below the SPA	5,005	100.0	*100.0*
	All respondents	Economically active	3,836	42.5	*44.0*
		Economically inactive	5,191	57.5	*56.0*
		Total of all respondents	**9,027**	**100.0**	***100.0***
2	Above the SPA	Economically active.	417	12.2	*12.1*
		Economically inactive.	2,998	87.8	*87.9*
		All Above the SPA	3,415	100.0	*100.0*
	Below the SPA	Economically active.	2,441	68.6	*68.1*
		Economically inactive.	1,116	31.4	*31.9*
		All Below the SPA	3,557	100.0	*100.0*
	All respondents	Economically active	2,858	41.0	*41.1*
		Economically inactive	4,114	59.0	*58.9*
		Total of all respondents	**6,972**	**100.0**	***100.0***
3	Above the SPA	Economically active.	427	13.9	*13.8*
		Economically inactive.	2,651	86.1	*86.2*
		All Above the SPA	3,078	100.0	*100.0*
	Below the SPA	Economically active.	2,967	72.9	*71.9*

ELSA Wave	SPA status	Economic activity Group	Unweighted Sample (N) and unweighted (%)		Weighted (%)
		Economically inactive.	1,105	27.1	*28.31*
		All Below the SPA	4,072	100.0	*100.0*
	All respondents	Economically active	3,394	47.5	*46.6*
		Economically inactive	3,756	52.5	*53.4*
		Total of all respondents	**7,150**	**100.0**	***100.0***
4	Above the SPA	Economically active.	670	16.5	*16.3*
		Economically inactive.	3,390	83.5	*83.7*
		All Above the SPA	4,060	100.0	*100.0*
	Below the SPA	Economically active.	3,107	72.7	*72.6*
		Economically inactive.	1,168	27.3	*27.4*
		All Below the SPA	4,275	100.0	*100.0*
	All respondents	Economically active	3,777	45.3	*48.3*
		Economically inactive	4,558	54.7	*51.7*
		Total of all respondents	**8,335**	**100.0**	***100.0***
5	Above the SPA	Economically active.	689	17.1	*17.0*
		Economically inactive.	3,339	82.9	*83.0*
		All Above the SPA	4,028	100.0	*100.0*
	Below the SPA	Economically active.	2,379	70.5	*70.69*
		Economically inactive.	997	29.5	*29.4*
		All Below the SPA	3,376	100.0	*100.0*
	All respondents	Economically active	3,068	41.4	*43.0*
		Economically inactive	4,336	58.6	*57.0*
		Total of all respondents	**7,404**	**100.0**	***100.0***

Note: Black cells refer to the waves, which were not central to the interests of this thesis.

Source: Author's own analysis, ELSA 2002-2010.

Appendix 2: Outcome and explanatory variables: original and derived.

	Original Variables	**Questionnaire Question**	**Newly Derived Variables**
OUTCOME VARIABLES			
Economic activity	[Wpdes]	Best description of current situation	[DV_economic_activity].
EXPLANATORY VARIABLES			
Gender	[Dhsex]	Respondent sex from household grid	[Gender] [REG_GENDER] [Men_only] [Women_only]
Age (Age Group and SPA)	[Diagr] & newly derived [gender]	Age from individual demographics collapsed at 90 plus (use INDAGER instead) & as above	[SPA] [REG_All50plus_ age] [REG_All50plus_men_ age] [REG_All50plus_ women,age] [REG_ABOVE_AGEGROUPS] [REG_Men_abovespa_Age] [REG_Women_abovespa_Age] [REG_BELOW_AGEGROUPS] [REG_Men_belowspa_Age] [REG_Women_belowpa_Age]
Marital Status	[Dimar]	Respondent current legal marital status	[Marital_status]
Ethnicity	[fffqeth]	Ethnic group (from feed forward information)	[ethnicity] [REG_ETHNICITY]
Self-reported general Health	[Hehelf]	Would you say your health is … ? (start of section)	[Pooled_self_reported_health] [REG_SRGH]
Limiting Long-Standing Illness	[Heill]	*Whether has self-reported long-standing illness*	[LLSI] [REG_LLSI]
	[Helim]	*Whether long-standing illness is limiting*	
CASP-19	[CASP19]	(D) CASP 19	[REG_CASP19]
Housing tenure	[Hotenu]	Tenure	[S24_ tenure_h]
	[Holand]	Who is your landlord?	[Who_is_landlord]
	[Hotenu] & [Holand]	*(As above)*	[S24_real_housing_tenure] [REG_HousingTenure]
Highest Educational Qualification	[w5edqual]	(D) Highest Educational Qualification at ELSA W5	[Highest_Education] [REG_HighestEd]
Access to car/van	[Spcar]	Whether respondent has use of car or van when needed, as a driver or a passenger	[Caraccess] [REG_CarAccess]

	Original Variables	Questionnaire Question	Newly Derived Variables
Occupational social class/ NS-SEC	[W5nssec5]	(D) FINAL w5 NS-SEC 5 category classification (individual)	[nssec_status] [REG_NSSEC]
Pension Scheme Membership	[dcurpen]	Derived: Status of pension scheme membership	[new_pension_variable] [FINAL_PENSION_VARIABLE]
	[dcurpen.1] [dcurpen.2] [dcurpen.3] [dcurpen.4] [dcurpen.5] [dcurpen.6] [dcurpen.7]	Notably when the dataset was restructured the original variable of [dcurpen] broke down into these 7 separate variables, each representing a private pension. Respondents thus could provide details on their pension scheme membership on up to 7 separate pensions. For some individuals, all 7 pension variables had responses, while for others, only one pension was reported about.	
Region	[GOR]	Government Office Region	[REG_GOR] [REG_REGION]
Caring status	[Ercaa]	Whether looked after anyone in the past week	[real_caregiving_hours] [REG_real_caregiving_hours]
	[ercac]	Hours spent looking after other people last week	

Note: See Appendix 5, Appendix 6, Appendix 7 and chapter 3 for details of outcome and explanatory variables and their coding/ recoding for descriptive, bivariate and multivariate analysis.

Source: Author's own.

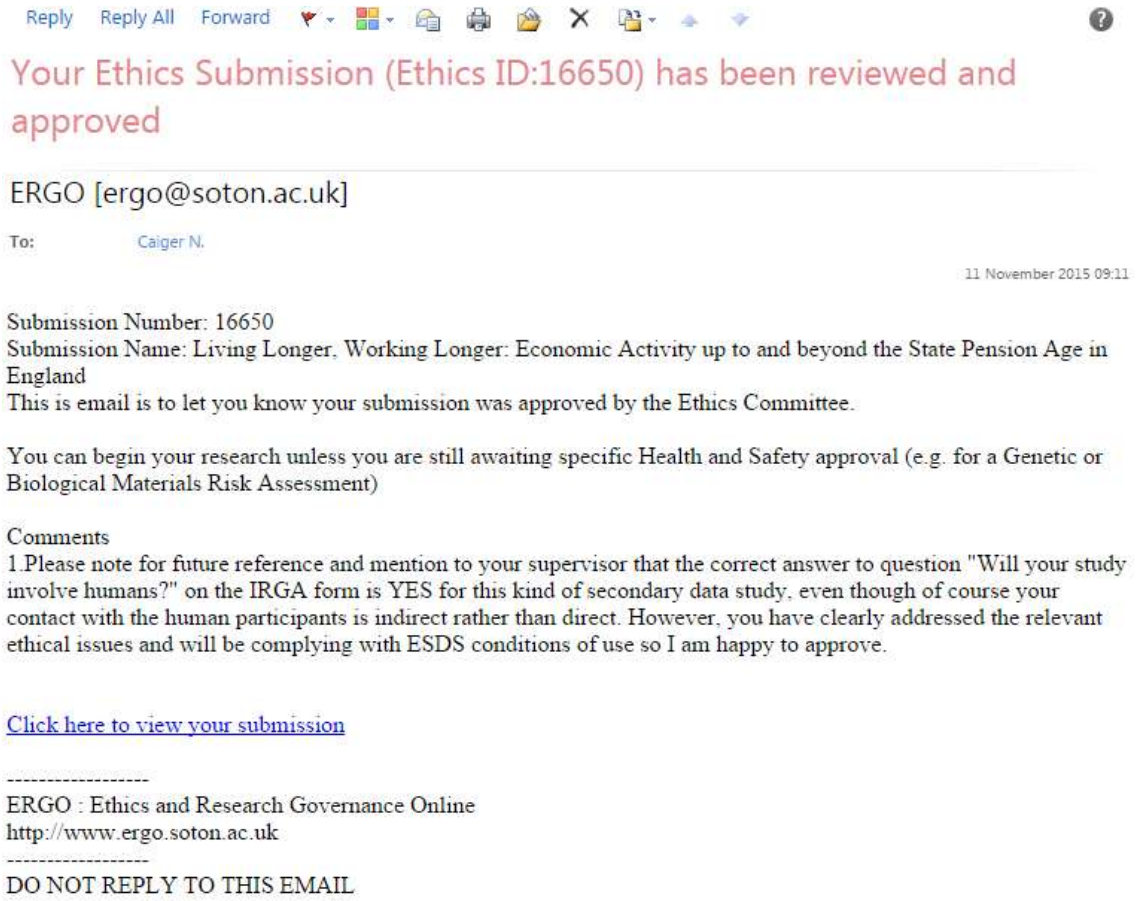
Appendix 3: Preparing the dataset - excluding filter responses: WPDES, ELSA, Wave 5, (2010).

[WPDES] variable Response Options	Frequency
Refusal	2
Don't Know	3
Retired	3,488
Employed	2,349
Self-employed	564
Unemployed	105
Permanently sick or disabled	394
Looking after home or family	454
Other answer	23
Irrelevant response	1
Semi-retired	50
Total	7,433

Orange rows indicate the responses, which were excluded by the researcher whilst preparing the dataset. Evidently, these cell counts are small (<30).

Source:Author's own analysis using the variable [WPDES], ELSA 2010, (unweighted)

Appendix 4: Ethics Approval confirmation email



Reply Reply All Forward

Your Ethics Submission (Ethics ID:16650) has been reviewed and approved

ERGO [ergo@soton.ac.uk]

To: Caiger N.

11 November 2015 09:11

Submission Number: 16650
Submission Name: Living Longer, Working Longer: Economic Activity up to and beyond the State Pension Age in England
This is email is to let you know your submission was approved by the Ethics Committee.

You can begin your research unless you are still awaiting specific Health and Safety approval (e.g. for a Genetic or Biological Materials Risk Assessment)

Comments
1.Please note for future reference and mention to your supervisor that the correct answer to question "Will your study involve humans?" on the IRGA form is YES for this kind of secondary data study, even though of course your contact with the human participants is indirect rather than direct. However, you have clearly addressed the relevant ethical issues and will be complying with ESDS conditions of use so I am happy to approve.

Click here to view your submission

ERGO : Ethics and Research Governance Online
http://www.ergo.soton.ac.uk

DO NOT REPLY TO THIS EMAIL

Source: Author's email correspondence with the Ethics and Research Governance Online.

Appendix 5: Original raw variables and their assigned values accompanied by the derived variables that relate to these original variables.

Name	Label	Values	New variables created by researcher using this original variable	New variables created by new variables (of previous column)
[diagr]	Age from individual demographics collapsed at 90 plus (use INDAGER instead)	-9=Refusal -8=Don't know -1=not applicable 99=age collapsed as born on or before 29/02/1916	[SPA_60_50_AND_ABOVE_ONLY] [SPA_65_50_AND_ABOVE_ONLY]	[SPA] [REG_SPA] [all50plus_women_age] all50plus_men] [all50plus_age] [BELOW_AGEGROUPS] [ABOVE_AGEGROUPS] [Women_abovespa_Age] [Women_belowspa_Age] [Men_abovespa_Age] [Men_belowspa_Age] [REG_all50plus_women_age] [REG_all50plus_men] [REG_all50plus_age] [REG_BELOW_AGEGROUPS] [REG_ABOVE_AGEGROUPS] [REG_Women_abovespa_Age] [REG_Women_belowspa_Age] [REG_Men_abovespa_Age] [REG_Men_belowspa_Age]
[dhsex]	ASK OR CODE RESPONDENT~S SEX	-9=Refusal -8=Don't know -2=schedule not applicable -1=not applicable 1=Male 2=Female	[Gender]	
[Dimar]	Subject~s current legal marital status	-9=Refusal -8=Don't know -2=Schedule not applicable -1=Item not applicable 1=Single, that is never married 2=Married, first and only marriage 3=A civil partner in a legally recognised Civil Partnership 4=Remarried, second or later marriage 5=Legally separated 6=Divorced 7=Widowed 8=@Spontaneous only-In a legally recognised Civil Partnership 9=@Spontaneous only-Formerly a civil partner, the Civil P 10=@Spontaneous only-A surviving civil partner: his/her pa 11=@Spontaneous only-A civil partner and has been married.	[Marital_status]	[REG_Marital_status]
[fffqethn]	Ethnic group (from feed forward information)	-9=Refusal -8=Don't know -2=Schedule not applicable -1=Item not applicable 1=White 2=Mixed ethnic group 3=Black 4=Black British	[Ethnicity]	[REG_ethnicity]

Name	Label	Values	New variables created by researcher using this original variable	New variables created by new variables (of previous column)
		5=Asian 6=Asian British 95=Any other group 98=Don't know		
[Wpdes]	Which one of these would you say best describes your current situation?	-9=Refusal -8=Don't know -2=Schedule not applicable -1=Item not applicable 1=Retired 2=Employed 3=self-employed 4=unemployed 5=permanently sick or disabled 6=looking after home or family 85=other answer 86=irrelevant response 95=other (specify) 96=semi-retired	[DV_economicactivity] -	
[hotenu]	In which of these ways does your household occupy this accommodation?	-9=Refusal -8=Don't know -2=Schedule not applicable -1=Item not applicable 1=own it outright 2=buying it with the help of a mortgage or loan 3=pay part rent and part mortgage 4=rent it 5=live here rent free (including rent free in relatives/friend) 6=squatting	[S24_tenure_h]	[S24_real_housing_tenure] [REG_HousingTenure]
[holand]	Who is your landlord?	-9=Refusal -8=Don't know -2=Schedule not applicable -1=not applicable 1=Local authority or council 2=Housing association or co-operative or charitable trust 3=Individual private landlord 4=Employer of a household member 5=Relative/friend of a household member 95=Another organisation/ individual	[Who_is_landlord]	
[Hehelf]	Self-reported general health	-9=Refusal -8=Don't know -2=Schedule not applicable -1=Item not applicable 1=…excellent	[Pooled_self_reported_health]	[REG_SRGH]

Name	Label	Values	New variables created by researcher using this original variable	New variables created by new variables (of previous column)
		2=very good 3=good 4=fair 5=or, poor		
[Heill]	Whether has self-reported long-standing illness	-9=Refusal -8=Don't know -2=Schedule not applicable -1=item not applicable 1=yes 2=no	[LLSI]	[REG_LLSI]
[Heilm]	Whether long-standing illness is limiting	-9=Refusal -8=Don't know -2=Schedule not applicable -1=item not applicable 1=yes 2=no		
[CASP19]	(D) CASP 19	-9=Refusal -1= not applicable	[REG_CASP19]	
[W5nssec5]	(D) FINAL w5 NS-SEC 5 category classification (individual)	-3= Incomplete/No job info collected -1=not applicable 1=managerial and professional occupations 2=Intermediate occupations 3=small employers and own account workers 4=lower supervisory and technical occupations 5=semi-routine and routine occupations 99-Other	[nssec_status]	[REG_NSSEC]
[Spcar]	Whether respondent has use of car or van when needed, as a driver or a passenger	-9=Refusal -8=Don't know -2=Schedule not applicable -1=item not applicable 1=yes 2=no	[Caraccess]	[REG_CarAccess]
[w5edqual]	(D) Highest Educational Qualification at ELSA W5	-9=Refusal -8=Don't know -3=Incomplete/ no information 1=NVQ4/NVQ5/Degree ot equiv 2=higher ed below degree 3=NVQ3/GCE A Level equiv 4=NVQ2/GCE O Level equiv	[Highest_Education]	[REG_HighestEd]

Name	Label	Values	New variables created by researcher using this original variable	New variables created by new variables (of previous column)
		5=NVQ1/CSE other grade equiv 6=Foreign/other 7=No qualification		
[dcurpen]	Derived: Status of pension scheme membership	-9=Refusal -8=Don't know -5=Disputed existence of pension 1=Currently contributing 2=Receiving pension income 3=Retained rights 4=Transferred rights to another scheme 5=Received lump sum refund of contributions 6=Has stopped receiving pension from this scheme	[new_pension_variable]	[FINAL_PENSION_VARIABLE] [REG_FINAL_PENSION_VARIABLE]
*Please note that the coding of the 7 separate pension variables of [dcurpen.1], [dcurpen.2], [dcurpen.3], [dcurpen.4], [dcurpen.5], [dcurpen.6] &[dcurpen.7] revealed when the data had been restructured remained the same.				
[Ercaa]	Whether looked after anyone in the past week	-9=Refusal -8=Don't know -2=Schedule not applicable -1=item not applicable 1=yes 2=no		[real_caregiving_hours] [REG_real_caregiving_hours]
[ercac]	Hours spent looking after other people last week	-9=Refusal -8=Don't know -1=item not applicable	[hours_of_care_carersonly]	
[GOR]	Government Office Region	-2= Not in England A= North East B=North West D=Yorkshire & The Humber E=East Midlands F=West Midlands G=East of England H=London J=South East K=South West S=Scotland W=Wales	[REG_GOR]	[REG_REGION]

Source: Author's own.

Appendix 6: Details of the creation, recoding and merging of variables conducted by the researcher, ELSA Wave 5 (2010).

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
[wpdes]	[DV_economicactivity]	2,3,4,96	1	1 (active)	Outcome variable.
		1,5,6	0	0 (inactive)	
[diagr]	[spa_60_50_AND_ABOVE_ONLY]	50 thru 59=0	0	0 (below spa, 50-59 only)	(Deriving variable)
		60 thru highest	1	1 (above the SPA, 60-highest only)	
		else	sys mis	None (missing)	
	[spa_65_50_AND_ABOVE_ONLY]	50 thru 64=0	0	0 (below spa, 50-64 only)	
		65 thru highest	1	1 (Above the SPA, 65 thru to highest)	
		else	sys mis	None (missing)	
[dhsex]	[gender]	1	1	1 (male)	Gender variable
		2	2	2 (female)	
		else	sys mis	None (missing)	
[spa_60_50_AND_ABOVE_ONLY] & [spa_65_50_AND_ABOVE_ONLY] &[dhsex]	[SPA]	if (SPA_60_50_AND_ABOVE_ONLY=1) AND (dhsex=2) SPA=1.	1	1 (above spa, 50+ all genders)	SPA variable
		if (SPA_65_50_AND_ABOVE_ONLY=1) AND (DHSEX=1) SPA=1.	1		
		if (SPA_60_50_AND_ABOVE_ONLY=0) AND (dhsex=2) SPA=2.	2	2 (below spa, 50+ all genders)	
		if (SPA_65_50_AND_ABOVE_ONLY=0) AND (DHSEX=1) SPA=2.	2		
		Missing values	999	**999** (missing)	
[gender] & [diagr]	[Women_abovespa_Age]	if (Gender=2) and (diagr=60) Women_abovespa_Age=1.	1	1 (60-64 years old women)	Age group Variable used for Regression 6
		if (Gender=2) and (diagr=61) Women_abovespa_Age=1.			
		if (Gender=2) and (diagr=62) Women_abovespa_Age=1.			
		if (Gender=2) and (diagr=63) Women_abovespa_Age=1.			
		if (Gender=2) and (diagr=64) Women_abovespa_Age=1.			
		if (Gender=2) and (diagr=65) Women_abovespa_Age=2.	2	2 (65-69 years old women)	
		if (Gender=2) and (diagr=66) Women_abovespa_Age=2.			
		if (Gender=2) and (diagr=67) Women_abovespa_Age=2.			
		if (Gender=2) and (diagr=68) Women_abovespa_Age=2.			
		if (Gender=2) and (diagr=69) Women_abovespa_Age=2.			
		if (Gender=2) and (diagr=70) Women_abovespa_Age=3.	3	3 (70-74 years old	

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
		if (Gender=2) and (diagr=71) Women_abovespa_Age=3.		women)	
		if (Gender=2) and (diagr=72) Women_abovespa_Age=3.			
		if (Gender=2) and (diagr=73) Women_abovespa_Age=3.			
		if (Gender=2) and (diagr=74) Women_abovespa_Age=3.			
		missing	999	999 (missing)	
	[Women_belowspa_Age]	if (Gender=2) and (diagr=50) Women_belowspa_Age=1.	1	**1 (50-54 years old women)**	Age group Variable used for Regression 9
		if (Gender=2) and (diagr=51) Women_belowspa_Age=1.			
		if (Gender=2) and (diagr=52) Women_belowspa_Age=1.			
		if (Gender=2) and (diagr=53) Women_belowspa_Age=1.			
		if (Gender=2) and (diagr=54) Women_belowspa_Age=1.			
		if (Gender=2) and (diagr=55) Women_belowspa_Age=2.	2	2 (55-59 years old women)	
		if (Gender=2) and (diagr=56) Women_belowspa_Age=2.			
		if (Gender=2) and (diagr=57) Women_belowspa_Age=2.			
		if (Gender=2) and (diagr=58) Women_belowspa_Age=2.			
		if (Gender=2) and (diagr=59) Women_belowspa_Age=2.			
		missing	999	999 (missing)	
	[Men_abovespa_Age]	if (Gender=1) and (diagr=65) Men_abovespa_Age=1.	1	1 (65-69 years old men)	Age group Variable used for Regression 5
		if (Gender=1) and (diagr=66) Men_abovespa_Age=1.			
		if (Gender=1) and (diagr=67) Men_abovespa_Age=1.			
		if (Gender=1) and (diagr=68) Men_abovespa_Age=1.			
		if (Gender=1) and (diagr=69) Men_abovespa_Age=1.			
		if (Gender=1) and (diagr=70) Men_abovespa_Age=2.	2	2 (70-74 years old men)	
		if (Gender=1) and (diagr=71) Men_abovespa_Age=2.			
		if (Gender=1) and (diagr=72) Men_abovespa_Age=2.			
		if (Gender=1) and (diagr=73) Men_abovespa_Age=2.			
		if (Gender=1) and (diagr=74) Men_abovespa_Age=2.			
		missing	999	999 (missing)	
	[Men_belowspa_Age]	if (Gender=1) and (diagr=50) Men_belowspa_Age=1.	1	1 (50-54 years old men)	Age group Variable used for Regression 8
		if (Gender=1) and (diagr=51) Men_belowspa_Age=1.			
		if (Gender=1) and (diagr=52) Men_belowspa_Age=1.			
		if (Gender=1) and (diagr=53) Men_belowspa_Age=1.			
		if (Gender=1) and (diagr=54) Men_belowspa_Age=1.			

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
		if (Gender=1) and (diagr=55) Men_belowspa_Age=2.	2	2 (55-59 years old)	
		if (Gender=1) and (diagr=56) Men_belowspa_Age=2.			
		if (Gender=1) and (diagr=57) Men_belowspa_Age=2.			
		if (Gender=1) and (diagr=58) Men_belowspa_Age=2.			
		if (Gender=1) and (diagr=59) Men_belowspa_Age=2.			
		if (Gender=1) and (diagr=60) Men_belowspa_Age=3.	3	3 (60-64years old men)	
		if (Gender=1) and (diagr=61) Men_belowspa_Age=3.			
		if (Gender=1) and (diagr=62) Men_belowspa_Age=3.			
		if (Gender=1) and (diagr=63) Men_belowspa_Age=3.			
		if (Gender=1) and (diagr=64) Men_belowspa_Age=3.			
		missing	999	999 (missing)	
[Women_belowspa_Age]	[all50plus_women_age]	if (Women_belowspa_Age=1) all50plus_women_age=1.	1	1 (woman 50-54 years old)	Age group Variable used for Regression 3
		if (Women_belowspa_Age=2) all50plus_women_age=2.	2	2 (woman 55-59 years old)	
		if (Women_abovespa_Age=1) all50plus_women_age=3.	3	3 (woman 60-64 years old)	
		if (Women_abovespa_Age=2) all50plus_women_age=4.	4	4 (woman 65-69 years old)	
		if (Women_abovespa_Age=3) all50plus_women_age=5.	5	5 (woman 70-74 years old)	
		missing	999	999 (missing)	
[Men_belowspa_Age]	[all50plus_men_age]	if (Men_belowspa_Age=1) all50plus_men_age=1.	1	1 (man 50-54 years old)	Age group Variable used for Regression 2
		if (Men_belowspa_Age=2) all50plus_men_age=2.	2	2 (man 55-59 years old)	
		if (Men_belowspa_Age=3) all50plus_men_age=3.	3	3 (man 60-64 years old)	
		if (Men_abovespa_Age=1) all50plus_men_age=4.	4	4 (man 65-69 years old)	
		if (Men_abovespa_Age=2) all50plus_men_age=5.	5	5 (man 70-74 years old)	
		missing	999	999 (missing)	
[all50plus_women_age] & [all50plus_men_age]	[all50plus_age]	if (all50plus_women_age=1) all50plus_age=1.	1	1 (50-54 years old)	Age group Variable used for Regression 1
		if (all50plus_men_age=1) all50plus_age=1.			
		if (all50plus_women_age=2) all50plus_age=2.	2	2 (55-59 years old)	
		if (all50plus_men_age=2) all50plus_age=2.			
		if (all50plus_women_age=3) all50plus_age=3.	3	3 (60-64 years old)	
		if (all50plus_men_age=3) all50plus_age=3.			
		if (all50plus_women_age=4) all50plus_age=4.	4	4 (65-69 years old)	
		if (all50plus_men_age=4) all50plus_age=4.			
		if (all50plus_women_age=5)	5	5 (70-74	

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
		all50plus_age=5.		years old)	
		if (all50plus_men_age=5) all50plus_age=5.			
		missing	999	999 (missing)	
[Women_belowspa_Age] & [Men_belowspa_Age]	[BELOW_AGEGROUPS]	if (Women_belowspa_Age=1) BELOW_AGEGROUPS=1.	1	1 (50-54 years old)	Age group Variable used for Regression 7
		if (Men_belowspa_Age=1) BELOW_AGEGROUPS=1.			
		if (Women_belowspa_Age=2) BELOW_AGEGROUPS=2.	2	2 (55-59/64 (dependent on gender))	
		if (Men_belowspa_Age=2) BELOW_AGEGROUPS=2.			
		if (Men_belowspa_Age=3) BELOW_AGEGROUPS=2.			
		missing	999	999 (missing)	
[Women_abovespa_Age] & [Men_abovespa_Age]	[ABOVE_AGEGROUPS]	if (Women_abovespa_Age=1) ABOVE_AGEGROUPS=1.	1	1 (SPA (60/65 dependent on gender)-69 years)	Age group Variable used for Regression 4
		if (Women_abovespa_Age=2) ABOVE_AGEGROUPS=1.			
		If (Men_abovespa_Age=1)ABOVE_AGEGROUPS=1.			
		if (Women_abovespa_Age=3) ABOVE_AGEGROUPS=2.	2	2 (70-74 years old)	
		if (Men_abovespa_Age=2) ABOVE_AGEGROUPS=2.			
		missing	999	999 (missing)	
[Dimar]	[Marital_status]	1	1	1 (single)	Marital Status Variable
		2,3,4,8,11	2	2 (married)	
		5,6,9	3	3 (divorced)	
		7,10	4	4 (widowed)	
		else	sys mis	None (missing)	
[Fffqeth]	[ethnicity]	1	1	1 (White)	Ethnicity variable
		2	2	2 (Mixed ethnic group)	
		3	3	3 (Black)	
		4	4	4 (Black British)	
		5	5	5 (Asian)	
		6	6	6 (Asian British)	
		95	7	7 (Any Other Group)	
		else	sys mis	None (missing)	
[hehelf]	[pooled_self_reported_health]	1 thru 3	1	1 (excellent,very good, good)	Self-Reported General Health/ SRGH Variable
		4	2	2 (fair)	
		5	3	3 (poor)	
		Else	sys mis	None (missing)	
[CASP19]	[REG_CASP19]	0 thru 41	2	2 (Low quality of life)	Quality of Life/ CASP-19
		42 thru 57	1	1 (High	

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
				quality of life_	variable
		Else	sys mis	None (missing)	
[Heill] & [Helim]	[LLSI]	If Heill=1 &Helim=1	1	1 (Yes, I have a limiting long-standing illness)	LLSI variable
		If Heill=1 & Helim=2	2	2 (Yes, I have a long-standing illness but it is not limiting)	
		If Heill=2	3	3 (No, I do not have a limiting long-standing illness)	
		If Heill=2 & Helim=2			
		Missing values	999	999 (missing)	
[Holand]	[Who_is_landlord]	1 thru 2	1	1 (Local authority or council/ housing association or charitable trust)	Deriving housing tenure variable
		3 thru 5, 95	2	2(individual private landlord/employer of a hh member/relative or friend of hh member/ another organisation or individual)	
		else	sys mis	None (missing)	
[Hotenu]	[S24_tenure_h]	1	1	1 (own outright)	Deriving housing tenure variable
		2 thru 3	2	2 (buying with help of mortgage or loan/ pay part rent and part mortgage shared ownership)	
		4	3	3 (rent it (la/private))	
		5 thru 6	4	4 (rent free/squat)	
		else	sys mis	None (missing)	
[S24_tenure_h] & [who_is_landlord	[s24_REAL_housing_tenure]	If S24_tenure_h =1	1	1 (own outright)	Housing Tenure

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
]		If S24_tenure_h 2=2	2	2 (buying with help of mortgage or loan/ pay part rent and part mortgage shared ownershi)	Variable
		If S24_tenure_h =3 & who_is_landlord=1	3	3 (rent it:local authority or council/ housing ass or coop or charity)	
		If S24_tenure_h =3 & who_is_landlord=2	4	4 (rent it:individual private landlord/employer of hh member/ relative or friend hh member/another org or individual)	
		If S24_tenure_h =4	5	5 (rent free/squat)	
		Missing values	999	999 (missing)	
[w5nssec]	[nssec_status]	1	1	1 (Managerial and professional occupations)	Occupational Social Class/ NS-SEC variable
		2	2	2 (intermediate occupations)	
		3	3	3 (small employers and own account workers)	
		4	4	4 (lower supervisory and technical occupations)	
		5	5	5 (semi-routine and routine occupations)	
		else	symis	None (missing)	
[Spcar]	[caraccess]	1	1	1 (yes)	Car access variable
		2	2	2(no)	
		else	symis	None (missing)	
[W5edqual5]	[Highest_Education]	1	1	1 (nqv4/nvq5/ degree or equiv)	Highest Education Variable
		2	2	2 (higher ed below degree)	

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
		3 thru 4	3	3 (nvq3/gce a level equiv & nvq2/gce o level equiv)	
		5 thru 6	4	4 (nvq1/cse other grade equiv & foreign/other)	
		7	5	5(no qualification)	
		else	sys mis	None (missing)	
[dcurpen]	[dcurpen 1-7] were recoded using these changes. Following these changes, the information from the 7 variables were added together, permitting the researcher to identify which of the 3 categories were reported by each respondent.	-9=Refusal	3	3 (Other)	Deriving pension scheme membership variable
		-8=Don't know	3	3 (Other)	
		-5=Disputed existence of pension	3	3 (Other)	
		1=Currently contributing	2	2 (Contribute)	
		2=Receiving pension income	1	1 (Receive)	
		3=Retained rights	2	2 (Contribute)	
		4=Transferred rights to another scheme	2	2 (Contribute)	
		5=Received lump sum refund of contributions	3	3 (Other)	
		6=Has stopped receiving pension from this scheme	3	3 (Other)	
		999=missing	0	0 (Respondent not questioned)	
[new_pension_variable]	[FINAL_PRENSION_VARIABLE] **Note: Receive only=responses only fall into receive category; Contribute only=responses only fall into contribute category;** **Other only=responses only fall into other category; Receive and Contribute=Responses fell into both receive and contribute category;** **Receive & Other=Responses fell into both receive and other category; Contribute & Other=Responses fell into both contribute and other category; Receive, Contribute & Other=Responses fell into all three category options of receive, contribute and other.**	1=Other only	4	4 (Receive + Contribute)	Pension scheme membership variable
		10=Contribute only	2	2 (Contribute)	
		11=Contribute & Other	2	2 (Contribute)	
		100=Receive only	3	3 (Receive)	
		101=Receive & Other		3 (Receive)	
		110=Receive & Contribute	4	4 (Receive + Contribute)	
		111=Receive, Contribute & Other	4	4 (Receive + Contribute)	
		0=Missing	1	1 (Respondent not questioned)	
[Ercac]	[hours_of_care_carersonly]	1 thru 19	1	1 (1-19 hours per week)	Deriving care variable
		20 thru 49	2	2 (20-49 hours per week)	
		50 thru highest=3	3	3 (50+ hours per week)	
		else	symi	None	

Variable used to derive newer variable	New variable label	New variable coding (left is old variables used to code, right is what it is now coded as)		New variable values	Additional info
			s	(missing)	
[ercaa] & [hours_of_care_carersonly]	[real_caregiving_hours]	If (ercaa=1) & (hours_of_care_carersonly=1)	1	1 (1-19 hours p/wk)	Care variable
		If (ercaa=1) & (hours_of_care_carersonly=2)	2	2 (20-49 hours p/wk)	
		If (ercaa=1) & (hours_of_care_carersonly=3)	3	3 (50+ hours p/wk)	
		if (ercaa=2)	4	4 (non-carer)	
		else	999	999 (missing respondents due to questionnaire filter)	
[GOR]	[REG_GOR]	A	A	A (North East)	Region variable (letters used opposed to numbers)
		B	B	B (North West)	
		D	D	D (Yorkshire and The Humber)	
		E	E	E (East Midlands)	
		F	F	F (West Midlands)	
		G	G	G (East of England)	
		H	H	H (London)	
		J	J	J (South East)	
		K	K	K (South West)	
		else	symis	None (missing)	

Source: Author's own.

Appendix 7: Variable changes for multivariate analysis

Variable name for bivariate	Coding Assigned		Variable for Multivariate	Additional Coding Assigned		Changes made: accompanying notes
[SPA]	1	above spa, 50+ all genders	[REG_SPA]	1	Below the spa	Variable name changed
	2	below spa, 50+ all genders		2	Above the SPA	
[Women_abovespa_Age]	1	60-64 years old, women	[REG_Women_abovespa_Age]	1	60-64 years old, women	Variable name changed
	2	65-69 years old, women		2	65-69 years old, women	
	3	70-74 years old, women		3	70-74 years old, women	
[Women_belowspa_Age]	1	50-54 years old women	[REG_Women_belowspa_Age]	1	50-54 years old women	Variable name changed
	2	55-59 years old women		2	55-59 years old women	
[Men_abovespa_Age]	1	65-69 years old men	[REG_Men_abovespa_Age]	1	65-69 years old men	Variable name changed
	2	70-74 years old men		2	70-74 years old men	
[Men_belowspa_Age]	1	50-54 years old men	[REG_Men_belowspa_Age]	1	50-54 years old men	Variable name changed
	2	55-59 years old men		2	55-59 years old men	
	3	60-64years old men		3	60-64years old men	
[all50plus_women_age]	1	woman 50-54 years old	[REG_all50plus_women_age]	1	woman 50-54 years old	Variable name changed
	2	woman 55-59 years old		2	woman 55-59 years old	
	3	woman 60-64 years old		3	woman 60-64 years old	
	4	woman 65-69 years old		4	woman 65-69 years old	
	5	woman 70-74 years old		5	woman 70-74 years old	

Variable name for bivariate	Coding Assigned		Variable for Multivariate	Additional Coding Assigned		Changes made: accompanying notes
[all50plus_men_age]	1	man 50-54 years old	[REG_all50plus_men_age]	1	man 50-54 years old	Variable name changed
	2	man 55-59 years old		2	man 55-59 years old	
	3	man 60-64 years old		3	man 60-64 years old	
	4	man 65-69 years old		4	man 65-69 years old	
	5	man 70-74 years old		5	man 70-74 years old	
[all50plus_age]	1	50-54 years old	[REG_all50plus_age]	1	50-54 years old	Variable name changed
	2	55-59 years old		2	55-59 years old	
	3	60-64 years old		3	60-64 years old	
	4	65-69 years old		4	65-69 years old	
	5	70-74 years old		5	70-74 years old	
[ABOVE_AGEGROUPS]	1	60/65 dependent on gender)-69 years old	[REG_ABOVE_AGEGROUPS]	1	60/65 dependent on gender)-69 years old	Variable name changed
	2	70-74 years old		2	70-74 years old	
[BELOW_AGEGROUPS]	1	50-54 years old	[REG_BELOW_AGEGROUPS]	1	50-54 years old	Variable name changed
	2	55-59/64 (dependent on gender)		2	55-59/64 (dependent on gender)	
[gender]	1	male	[REG_Gender]	1	female	Variable name changed & Category reassign
	2	female		2	male	
[marital_status]	1	single	[REG_MaritalStatus]	1	married, civil partnership, remarried, re-civil partnered	Variable name changed & Category reassign
	2	married, civil partnership, remarried, re-civil partnered		2	single	

Variable name for bivariate	Coding Assigned		Variable for Multivariate	Additional Coding Assigned		Changes made: accompanying notes
	3	separated, divorced, civil separated, civil legally dissolved		3	separated, divorced, civil separated, civil legally dissolved	
	4	widowed, surviving civil partner		4	widowed, surviving civil partner	
[ethnicity]	1	White	[REG_ethnicity]	1	White	Variable name changed
	2	Mixed ethnic group		2	Mixed ethnic group	
	3	Black		3	Black	
	4	Black British		4	Black British	
	5	Asian		5	Asian	
	6	Asian British		6	Asian British	
	7	Any Other group		7	Any Other group	
[pooled_self_reported_health]	1	excellent, v. good, good	[REG_SRGH]	1	excellent, v. good, good	Variable name changed
	2	Fair		2	Fair	
	3	Poor		3	Poor	
[LLSI]	1	Yes, I have a limiting long-standing illness	[REG_LLSI]	1	No, I do not have a limiting long-standing illness	Variable name change & category reassign
	2	Yes, I have a long-standing illness but it is		2	Yes, I have a limiting long-standing illness	
	3	No, I do not have a limiting long-standing illness		3	Yes, I have a long-standing illness but it is not limiting	
[REG_CASP19]	1	high quality of life	No changes			
	2	low quality of life				

Variable name for bivariate	Coding Assigned		Variable for Multivariate	Additional Coding Assigned		Changes made: accompanying notes
[s24_REAL_housing_tenure]	1	own outright	[REG_HousingTenure]	1	own outright	Variable name changed
	2	buying with help of mortgage or loan/ pay part rent and part mortgage shared ownership		2	buying with help of mortgage or loan/ pay part rent and part mortgage shared ownership	
	3	rent it: local authority or council/ housing ass or coop or charity		3	rent it: local authority or council/ housing ass or coop or charity	
	4	rent it: individual private landlord/employer of hh member/ relative or friend hh member/another org or individual		4	rent it: individual private landlord/employer of hh member/ relative or friend hh member/another org or individual	
	5	rent free/squat		5	rent free/squat	
[nssec_status]	1	Managerial and professional occupations	[REG_NSSEC]	1	Managerial and professional occupations	Variable name changed
	2	intermediate occupations		2	intermediate occupations	
	3	small employers and own account workers		3	small employers and own account workers	
	4	lower supervisory and technical		4	lower supervisory and technical occupations	

Variable name for bivariate	Coding Assigned		Variable for Multivariate	Additional Coding Assigned		Changes made: accompanying notes
		occupations				
	5	semi-routine and routine occupations		5	semi-routine and routine occupations	
[Highest_Education]	1	nqv4/nvq5/ degree or equiv	[REG_HighestEd]	1	nqv4/nvq5/ degree or equiv	Variable name changed
	2	higher ed below degree		2	higher ed below degree	
	3	nvq3/gce a level equiv & nvq2/gce o level equiv		3	nvq3/gce a level equiv & nvq2/gce o level equiv	
	4	nvq1/cse other grade equiv & foreign/other		4	nvq1/cse other grade equiv & foreign/other	
	5	no qualification		5	no qualification	
[caraccess]	1	Yes	[REG_CarAccess]	1	Yes	Variable name changed
	2	No		2	No	
[FINAL_PENSION_VARIABLE]	1	Respondent not questioned	[REG_FINAL_PENSION_VARIABLE]	1	Contribute	Variable name change & category reassign
	2	Contribute		2	Receive	
	3	Receive		3	Receive + contribute	
	4	Receive + contribute		999	Missing (participants who were not questioned on Pension scheme membership)	
[REG_GOR]	A	London	[REG_REGION]	1	London	Variable name changed & coding changed from letters to numbers
	B	North West		2	North West	
	D	Yorkshire and The Humber		3	Yorkshire and The Humber	

Variable name for bivariate	Coding Assigned		Variable for Multivariate	Additional Coding Assigned		Changes made: accompanying notes
	E	East Midlands		4	East Midlands	Changed variable to use numbers in coding as opposed to letters Option of Z excluded from analysis
	F	West Midlands		5	West Midlands	
	G	East of England		6	East of England	
	H	North East		7	North East	
	J	South East		8	South East	
	K	South West		9	South West	
	Z	Not in England, Scotland, Wales		**ELSE**	**SYMIS**	
[real_caregiving_hours]	1	1-19 hours p/wk	[REG_ real_caregiving_hours]	1	non-carer	Variable name change & category reassign
	2	20-49 hours p/wk		2	1-19 hours p/wk	
	3	50+ hours p/wk		3	20-49 hours p/wk	
	4	non-carer		4	50+ hours p/wk	
	999	missing-not mentioned if caring		999	missing-not mentioned if caring	

Source: Author's own (relevant for Wave 5 dataset, ELSA 2010).

In the final column of this table, colours are used to indicate similarities between the changes made to each variable ready for the multivariate anbalysis: Yellow=Variable name changed ;Green= Variable name change & category reassign; Orange=No changes made; Blue=Variable name change & coding changed from letters to numbers).

Appendix 8: Bivariate analysis: cross-tabulations and chi-square tests completed.

	Cross-tabulations and chi-square tests	*Additional variables to be considered within this cross-tabulation and chi-square*
Demographic Variables	[SPA] x [DV_economicactivity]	• n/a
	[Gender] x [DV_economicactivity]	• Include [SPA] as a layer
	[Marital_status] x [DV_economicactivity]	• Include [SPA] as a layer • "select if" [gender]= 1 (if want to look at men)/ "select if" [gender]=2 (if want to look at women)
	[ethnicity] x [DV_economicactivity]	
Health Variables	[pooled_self_reported_health] x [DV_economicactivity]	
	[LLSI] x [DV_economic activity]	
	[CASP19] x [DV_economicactivity]	
Socio-Economic Variables	[s24_REAL_HOUSING_TENURE] x [DV_economicactivity]	
	[Nssec_status] x [DV_economicactivity]	
	[Highest_Education] x[DV_economicactivity]	
	[Caraccess] x [DV_economicactivity]	
	[FINAL_PENSION_VARIABLE] x[DV_economicactivity]	
Geographical Variables	[REG_REGION] x [DV_economicactivity]	
Caring status variables	[REG_real_caregiving_hours] x [DV_economicactivity]	

Note: cross-tabulations to be run weighted and unweighted.

Source: Author's Own, ELSA 2010

Appendix 9: Economic activity among individuals aged 50-74 years old by whether they are above/ below the SPA (%), England, 2010(Table of unweighted N values and weighted percentages relating to Figure 48)

	Above the SPA	Below the SPA	Total
Economically active	689	2,379	3,068
	20.4%	*79.6%*	*100.0%*
Economically inactive	3,339	997	4,336
	75.0%	*25.0%*	*100.0%*
All Respondents (50-74 years old)	4,028	3,376	7,404
	51.5%	*48.5%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 10: Economic activity among individuals aged 50-74 years old by Gender (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 49)

	Female	Male	Total
Economically active	1,522	1,546	3,068
	44.0%	*56.0%*	*100.0%*
Economically inactive	2,570	1,766	4,336
	57.7%	*42.3%*	*100.0%*
All Respondents	4,092	3,312	7,404
	51.8%	*48.2%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 11: Economic activity among individuals who are above/ below the SPA (50-74 years old) by gender (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 50)

		Female	Male	Total
Below the SPA	Economically active	1,039	1,340	2,379
		37.3%	*62.7%*	*100.0%*
	Economically inactive	400	597	997
		38.1%	*61.9%*	*100.0%*
	All Respondents Below the SPA	1,439	1,937	3,376
		37.5%	*62.5%*	*100.0%*
Above the SPA	Economically active	483	206	689
		70.1%	*29.9%*	*100.0%*
	Economically inactive	2,170	1,169	3,339
		64.3%	*35.7%*	*100.0%*
	All Respondents Above the SPA	2,653	1,375	4,028
		65.3%	*34.7%*	*100.0%*
All Respondents (50-74 years old)	Economically active	1,522	1,546	3,068
		44.0%	*56.0%*	*100.0%*
	Economically inactive	2,570	1,766	4,336
		57.7%	*42.3%*	*100.0%*
	All Respondents (50-74 years old)	4,092	3,312	7,404
		51.8%	*48.2%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 12: Economic activity among individuals aged 50-74 years old by marital status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 51)

	Single	Married	Divorced	Widowed	Total
Economically active	198	2,312	435	123	3,068
	7.0%	*74.2%*	*15.1%*	*3.7%*	*100.0%*
Economically inactive	266	3,012	544	513	4,335
	6.5%	*69.2%*	*13.2%*	*11.1%*	*100.0%*
All Respondents	464	5,324	979	636	7,403
	6.7%	*71.3%*	*14.0%*	*7.9%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 13: Economic activity among men and women aged 50-74 years old (above/ below the SPA) by marital status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 52)

			Single	Married	Divorced	Widowed	Total
Below the SPA	Men	Economically active	95	1,075	148	22	1,340
			7.4%	*79.4%*	*11.5%*	*1.6%*	*100.0%*
		Economically inactive	68	424	82	23	597
			13.1%	*66.7%*	*16.5%*	*3.8%*	*100.0%*
		All Below the SPA, Men	163	1,499	230	45	1,937
			9.1%	*75.7%*	*13.0%*	*2.3%*	*100.0%*
	Women	Economically active	72	761	166	40	1,039
			8.3%	*67.6%*	*19.9%*	*4.2%*	*100.0%*
		Economically inactive	30	294	58	18	400
			7.8%	*68.2%*	*19.0%*	*5.0%*	*100.0%*
		All Below the SPA, Women	102	1,055	224	58	1,439
			8.2%	*67.8%*	*19.6%*	*4.4%*	*100.0%*
Above the SPA	Men	Economically active	9	162	24	11	206
			4.0%	*80.3%*	*11.0%*	*4.6%*	*100.0%*
		Economically inactive	78	883	111	96	1,168
			7.5%	*74.9%*	*9.6%*	*8.1%*	*100.0%*
		All Above the SPA, Men	87	1,045	135	107	1,374
			7.0%	*75.7%*	*9.8%*	*7.6%*	*100.0%*
	Women	Economically active	22	314	97	50	483
			3.9%	*66.5%*	*19.7%*	*9.9%*	*100.0%*
		Economically inactive	90	1,411	293	376	2,170
			3.6%	*66.9%*	*13.1%*	*16.4%*	*100.0%*
		All Above the SPA, Women	112	1,725	390	426	2,653
			3.7%	*66.8%*	*14.3%*	*15.2%*	*100.0%*
All Respondents 50-74 years old	Men and Women	Economically active	198	2,312	435	123	3,068
			7.0%	*74.1%*	*15.1%*	*3.7%*	*100.0%*
		Economically inactive	266	3,012	544	513	4,335
			6.5%	*69.1%*	*13.2%*	*11.1%*	*100.0%*
		All Respondents (50-74 years old)	464	5,324	979	636	7,403
			6.7%	*71.3%*	*14.1%*	*8.0%*	*100.0%*

Unweighted N values, weighted percentages

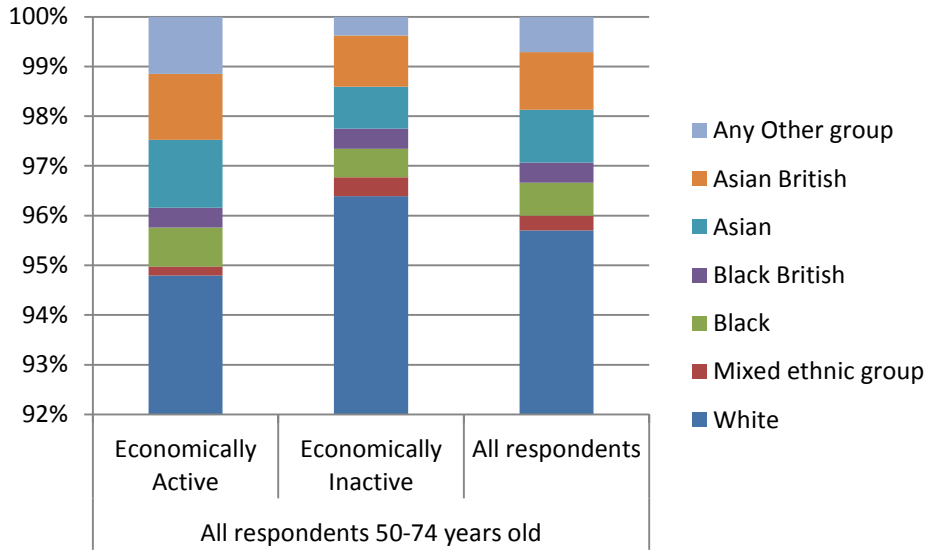
Source: Author's analysis, ELSA 2010

Appendix 14: Ethnicity value counts, ELSA Wave 5, (2010)

Count	Value	Label
7,004	1.00	White
20	2.00	Mixed ethnic group
36	3.00	Black
24	4.00	Black British
69	5.00	Asian
65	6.00	Asian British
36	7.00	Any Other Group

Source: Author's own, ELSA 2010, unweighted.

Appendix 15: Economic activity among individuals aged 50-74 years old by ethnicity (%), (England), 2010



Note: The Y-axis begins at 92% rather than 0% in order to show the smaller sub-groups of the ethnic minority population in this figure

X^2=22.872, df=6, p<.000

N values in table below

Source: Author's analysis, ELSA 2010.

Accompanying table of unweighted N values and weighted percentages relating to the above figure:

	White	Mixed	Black	Black	Asian	Asian	Any
	2,871	**6**	**18**	**9**	**39**	**30**	**22**
Economically active	*94.8%*	*.2%*	*.8%*	*.4%*	*1.4%*	*1.3%*	*1.1%*
	4,106	**14**	**18**	**15**	**30**	**35**	**14**
Economically inactive	*96.4%*	*.4%*	*.6%*	*.4%*	*.8%*	*1.0%*	*.4%*
	6,977	**20**	**36**	**24**	**69**	**65**	**36**
All respondents	*95.7%*	*.3%*	*.7%*	*.4%*	*1.1%*	*1.2%*	*.7%*

Source: Author's analysis, ELSA 2010

Appendix 16: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by ethnicity (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 53)

		White	Mixed	Black	Black	Asian	Asian	Any	Total
		2,214	5	14	5	37	27	18	2,320
	Economically active	*94.3%*	*.2%*	*.8%*	*.3%*	*1.7%*	*1.5%*	*1.3%*	*100.0%*
		936	7	4	2	11	14	6	980
	Economically inactive	*94.8%*	*.8%*	*.5%*	*.3%*	*1.2%*	*1.6%*	*.8%*	*100.0%*
		3,150	12	18	7	48	41	24	3,300
Below the SPA	All Respondents Below the SPA	*94.4%*	*.3%*	*.7%*	*.3%*	*1.5%*	*1.5%*	*1.1%*	*100.0%*
		657	1	4	4	2	3	4	675
	Economically active	*96.8%*	*.2%*	*.7%*	*.7%*	*.2%*	*.7%*	*.7%*	*100.0%*
		3,170	7	14	13	19	21	8	3,252
	Economically inactive	*96.9%*	*.3%*	*.6%*	*.4%*	*.7%*	*.8%*	*.3%*	*100.0%*
		3,827	8	18	17	21	24	12	3,927
Above the SPA	All Respondents Above the SPA	*96.9%*	*.2%*	*.6%*	*.5%*	*.6%*	*.8%*	*.3%*	*100.0%*
		2,871	6	18	9	39	30	22	2,995
	Economically active	*94.8%*	*.2%*	*.8%*	*.4%*	*1.4%*	*1.3%*	*1.1%*	*100.0%*
		4,106	14	18	15	30	35	14	4,232
	Economically inactive	*96.4%*	*.4%*	*.6%*	*.4%*	*.8%*	*1.0%*	*.4%*	*100.0%*
		6,977	20	36	24	69	65	36	7,227
All Respondents (50-74 years old)	All Respondents (50-74 years old)	*95.7%*	*.3%*	*.7%*	*.4%*	*1.1%*	*1.2%*	*.7%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 17: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by SRGH (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 54)

		Excellent	Fair	Poor	Total
	Economically active	**2,062**	**263**	**53**	**2,378**
		86.7%	*10.8%*	*2.5%*	*100.0%*
	Economically inactive	**585**	**228**	**181**	**994**
		56.5%	*23.4%*	*20.2%*	*100.0%*
Below the SPA	All Respondents Below the SPA	**2,647**	**491**	**234**	**3,372**
		77.9%	*14.5%*	*7.7%*	*100.0%*
	Economically active	**610**	**66**	**13**	**689**
		88.2%	*9.7%*	*2.1%*	*100.0%*
	Economically inactive	**2,423**	**658**	**256**	**3,337**
		71.2%	*20.4%*	*8.4%*	*100.0%*
Above the SPA	All Respondents Above the SPA	**3,033**	**724**	**269**	**4,026**
		74.1%	*18.6%*	*7.3%*	*100.0%*
	Economically active	**2,672**	**329**	**66**	**3,067**
		87.0%	*10.6%*	*2.4%*	*100.0%*
	Economically inactive	**3,008**	**886**	**437**	**4,331**
		67.6%	*21.1%*	*11.3%*	*100.0%*
All Respondents (50-74 years old)	All Respondents (50-74 years old)	**5,680**	**1,215**	**503**	**7,398**
		75.9%	*16.6%*	*7.5%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 18: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by SRGH (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 55)

			Excellent	Fair	Poor	Total
Below the SPA			1,153	150	37	1,340
		Economically active	*86.4%*	*10.6*	*3.0%*	*100.0*
			366	126	104	596
		Economically inactive	*57.7%*	*22.2*	*20.1*	*100.0*
			1,519	276	141	1,936
	Men	All Below the SPA, Men	*78.0%*	*14.0*	*8.0%*	*100.0*
			909	113	16	1,038
		Economically active	*88.1%*	*10.4*	*1.5%*	*100.0*
			219	102	77	398
		Economically inactive	*71.5%*	*20.5*	*8.0%*	*100.0*
			1,128	215	93	1,436
	Women	All Below the SPA, Women	*74.6%*	*18.6*	*6.8%*	*100.0*
Above the SPA			184	16	6	206
		Economically active	*88.4%*	*8.1%*	*3.5%*	*100.0*
			853	220	95	1,168
		Economically inactive	*70.6%*	*20.2*	*9.2%*	*100.0*
			1,037	236	101	1,374
	Men	All Above the SPA, Men	*73.3%*	*18.4*	*8.3%*	*100.0*
			426	50	7	483
		Economically active	*88.1%*	*10.4%*	*1.5%*	*100.0%*
			1,570	438	161	2,169
		Economically inactive	*71.5%*	*20.5%*	*8.0%*	*100.0%*
			1,996	488	168	2,652
	Women	All Above the SPA, Women	*74.6%*	*18.6*	*6.8%*	*100.0*
All Respondents 50-74 years old			2,672	329	66	3,067
		Economically active	*87.0%*	*10.6*	*2.4%*	*100.0*
			3,008	886	437	4,331
		Economically inactive	*67.5%*	*21.1*	*11.3*	*100.0*
	Men and women	All Respondents (50-74 years old)	5,680	1,21	503	7,398
			75.9%	*16.6*	*7.5%*	*100.0*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 19: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by LLSI (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 56)

		Yes, I have a limiting long-standing illness	Yes, I have a long-standing illness but it is not limiting	No, I do not have a limiting long-standing illness	Total
Below the SPA	Economically active	401	512	1,465	2,378
		16.4%	*21.4%*	*62.2%*	*100.0*
	Economically inactive	507	143	346	996
		53.6%	*13.8%*	*32.7%*	*100.0*
	All Respondents Below the SPA	908	655	1,811	3,374
		27.3%	*19.2%*	*53.5%*	*100.0*
Above the SPA	Economically active	122	160	407	689
		17.8%	*23.5%*	*58.7%*	*100.0*
	Economically inactive	1,239	736	1,361	3,336
		37.7%	*21.2%*	*41.1%*	*100.0*
	All Respondents Above the SPA	1,361	896	1,768	4,025
		34.3%	*21.6%*	*44.1%*	*100.0*
All Respondents (50-74 years old)	Economically active	523	672	1,872	3,067
		16.7%	*21.9%*	*61.4%*	*100.0*
	Economically inactive	1,746	879	1,707	4,332
		41.7%	*19.3%*	*39.0%*	*100.0*
	All Respondents (50-74 years old)	2,269	1,551	3,579	7,399
		30.9%	*20.4%*	*48.6%*	*100.0*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 20: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by LLSI (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 57)

			Yes, I have a limiting long-standing illness	Yes, I have a long-standing illness but it is not limiting	No, I do not have a limiting long-standing illness	Total
Below the SPA			219	306	815	1,340
		Economically active	*15.7%*	*22.3%*	*62.0%*	*100.0%*
			295	97	205	597
		Economically inactive	*53.2%*	*14.8%*	*32.0%*	*100.0%*
			514	403	1,020	1,937
	Men	All Below the SPA, Men	*26.6%*	*20.2%*	*53.2%*	*100.0%*
			182	206	650	1,038
		Economically active	*17.5%*	*20.0%*	*62.5%*	*100.0%*
			212	46	141	399
		Economically inactive	*54.3%*	*12.0%*	*33.6%*	*100.0%*
			394	252	791	1,437
	Women	All Below the SPA, Women	*28.5%*	*17.6%*	*53.8%*	*100.0%*
Above the SPA			37	50	119	206
		Economically active	*17.9%*	*26.6%*	*55.5%*	*100.0%*
			384	304	479	1,167
		Economically inactive	*34.6%*	*24.3%*	*41.1%*	*100.0%*
			421	354	598	1,373
	Men	All Above the SPA, Men	*32.1%*	*24.6%*	*43.2%*	*100.0%*
	Women	Economically active	85	110	288	483

			Yes, I have a limiting long-standing illness	Yes, I have a long-standing illness but it is not limiting	No, I do not have a limiting long-standing illness	Total
			17.8%	*22.2%*	*60.0%*	*100.0%*
			855	432	882	2,169
		Economically inactive	*39.5%*	*19.4%*	*41.0%*	*100.0%*
			940	542	1,170	2,652
		All Above the SPA, Women	*35.5%*	*20.0%*	*44.5%*	*100.0%*
All Respondents 50-74 years old			523	672	1,872	3,067
		Economically active	*16.7%*	*21.9%*	*61.4%*	*100.0%*
			1,746	879	1,707	4,332
		Economically inactive	*41.7%*	*19.3%*	*39.0%*	*100.0%*
			2,269	1,551	3,579	7,399
	Men and women	All Respondents (50-74 years old)	*30.9%*	*20.4%*	*48.6%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 21: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by CASP-19 (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 58)

		High quality of life	Low quality of life	Total
		1,282	892	2,174
	Economically active	*57.1%*	*42.9%*	*100.0%*
		409	466	875
	Economically inactive	*43.9%*	*56.1%*	*100.0%*
		1,691	1,358	3,049
Below the SPA	All Respondents Below the SPA	*53.3%*	*46.7%*	*100.0%*
		420	209	629
	Economically active	*65.5%*	*34.5%*	*100.0%*
		1,663	1,375	3,038
	Economically inactive	*53.2%*	*46.8%*	*100.0%*
		2,083	1,584	3,667
Above the SPA	All Respondents Above the SPA	*55.3%*	*44.7%*	*100.0%*
		1,702	1,101	2,803
	Economically active	*58.8%*	*41.2%*	*100.0%*
		2,072	1,841	3,913
	Economically inactive	*50.9%*	*49.1%*	*100.0%*
		3,774	2,942	6,716
All Respondents (50-74 years old)	All Respondents (50-74 years old)	*54.3%*	*45.7%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 22: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by CASP-19 (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 59)

			High quality of life	Low quality of life	Total
Below the SPA			714	501	1,215
		Economically active	*58.3%*	*41.7%*	*100.0%*
			255	269	524
		Economically inactive	*45.9%*	*54.1%*	*100.0%*
			969	770	1,739
	Men	All Below the SPA, Men	*54.8%*	*45.2%*	*100.0%*
			568	391	959
		Economically active	*55.3%*	*44.7%*	*100.0%*
			154	197	351
		Economically inactive	*40.7%*	*59.3%*	*100.0%*
			722	588	1,310
	Women	All Below the SPA, Women	*51.1%*	*48.9%*	*100.0%*
Above the SPA			125	64	189
		Economically active	*62.7%*	*37.3%*	*100.0%*
			575	483	1,058
		Economically inactive	*52.0%*	*48.0%*	*100.0%*
			700	547	1,247
	Men	All Above the SPA, Men	*53.6%*	*46.4%*	*100.0%*
			295	145	440
		Economically active	*66.5%*	*33.5%*	*100.0%*
			1,088	892	1,980
	Women	Economically inactive	*53.8%*	*46.2%*	*100.0%*

			High quality of life	Low quality of life	Total
		All Above the SPA, Women	1,383	1,037	2,420
			56.1%	*43.9%*	*100.0%*
All Respondents 50-74 years old		Economically active	1,702	1,101	2,803
			58.8%	*41.2%*	*100.0%*
		Economically inactive	2,072	1,841	3,913
			50.9%	*49.1%*	*100.0%*
	Men and women	All Respondents (50-74 years old)	3,774	2,942	6,716
			54.3%	*45.7%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 23: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by housing tenure (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 60)

	Own outright	Part-rent and part-mortgage	Rent LA/HA	Rent Private	Rent free	Total
Economically active	1,559	1,165	198	106	27	3,055
	48.0%	*39.7%*	*7.8%*	*3.6%*	*.9%*	*100.0%*
Economically inactive	3,087	501	589	104	25	4,306
	69.6%	*10.8%*	*16.4%*	*2.6%*	*.6%*	*100.0%*
All Respondents (50-74 years old)	4,646	1,666	787	210	52	7,361
	60.3%	*23.3%*	*12.7%*	*3.0%*	*.7%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 24: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by housing tenure (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 61)

			Own outright	Part-rent and part-mortgage	Rent LA/HA	Rent Private	Rent free	Total
Below the SPA			**643**	**551**	**74**	**54**	**12**	**1,334**
		Economically active	*45.7%*	*43.6%*	*5.9%*	*4.1%*	*.7%*	*100.0%*
			361	**95**	**117**	**19**	**1**	**593**
		Economically inactive	*56.6%*	*14.4%*	*24.7%*	*4.2%*	*.2%*	*100.0%*
			1,004	**646**	**191**	**73**	**13**	**1,927**
	Men	All Below the SPA, Men	*48.8%*	*35.1%*	*11.4%*	*4.1%*	*.6%*	*100.0%*
			469	**451**	**76**	**32**	**7**	**1,035**
		Economically active	*41.2%*	*44.5%*	*10.3%*	*3.2%*	*.8%*	*100.0%*
			202	**91**	**83**	**16**	**1**	**393**
		Economically inactive	*50.3%*	*21.3%*	*25.3%*	*2.9%*	*.3%*	*100.0%*
			671	**542**	**159**	**48**	**8**	**1,428**
	Women	All Below the SPA, Women	*43.8%*	*37.7%*	*14.7%*	*3.1%*	*.7%*	*100.0%*
Above the SPA			**142**	**38**	**17**	**7**	**2**	**206**
		Economically active	*66.5%*	*18.5%*	*9.8%*	*3.5%*	*1.7%*	*100.0%*
			901	**93**	**128**	**32**	**7**	**1,161**
		Economically inactive	*75.8%*	*7.3%*	*13.3%*	*3.0%*	*.6%*	*100.0%*
			1,043	**131**	**145**	**39**	**9**	**1,367**
	Men	All Above the SPA, Men	*74.4%*	*9.0%*	*12.8%*	*3.1%*	*.8%*	*100.0%*
			305	**125**	**31**	**13**	**6**	**480**
	Women	Economically active	*62.8%*	*25.1%*	*7.9%*	*2.7%*	*1.5%*	*100.0%*

			Own outright	Part-rent and part-mortgage	Rent LA/HA	Rent Private	Rent free	Total
			1,623	**222**	**261**	**37**	**16**	**2,159**
		Economically inactive	*74.2%*	*9.7%*	*13.7%*	*1.7%*	*.7%*	*100.0%*
			1,928	**347**	**292**	**50**	**22**	**2,639**
		All Above the SPA, Women	*72.1%*	*12.5%*	*12.7%*	*1.9%*	*.9%*	*100.0%*
All Respondents 50-74 years old			**1,559**	**1,165**	**198**	**106**	**27**	**3,055**
		Economically active	*48.0%*	*39.7%*	*7.7%*	*3.6%*	*.9%*	*100.0%*
			3,087	**501**	**589**	**104**	**25**	**4,306**
		Economically inactive	*69.7%*	*10.8%*	*16.4%*	*2.6%*	*.6%*	*100.0%*
		All Respondents (50-74 years	**4,646**	**1,666**	**787**	**210**	**52**	**7,361**
	Men and women	old)	*60.3%*	*23.3%*	*12.7%*	*3.0%*	*.7%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 25: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by occupational social class (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 62)

		Managerial and professional occupations	Intermediate occupations	Small employers and own account workers	Lower supervisory and technical occupations	Semi-routine and routine occupations	Total
Below the SPA	Economically active	**1,019**	**274**	**306**	**217**	**551**	**2,367**
		40.0%	*10.8%*	*14.3%*	*10.6%*	*24.3%*	*100.0%*
	Economically inactive	**331**	**107**	**92**	**118**	**289**	**937**
		33.3%	*11.4%*	*9.4%*	*13.4%*	*32.6%*	*100.0%*
	All Respondents Below the SPA	**1,350**	**381**	**398**	**335**	**840**	**3,304**
		38.1%	*11.0%*	*12.9%*	*11.4%*	*26.7%*	*100.0%*
Above the SPA	Economically active	**215**	**107**	**115**	**34**	**217**	**688**
		28.0%	*14.9%*	*17.1%*	*5.5%*	*34.4%*	*100.0%*
	Economically inactive	**1,056**	**500**	**337**	**285**	**1,098**	**3,276**
		28.7%	*14.7%*	*10.0%*	*9.4%*	*37.1%*	*100.0%*
	All Respondents Above the SPA	**1,271**	**607**	**452**	**319**	**1,315**	**3,964**
		28.6%	*14.8%*	*11.2%*	*8.8%*	*36.6%*	*100.0%*
All Respondents (50-74 years old)	Economically active	**1,234**	**381**	**421**	**251**	**768**	**3,055**
		37.5%	*11.6%*	*14.9%*	*9.6%*	*26.4%*	*100.0%*
	Economically inactive	**1,387**	**607**	**429**	**403**	**1,387**	**4,213**
		29.8%	*13.9%*	*9.8%*	*10.4%*	*36.0%*	*100.0%*
	All Respondents (50-74 years old)	**2,621**	**988**	**850**	**654**	**2,155**	**7,268**
		33.2%	*12.9%*	*12.0%*	*10.0%*	*31.8%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 26: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by occupational social class (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 63)

			Managerial and professional occupations	Intermediate occupations	Small employers and own account workers	Lower supervisory and technical occupations	Semi-routine and routine occupations	Total
Below the SPA	Men	Economically active	**593**	**74**	**230**	**164**	**276**	**1,337**
			40.8%	*5.7%*	*18.1%*	*13.2%*	*22.1%*	*100.0%*
		Economically inactive	**231**	**38**	**61**	**100**	**146**	**576**
			37.7%	*6.5%*	*10.2%*	*17.6%*	*27.9%*	*100.0%*
		All Below the SPA, Men	**824**	**112**	**291**	**264**	**422**	**1,913**
			39.9%	*6.0%*	*15.9%*	*14.5%*	*23.8%*	*100.0%*
	Women	Economically active	**426**	**200**	**76**	**53**	**275**	**1,030**
			38.5%	*19.5%*	*8.0%*	*6.1%*	*28.0%*	*100.0%*
		Economically inactive	**100**	**69**	**31**	**18**	**143**	**361**
			25.3%	*20.0%*	*7.8%*	*5.9%*	*40.9%*	*100.0%*
		All Below the SPA, Women	**526**	**269**	**107**	**71**	**418**	**1,391**
			34.8%	*19.6%*	*8.0%*	*6.1%*	*31.5%*	*100.0%*
Above the SPA	Men	Economically active	**76**	**7**	**55**	**14**	**54**	**206**
			32.9%	*2.3%*	*27.2%*	*8.1%*	*29.5%*	*100.0%*
		Economically inactive	**455**	**56**	**168**	**170**	**294**	**1,143**
			34.8%	*4.7%*	*14.5%*	*16.4%*	*29.7%*	*100.0%*
		All Above the SPA, Men	**531**	**63**	**223**	**184**	**348**	**1,349**
			34.5%	*4.3%*	*16.4%*	*15.2%*	*29.7%*	*100.0%*
	Women	Economically active	**139**	**100**	**60**	**20**	**163**	**482**
			26.1%	*20.2%*	*12.8%*	*4.7%*	*36.2%*	*100.0%*
		Economically inactive	**601**	**444**	**169**	**115**	**804**	**2,133**
			25.4%	*20.3%*	*7.5%*	*5.6%*	*41.2%*	*100.0%*
		All Above the SPA, Women	**740**	**544**	**229**	**135**	**967**	**2,615**
			25.5%	*20.3%*	*8.5%*	*5.4%*	*40.3%*	*100.0%*
All Respondents 50-74 years old	Men and women	Economically active	**1,234**	**381**	**421**	**251**	**768**	**3,055**
			37.5%	*11.7%*	*14.9%*	*9.6%*	*26.3%*	*100.0%*
		Economically inactive	**1,387**	**607**	**429**	**403**	**1,387**	**4,213**
			29.8%	*13.9%*	*9.8%*	*10.4%*	*36.0%*	*100.0%*
		All Respondents (50-74 years old)	**2,621**	**988**	**850**	**654**	**2,155**	**7,268**
			33.2%	*12.9%*	*12.0%*	*10.0%*	*31.8%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 27: Economic activity among individuals aged 50-74 years (above/ below the SPA) old by highest educational qualification (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 64)

		Degree level Education	Higher Education	Intermediate Education	Low Education	No Education	Total
Below the SPA	Economically active	**697**	**457**	**800**	**152**	**267**	**2,373**
		26.2%	*20.0%*	*33.9%*	*7.0%*	*12.9%*	*100.0%*
	Economically inactive	**216**	**160**	**296**	**86**	**227**	**985**
		19.6%	*15.0%*	*29.3%*	*9.3%*	*26.8%*	*100.0%*
	All Respondents Below the SPA	**913**	**617**	**1,096**	**238**	**494**	**3,358**
		24.3%	*18.5%*	*32.6%*	*7.6%*	*17.0%*	*100.0%*
Above the SPA	Economically active	**165**	**97**	**234**	**67**	**124**	**687**
		20.9%	*13.5%*	*34.9%*	*10.2%*	*20.4%*	*100.0%*
	Economically inactive	**540**	**519**	**899**	**412**	**959**	**3,329**
		13.8%	*14.3%*	*26.3%*	*12.7%*	*32.8%*	*100.0%*
	All Respondents Above the SPA	**705**	**616**	**1,133**	**479**	**1,083**	**4,016**
		15.0%	*14.2%*	*27.8%*	*12.3%*	*30.7%*	*100.0%*
All Respondents (50-74 years old)	Economically active	**862**	**554**	**1,034**	**219**	**391**	**3,060**
		25.2%	*18.7%*	*34.1%*	*7.6%*	*14.4%*	*100.0%*
	Economically inactive	**756**	**679**	**1,195**	**498**	**1,186**	**4,314**
		15.2%	*14.5%*	*27.1%*	*11.9%*	*31.3%*	*100.0%*
	All Respondents (50-74 years old)	**1,618**	**1,233**	**2,229**	**717**	**1,577**	**7,374**
		19.5%	*16.3%*	*30.1%*	*10.0%*	*24.1%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 28: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by highest educational qualification (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 65)

			Degree level Education	Higher Education	Intermediate Education	Low Education	No Education	Total
Below the SPA			**415**	**302**	**385**	**87**	**147**	**1,336**
		Economically active	*28.5%*	*23.0%*	*29.3%*	*6.9%*	*12.4%*	*100.0%*
			151	**116**	**147**	**59**	**116**	**589**
		Economically inactive	*22.9%*	*18.6%*	*24.5%*	*10.3%*	*23.6%*	*100.0%*
			566	**418**	**532**	**146**	**263**	**1,925**
	Men	All Below the SPA, Men	*26.9%*	*21.7%*	*27.9%*	*7.9%*	*15.6%*	*100.0%*
			282	**155**	**415**	**65**	**120**	**1,037**
		Economically active	*22.4%*	*14.9%*	*41.7%*	*7.1%*	*13.9%*	*100.0%*
			65	**44**	**149**	**27**	**111**	**396**
		Economically inactive	*14.3%*	*9.2%*	*37.0%*	*7.6%*	*31.9%*	*100.0%*
			347	**199**	**564**	**92**	**231**	**1,433**
	Women	All Below the SPA, Women	*20.0%*	*13.2%*	*40.3%*	*7.3%*	*19.3%*	*100.0%*
Above the SPA			**57**	**41**	**61**	**14**	**33**	**206**
		Economically active	*23.7%*	*19.1%*	*30.6%*	*8.1%*	*18.5%*	*100.0%*
			253	**212**	**274**	**129**	**297**	**1,165**
		Economically inactive	*18.3%*	*16.9%*	*23.3%*	*11.3%*	*30.2%*	*100.0%*
			310	**253**	**335**	**143**	**330**	**1,371**
	Men	All Above the SPA, Men	*19.1%*	*17.2%*	*24.3%*	*10.9%*	*28.5%*	*100.0%*
			108	**56**	**173**	**53**	**91**	**481**
	Women	Economically active	*19.7%*	*11.1%*	*36.7%*	*11.3%*	*21.2%*	*100.0%*

			Degree level Education	Higher Education	Intermediate Education	Low Education	No Education	Total
			287	**307**	**625**	**283**	**662**	**2,164**
		Economically inactive	*11.3%*	*12.9%*	*28.0%*	*13.5%*	*34.3%*	*100.0%*
			395	**363**	**798**	**336**	**753**	**2,645**
		All Above the SPA, Women	*12.8%*	*12.6%*	*29.6%*	*13.1%*	*31.9%*	*100.0%*
All Respondents (50-74 years old)			**862**	**554**	**1,034**	**219**	**391**	**3,060**
		Economically active	*25.1%*	*18.6%*	*34.1%*	*7.7%*	*14.5%*	*100.0%*
			756	**679**	**1,195**	**498**	**1,186**	**4,314**
		Economically inactive	*15.2%*	*14.5%*	*27.0%*	*11.9%*	*31.3%*	*100.0%*
			1,618	**1,233**	**2,229**	**717**	**1,577**	**7,374**
	Men and women	All Respondents (50-74 years old)	*19.5%*	*16.3%*	*30.1%*	*10.1%*	*24.1%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 29: Economic activity among individuals aged 50-74 years old by car/van access (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 66)

	Yes, car access	No, car access	Total
Economically active	**2,908**	**160**	**3,068**
	94.2%	*5.8%*	*100.0%*
Economically inactive	**3,776**	**560**	**4,336**
	85.4%	*14.6%*	*100.0%*
All Respondents (50-74 years old)	**6,684**	**720**	**7,404**
	89.2%	*10.8%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 30: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by car/van access (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 67)

			Yes	No	Total
Below the SPA			**1,294**	**46**	**1,340**
		Economically active	*96.0%*	*4.0%*	*100.0%*
			516	**81**	**597**
		Economically inactive	*82.6%*	*17.4%*	*100.0%*
			1,810	**127**	**1,937**
	Men	All Below the SPA, Men	*92.1%*	*7.9%*	*100.0%*
			973	**66**	**1,039**
		Economically active	*92.5%*	*7.5%*	*100.0%*
			339	**61**	**400**
		Economically inactive	*81.5%*	*18.5%*	*100.0%*
			1,312	**127**	**1,439**
	Women	All Below the SPA, Women	*89.2%*	*10.8%*	*100.0%*
Above the SPA			**201**	**5**	**206**
		Economically active	*97.1%*	*2.9%*	*100.0%*
			1,050	**119**	**1,169**
		Economically inactive	*88.1%*	*11.9%*	*100.0%*
			1,251	**124**	**1,375**
	Men	All Above the SPA, Men	*89.4%*	*10.6%*	*100.0%*
			440	**43**	**483**
		Economically active	*90.6%*	*9.4%*	*100.0%*
			1,871	**299**	**2,170**
	Women	Economically inactive	*85.6%*	*14.4%*	*100.0%*

			Yes	No	Total
		All Above the SPA, Women	**2,311** *86.5%*	**342** *13.5%*	**2,653** *100.0%*
All Respondents (50-74 years old)	Men and women	Economically active	**2,908** *94.2%*	**160** *5.8%*	**3,068** *100.0%*
		Economically inactive	**3,776** *85.4%*	**560** *14.6%*	**4,336** *100.0%*
		All Respondents (50-74 years old)	**6,684** *89.2%*	**720** *10.8%*	**7,404** *100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

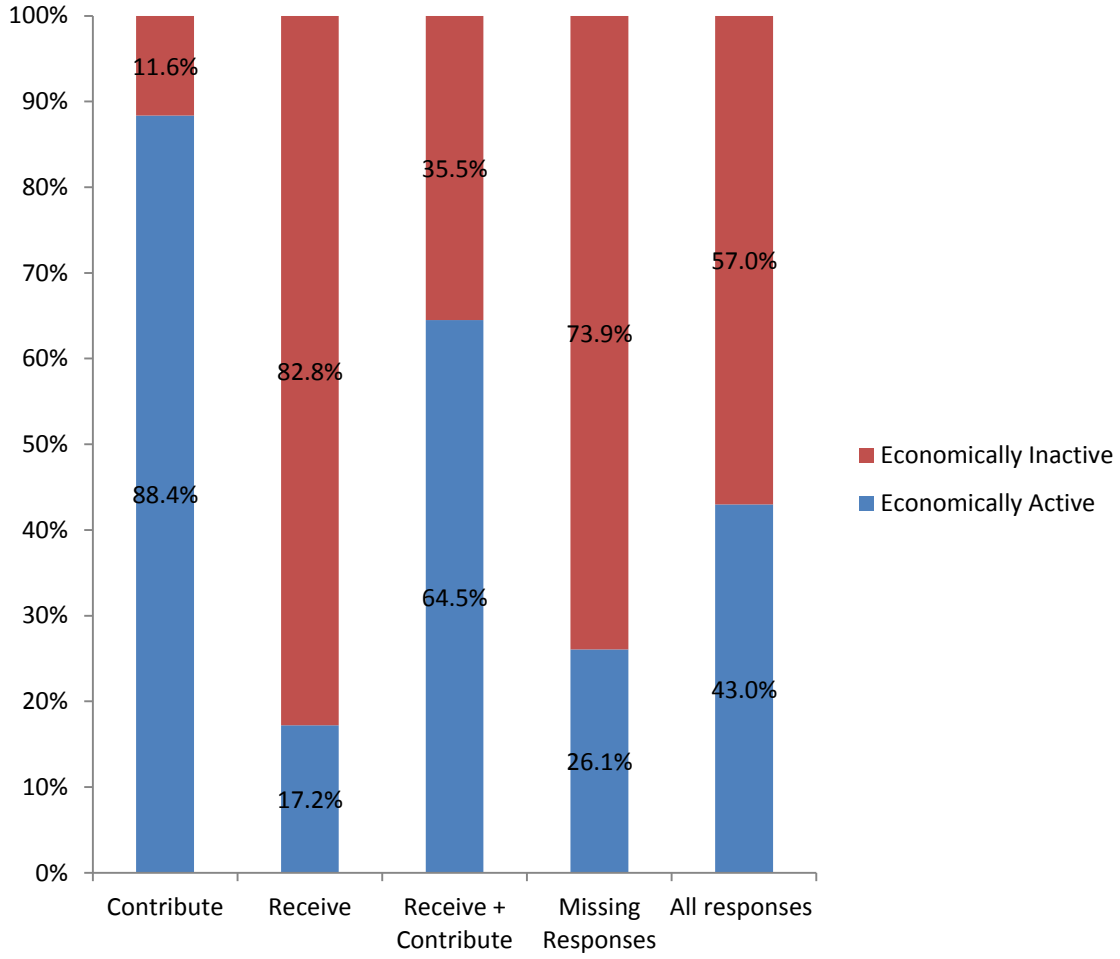
Appendix 31: Economic activity among individuals (aged 50-74 years old) by pension scheme membership status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 68)

	Contribute	Receive	Receive + Contribute	Missing	Total
Economically Active	**1,727**	**506**	**420**	**415**	**3,068**
	56.1%	*16.2%*	*13.7%*	*13.9%*	*100.0%*
Economically Inactive	**240**	**2,637**	**248**	**1,211**	**4,336**
	5.6%	*59.0%*	*5.7%*	*29.8%*	*100.0%*
All Respondents (50-74 years old)	**1,967**	**3,143**	**668**	**1,626**	**7,404**
	27.3%	*40.6%*	*9.2%*	*22.9%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 32A: Pension scheme membership status among individuals (aged 50-74 years old) by economic activity status (%), England, 2010 (see Appendix 32B for table of unweighted N values and weighted percentages)



X^2=2525.746, df=3, p<0.001

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 32B: Pension scheme membership status among individuals (aged 50-74 years old) by economic activity status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Appendix 32A)

	Contribute	Receive	Receive + Contribute	Missing Responses	All responses
Economically Active	**1,727**	**506**	**420**	**415**	**3,068**
	88.4%	*17.2%*	*64.5%*	*26.1%*	*43.0%*
Economically Inactive	**240**	**2,637**	**248**	**1,211**	**4,336**
	11.6%	*82.8%*	*35.5%*	*73.9%*	*57.0%*
Total	**1,967**	**3,143**	**668**	**1,626**	**7,404**
	100.0%	*100.0%*	*100.0%*	*100.0%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

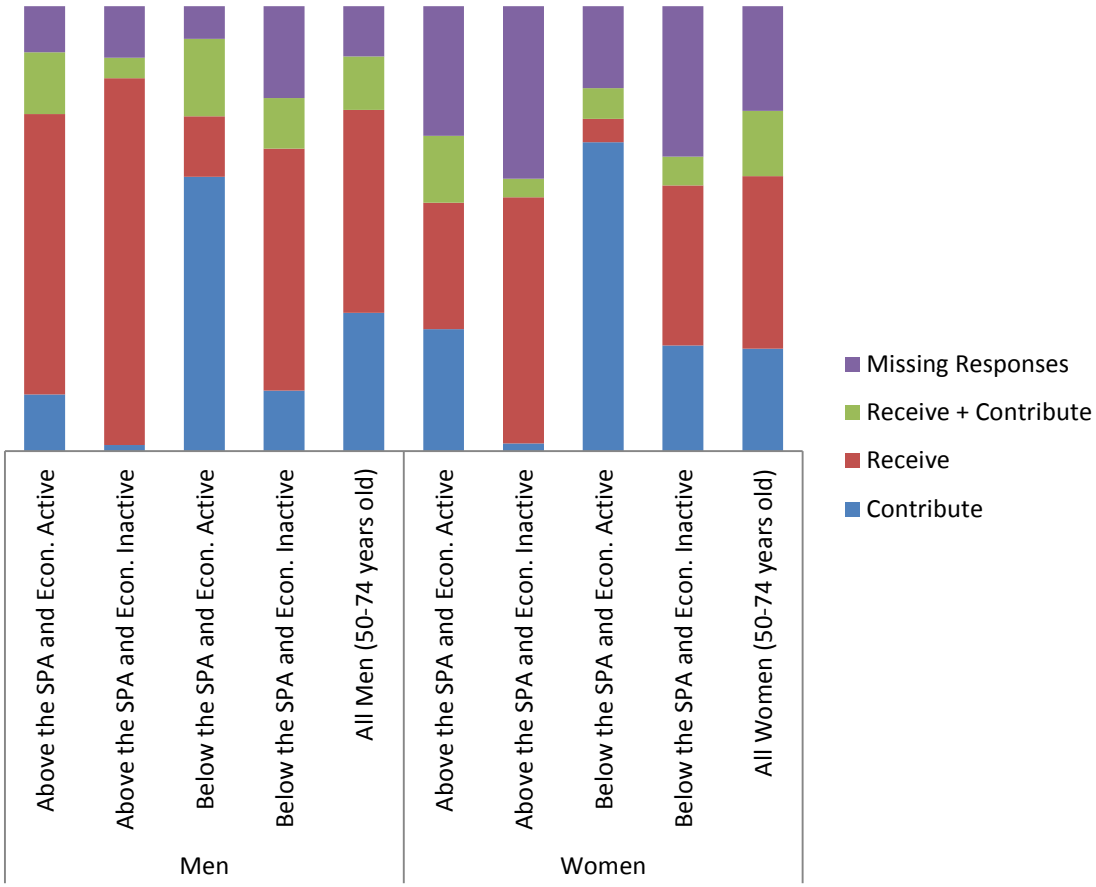
Appendix 33: Economic activity among individuals aged 50-74 years old (above/ below the SPA) by pension scheme membership status (%), (England), 2010 (Table of unweighted N values and weighted percentages relating to Figure 69)

		Contribute	Receive	Receive + Contribute	Missing	Total
Above the SPA	Economically Active	**159**	**275**	**109**	**146**	**689**
		23.0%	*38.7%*	*14.9%*	*23.5%*	*100.0%*
	Economically Inactive	**54**	**2,212**	**148**	**925**	**3,339**
		1.6%	*65.0%*	*4.3%*	*29.1%*	*100.0%*
Below the SPA	Economically Active	**1,568**	**231**	**311**	**269**	**2,379**
		64.6%	*10.5%*	*13.5%*	*11.5%*	*100.0%*
	Economically Inactive	**186**	**425**	**100**	**286**	**997**
		17.4%	*41.0%*	*9.8%*	*31.8%*	*100.0%*
All Respondents	All Respondents (50-74 years old)	**1,967**	**3,143**	**668**	**1,626**	**7,404**
		27.3%	*40.6%*	*9.2%*	*23.0%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 34A: Pension scheme membership status among men and women (above/ below the SPA) by economic activity status (%), England, 2010 (see for Appendix 34B for table of unweighted N values and weighted percentages)



Men X^2 =1570.878, df=9, p<0.001; Women X^2 =1716.258, df=9, p<0.001 All Respondents 50-74 years old X^2=3127.417, df=9, p<0.001)

Source: Author's analysis, ELSA 2010

Appendix 34B: Pension scheme membership status among men and women (above/ below the SPA) by economic activity status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Appendix 34A)

Gender		Contribute	Receive	Receive + Contribute	Missing	Total
Men	Above the SPA and Econ. Active	**24**	**133**	**30**	**19**	**206**
		12.7%	*63.0%*	*13.9%*	*10.4%*	*100.0%*
	Above the SPA and Econ. Inactive	**14**	**974**	**56**	**125**	**1,169**
		1.4%	*82.4%*	*4.6%*	*11.6%*	*100.0%*
	Below the SPA and Econ. Active	**825**	**183**	**243**	**89**	**1,340**
		61.7%	*13.6%*	*17.4%*	*7.4%*	*100.0%*
	Below the SPA and Econ. Inactive	**80**	**345**	**71**	**101**	**597**
		13.6%	*54.4%*	*11.4%*	*20.7%*	*100.0%*
	All Men (50-74 years old)	**943**	**1,635**	**400**	**334**	**3,312**
		31.1%	*45.6%*	*12.0%*	*11.3%*	*100.0%*
Women	Above the SPA and Econ. Active	**135**	**142**	**79**	**127**	**483**
		27.4%	*28.4%*	*15.1%*	*29.1%*	*100.0%*
	Above the SPA and Econ. Inactive	**40**	**1,238**	**92**	**800**	**2,170**
		1.8%	*55.3%*	*4.1%*	*38.8%*	*100.0%*
	Below the SPA and Econ. Active	**743**	**48**	**68**	**180**	**1,039**
		69.4%	*5.2%*	*6.9%*	*18.5%*	*100.0%*
	Below the SPA and Econ. Inactive	**106**	**80**	**29**	**185**	**400**
		23.5%	*19.0%*	*7.3%*	*50.1%*	*100.0%*
	All Women (50-74 years old)	**1,024**	**1,508**	**268**	**1,292**	**4,092**
		23.7%	*36.0%*	*6.4%*	*33.8%*	*100.0%*
All Respondents (50-74 years old)	Above the SPA and Econ. Active	**159**	**275**	**109**	**146**	**689**

Gender			Contribute	Receive	Receive + Contribute	Missing	Total
			23.0%	*38.8%*	*14.7%*	*23.5%*	*100.0%*
		Above the SPA and Econ. Inactive	**54**	**2,212**	**148**	**925**	**3,339**
			1.6%	*65.0%*	*4.3%*	*29.1%*	*100.0%*
		Below the SPA and Econ. Active	**1,568**	**231**	**311**	**269**	**2,379**
			64.6%	*10.5%*	*13.5%*	*11.5%*	*100.0%*
		Below the SPA and Econ. Inactive	**186**	**425**	**100**	**286**	**997**
			17.4%	*40.9%*	*9.8%*	*31.9%*	*100.0%*
	All Respondents (50-74 years old)		**1,967**	**3,143**	**668**	**1,626**	**7,404**
			27.3%	*40.6%*	*9.1%*	*23.0%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 35: Economic activity among individuals aged 50-74 years old by Region (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 70)

	London	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	North East	South East	South West	Total
	281	**373**	**312**	**304**	**326**	**411**	**149**	**543**	**353**	**3,052**
Economically active	*11.5%*	*13.5%*	*9.5%*	*8.0%*	*10.5%*	*12.3%*	*4.6%*	*18.6%*	*11.6%*	*100.0%*
	371	**521**	**499**	**503**	**460**	**535**	**268**	**673**	**489**	**4,319**
Economically inactive	*11.2%*	*13.4%*	*11.1%*	*10.0%*	*10.6%*	*11.6%*	*5.4%*	*15.8%*	*10.9%*	*100.0%*
	652	**894**	**811**	**807**	**786**	**946**	**417**	**1,216**	**842**	**7,371**
All Respondents (50-74 years old)	*11.3%*	*13.4%*	*10.5%*	*9.1%*	*10.5%*	*11.9%*	*5.1%*	*17.0%*	*11.2%*	*100.0%*

Unweighted N values, weighted percentages

Source: Author's analysis, ELSA 2010

Appendix 36: Economic activity among individuals aged 50-74 years old by caring status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 71)

	Non-carer	1-19 hours p/wk	20-49 hours p/wk	50+ hours p/wk	Missing-not mentioned if caring	Total
Economically active	**119**	**201**	**29**	**52**	**2,667**	**3,068**
	3.7%	*6.1%*	*.7%*	*1.8%*	*87.7%*	*100.0%*
Economically inactive	**161**	**265**	**105**	**186**	**3,619**	**4,336**
	3.9%	*5.7%*	*2.5%*	*4.7%*	*83.3%*	*100.0%*
All Respondents (50-74 years old)	**280**	**466**	**134**	**238**	**6,286**	**7,404**
	3.8%	*5.9%*	*1.7%*	*3.5%*	*85.2%*	*100.0%*

Unweighted N values, weighted percentages

Note: p/wk=per week

Source: Author's analysis, ELSA 2010

Appendix 37: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by caring status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 72)

		Non-carer	1-19 hours p/wk	20-49 hours p/wk	50+ hours p/wk	Missing-not mentioned if caring	Total
	Economically active	44	68	8	21	1,405	1,546
		2.8%	*4.2%*	*.4%*	*1.5%*	*91.0%*	*100.0%*
	Economically inactive	54	79	24	73	1,536	1,766
		3.5%	*4.3%*	*1.5%*	*4.5%*	*86.3%*	*100.0%*
Men	All Men (50-74 years old)	98	147	32	94	2,941	3,312
		3.2%	*4.3%*	*1.0%*	*3.0%*	*88.6%*	*100.0%*
	Economically active	75	133	21	31	1,262	1,522
		4.7%	*8.4%*	*1.0%*	*2.2%*	*83.6%*	*100.0%*
	Economically inactive	107	186	81	113	2,083	2,570
		4.2%	*6.8%*	*3.1%*	*4.8%*	*81.1%*	*100.0%*
Women	All Women (50-74 years old)	182	319	102	144	3,345	4,092
		4.4%	*7.4%*	*2.4%*	*3.8%*	*82.0%*	*100.0%*
	Economically active	119	201	29	52	2,667	3,068
		3.7%	*6.1%*	*.7%*	*1.8%*	*87.8%*	*100.0%*
	Economically inactive	161	265	105	186	3,619	4,336
		3.9%	*5.7%*	*2.5%*	*4.7%*	*83.3%*	*100.0%*
All Respondents (50-74 years old)	All Respondents (50-74 years old)	280	466	134	238	6,286	7,404
		3.8%	*5.9%*	*1.7%*	*3.4%*	*85.2%*	*100.0%*

Unweighted N values, weighted percentages

Note: p/wk=per week

Source: Author's analysis, ELSA 2010

Appendix 38: Economic activity among men and women aged 50-74 years (above/ below the SPA) old by caring status (%), England, 2010 (Table of unweighted N values and weighted percentages relating to Figure 73)

			Non-carer	1-19 hours p/wk	20-49 hours p/wk	50+ hours p/wk	Missing-not mentioned if caring	Total
Below the SPA			**40**	**60**	**6**	**16**	**1,218**	**1,340**
		Economically active	*3.0%*	*4.3%*	*.4%*	*1.4%*	*91.0%*	*100.0%*
			25	**30**	**11**	**36**	**495**	**597**
		Economically inactive	*5.0%*	*4.8%*	*2.4%*	*6.7%*	*81.1%*	*100.0%*
			65	**90**	**17**	**52**	**1,713**	**1,937**
	Men	All Below the SPA, Men	*3.6%*	*4.5%*	*1.0%*	*3.0%*	*88.1%*	*100.0%*
			59	**96**	**17**	**22**	**845**	**1,039**
		Economically active	*5.4%*	*8.7%*	*1.2%*	*2.5%*	*82.3%*	*100.0%*
			27	**40**	**19**	**33**	**281**	**400**
		Economically inactive	*6.7%*	*8.1%*	*4.2%*	*11.0%*	*69.9%*	*100.0%*
			86	**136**	**36**	**55**	**1,126**	**1,439**
	Women	All Below the SPA, Women	*5.8%*	*8.5%*	*2.1%*	*5.0%*	*78.6%*	*100.0%*
Above the SPA			**4**	**8**	**2**	**5**	**187**	**206**
		Economically active	*2.3%*	*4.0%*	*.6%*	*2.9%*	*90.2%*	*100.0%*
			29	**49**	**13**	**37**	**1,041**	**1,169**
		Economically inactive	*2.6%*	*4.0%*	*1.1%*	*3.2%*	*89.2%*	*100.0%*
			33	**57**	**15**	**42**	**1,228**	**1,375**
	Men	All Above the SPA, Men	*2.5%*	*4.0%*	*1.0%*	*3.1%*	*89.3%*	*100.0%*
			16	**37**	**4**	**9**	**417**	**483**
	Women	Economically active	*3.5%*	*7.9%*	*.7%*	*1.5%*	*86.4%*	*100.0%*

			80	**146**	**62**	**80**	**1,802**	**2,170**
		Economically inactive	*3.7%*	*6.5%*	*2.9%*	*3.6%*	*83.3%*	*100.0%*
			96	**183**	**66**	**89**	**2,219**	**2,653**
		All Above the SPA, Women	*3.7%*	*6.7%*	*2.5%*	*3.2%*	*83.9%*	*100.0%*
All Respondents 50-74 years old			**119**	**201**	**29**	**52**	**2,667**	**3,068**
		Economically active	*3.7%*	*6.1%*	*.7%*	*1.8%*	*87.7%*	*100.0%*
			161	**265**	**105**	**186**	**3,619**	**4,336**
		Economically inactive	*3.9%*	*5.7%*	*2.5%*	*4.7%*	*83.3%*	*100.0%*
			280	**466**	**134**	**238**	**6,286**	**7,404**
	Men and women	All Respondents (50-74 years old)	*3.8%*	*5.9%*	*1.7%*	*3.4%*	*85.2%*	*100.0%*

Unweighted N values, weighted percentages

Note: p/wk=per week

Source: Author's analysis, ELSA 2010

Appendix 39: Chi-square test significance values, ELSA Wave 5, when cross-tabulated with the o**utcome variable** "economic activity" among respondents who are above/ below the SPA: All respondents, men-only, women-only

		Wave 5- Men and women			Wave 5- men-only			Wave 5- women-only		
		Pearson chi Square Value	df	Asymp. Sig. (2-sided)	Pearson chi Square Value	df	Asymp. Sig. (2-sided)	Pearson chi Square Value	df	Asymp. Sig. (2-sided)
	Below the SPA									
	Above the SPA									
SPA	All Respondents	1,927.695	1	0.000	936.354	1	.000	903.429	1	.000
	Below the SPA	.178	1	.673						
	Above the SPA	7.071	1	.008						
Gender	All Respondents	122.061	1	.000						
	Below the SPA	23.288	3	.000	39.604	3	.000	.613	3	.894
	Above the SPA	21.402	3	.000	5.663	3	.129	19.633	3	.000
Marital Status	All Respondents	120.661	3	.000	51.153	3	.000	76.683	3	.000
	Below the SPA	9.459	6	.149	22.012	6	.001	14.483	6	.025
	Above the SPA	6.159	6	.406	7.320	6	.292	17.227	6	.008
Ethnicity	All Respondents	22.297	6	.001	12.901	6	.045	25.171	6	.000
	Below the SPA	418.476	2	.000	233.133	2	.000	191.063	2	.000
	Above the SPA	74.401	2	.000	23.857	2	.000	50.917	2	.000
SRGH	All Respondents	360.485	2	.000	202.509	2	.000	168.172	2	.000
	Below the SPA	463.119	2	.000	298.353	2	.000	166.814	2	.000
	Above the SPA	90.211	2	.000	20.073	2	.000	71.937	2	.000
LLSI	All Respondents	498.899	2	.000	268.619	2	.000	221.936	2	.000

		Wave 5- Men and women			Wave 5- men-only			Wave 5- women-only		
		Pearson chi Square Value	df	Asymp. Sig. (2-sided)	Pearson chi Square Value	df	Asymp. Sig. (2-sided)	Pearson chi Square Value	df	Asymp. Sig. (2-sided)
Quality of Life	Below the SPA	40.582	1	.000	22.108	1	.000	18.833	1	.000
	Above the SPA	27.069	1	.000	6.153	1	.013	19.727	1	.000
	All Respondents	36.723	1	.000	121.756	49	.000	82.700	52	.004
Housing Tenure	Below the SPA	304.954	4	.000	237.807	4	.000	78.943	4	.000
	Above the SPA	109.347	4	.000	26.350	4	.000	81.132	4	.000
	All Respondents	798.680	4	.000	442.752	4	.000	350.242	4	.000
Occupational Social Class	Below the SPA	40.615	4	.000	28.246	4	.000	23.924	4	.000
	Above the SPA	31.086	4	.000	23.189	4	.000	13.616	4	.009
	All Respondents	116.633	4	.000	42.588	4	.000	49.256	4	.000
Highest Education	Below the SPA	104.281	4	.000	51.325	4	.000	57.765	4	.000
	Above the SPA	56.059	4	.000	14.512	4	.006	46.840	4	.000
	All Respondents	344.689	4	.000	140.858	4	.000	176.831	4	.000
Car Access	Below the SPA	124.885	1	.000	100.570	1	.000	31.454	1	.000
	Above the SPA	16.251	1	.000	12.603	1	.000	7.191	1	.007
	All Respondents	129.765	1	.000	97.051	1	.000	34.311	1	.000
Pension Scheme Membership	Below the SPA	2525.746	3	.000	1244.329	3	.000	1252.171	3	.000
	Above the SPA	771.017	3	.000	90.686	3	.000	235.885	3	.000
	All Respondents	561.837	3	.000	543.437	3	.000	457.125	3	.000
Region	Below the SPA	31.412	8	.000	23.796	8	.002	19.028	8	.015
	Above the SPA	12.195	8	.143	5.317	8	.723	10.650	8	.222
	All Respondents	21.988	8	.005	11.089	8	.197	19.485	8	.012
Caring Status	Below the SPA	119.553	4	.000	66.973	4	.000	52.419	4	.000

	Wave 5- Men and women			Wave 5- men-only			Wave 5- women-only		
	Pearson chi Square Value	df	Asymp. Sig. (2-sided)	Pearson chi Square Value	df	Asymp. Sig. (2-sided)	Pearson chi Square Value	df	Asymp. Sig. (2-sided)
Above the SPA	11.033	4	.026	.484	4	.975	12.309	4	.015
All Respondents	72.651	4	.000	35.530	4	.000	32.957	4	.000

Green cells identify results which had been statistically significant to the 0.001 level (95% CI p< 0.001), red cells identify where results had not been statistically significant, orange cells highlight intermediate levels of significance where variables were significant at either the 0.005 or 0.01 level (95% CI p< 0.01, p< 0.005), black cells indicate where analysis was not computed.

Source: Author's own analysis, using ELSA 2010, weighted data.

Appendix 40: Variables and their categories with accompanying significance levels: Model 5

Regression Number	Variables and their accompanying categories which were found to be statistically significant and thus are said to be individual characteristics associated with economic outcomes among the respondent sample, England, 2010.
Regression 1	[REG_all50plus]*** (exception however of the category '55-59 years old' which was not significant)
	[REG_Gender]*** (reference category however was not significant)
	[REG_Maritalstatus]** (only category of 'divorced was significant)
	[REG_SRGH]*** ('Fair' category not significant)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** & * (Exception of the 'Rent LA/HA' category which was not significant)
	[REG_HighestEd]*** ('Intermediate level' and 'higher level' categories were not statistically significant)
	[REG_Caraccess]*** (only 'No' was significant, reference category failed to show a significant result)
	[REG_NSSEC]*** (Reference category and the categories of small employers and semi-routine were statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***

	[REG_real_caregiving_hours]*** (reference and missing categories were significant)
Regression 2	[REG_all50plus_men_age] *** (the categories of 55-59 and 60-64 failed to show statistically significant results)
	[REG_Maritalstatus]* (reference category and single category only categories to be significant)
	[REG_SRGH]*** ('Fair' category not significant)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** (only reference category and part-rent part-mortgage' statistically significant)
	[REG_HighestEd]*** &** (reference and low level categories only to show significance)
	[REG_Caraccess]*** (only 'No' was significant, reference category failed to show a significant result)
	[REG_NSSEC]*** (Reference category and the categories of small employers and semi-routine were statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***
	[REG_real_caregiving_hours]*** (only the reference category was significant)
Regression 3	[REG_all50plus_women_age]*** (only category of '55-59 years old' was statistically not significant)
	[REG_Maritalstatus]** & *** ('single' is the only category which failed to find a significant result)

	[REG_SRGH]*** ('Fair' category not significant)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** (only reference category and part-rent part-mortgage' statistically significant)
	[REG_HighestEd]*** (only 'no qualifications' to show a significant result)
	[REG_NSSEC]* (only 'small employers' is significant)
	[REG_FINAL_PENSION_VARIABLE]***
	[REG_real_caregiving_hours]***& *(only the reference and missing categories are statistically significant)
Regression 4	[REG_ABOVEAGEGROUPS]*** (70-74 years old statistically significant)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** (only reference category and part-rent part-mortgage' statistically significant)
	[REG_HighestEd]*** &** (reference, low level and no qualifications statistically significant)
	[REG_NSSEC]*** & ** (Reference category and the categories of small employers and semi-routine were statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***
Regression 5	[REF_abovespamen_AGE]*** (70-74 years old statistically significant)
	[REG_S24Housingtenure]***&* (reference

	category and part-rent part-mortgage' statistically significant)
	[REG_HighestEd]* (reference and 'no qualifications' categories statistically significant)
	[REG_NSSEC]*** & ** & *(Reference category and the categories of small employers and semi-routine were statistically significant)
	[REG_FINAL_PENSION_VARIABLE]*** (only category which failed to find a statistically significant result was the category labelled as 'Contribute and Receive')
Regression 6	[REF_abovespawomen_AGE]***
	[REG_Maritalstatus]** & * (only reference and divorced statistically significant categories)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** (only reference category and part-rent part-mortgage' statistically significant)
	[REG_NSSEC] ** (only the 'small employers' category was statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***
Regression 7	[REG_SRGH]*** ('Fair' category not significant)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** (only reference category and part-rent part-mortgage' statistically significant)
	[REG_Caraccess]** (only 'No' was significant, reference category failed to show a significant

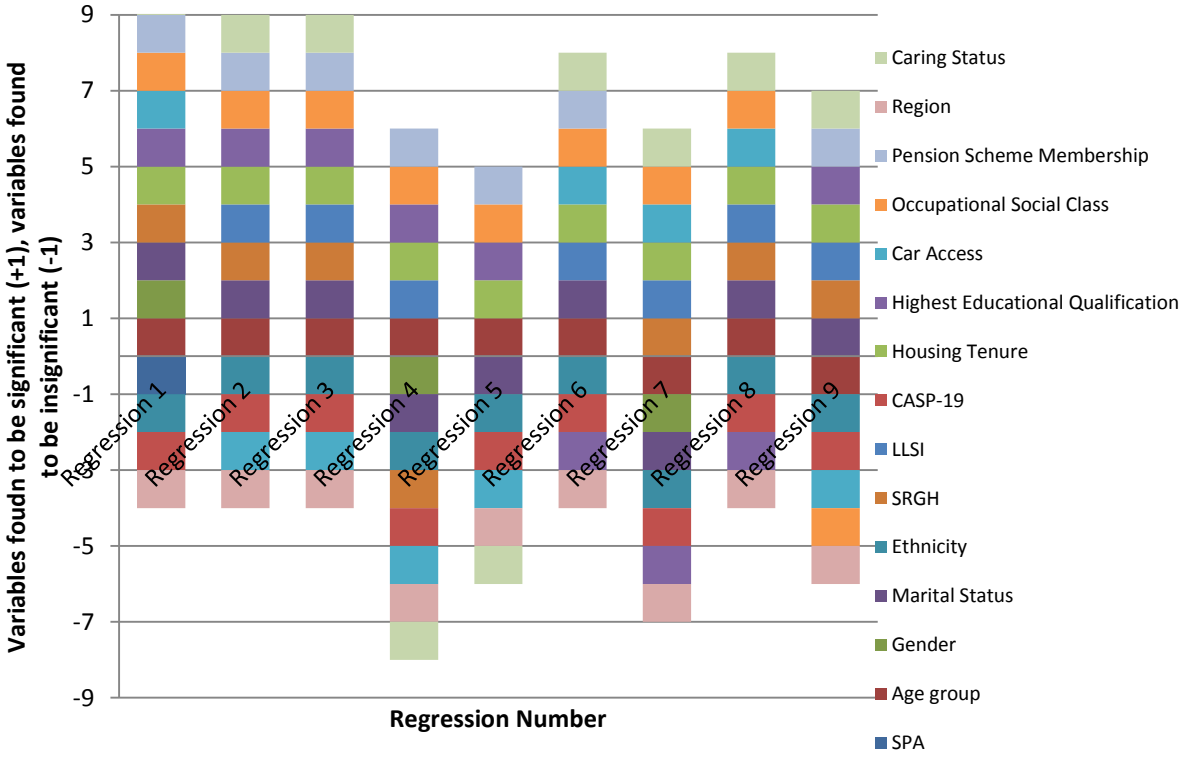
	result)
	[REG_NSSEC]*** (Reference category and the categories of 'small employers' and 'semi-routine' were statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***
	[REG_real_caregiving_hours]*** (reference and missing categories were significant)
Regression 8	[REG_Menbelowspa_age]*** (only referece category statistically significant)
	[REG_Maritalstatus]** (reference category and single category only categories to be significant)
	[REG_SRGH]*** ('Fair' category not significant)
	[REG_LLSI]*** ('Yes long-standing but not limiting' however was not significant)
	[REG_S24Housingtenure]*** (only reference category and part-rent part-mortgage' statistically significant)
	[REG_Caraccess]** (only 'No' was significant, reference category failed to show a significant result)
	[REG_NSSEC]*** (Reference category and the categories of 'small employers' and 'semi-routine' were statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***
	[REG_real_caregiving_hours]*** & ** (reference and 50+ hours per week categories were the only ones to be significant)
Regression 9	[REG_Maritalstatus]* (reference category and 'divorced' category significant)

	[REG_SRGH]*** (‘Fair’ category not significant)
	[REG_LLSI]*** (‘Yes long-standing but not limiting’ however was not significant)
	[REG_S24Housingtenure]*** (only reference category and the ‘part-rent part-mortgage’ category were statistically significant)
	[REG_HighestEd]*** & * (reference and ‘no qualifications’ categories statistically significant)
	[REG_FINAL_PENSION_VARIABLE]***
	[REG_real_caregiving_hours]*** & ** (reference and missing categories were significant)

Note: p/wk=per week

Source: Author’s own: Model 4, Regression 9, (*=p<0.01, **p<0.005, ***=p<0.001).

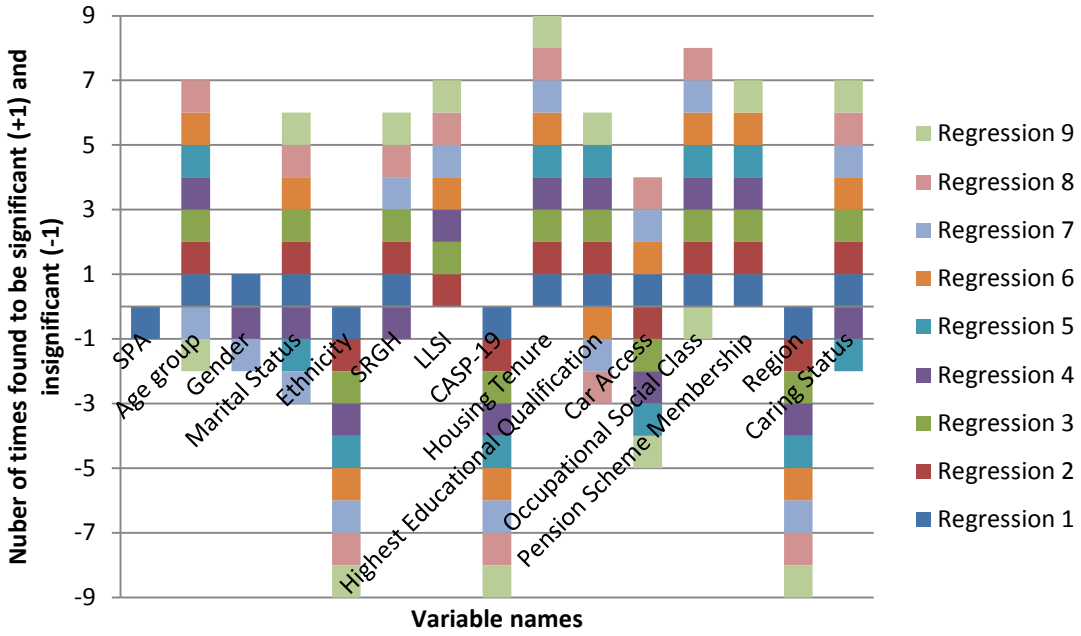
Appendix 41: Regressions 1-9: Significant and insignificant variables:



Note: Y-axis: every +1=significance found, very -1=variable found to be not statistically significant.

Source: Author's own.

Appendix 42: Variable significance: Regressions 1 - 9



Note: Y-axis: positives=significance found, negative=variable found to be not statistically significant.
Source: Author's own.

Appendix 43: Summary of statistically significant variables across the regressions (1 - 9)

Characteristics	50-74 years old			Above the SPA 60/65-74 years old			Below the SPA 50-59/64 years old		
	Men and Women	Men	Women	Men and Women	Men	Women	Men and Women	Men	Women
	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6	Regression 7	Regression 8	Regression 9
SPA	X								
Age group*	✓	✓	✓	✓	✓	✓	X	✓	X
Gender	✓			X			X		
Marital Status	✓	✓	✓	X	X	✓	X	✓	✓
Ethnicity	X	X	X	X	X	X	X	X	X
SRGH	✓	✓	✓	X	X	X	✓	✓	✓
LLSI	✓	✓	✓	✓	X	✓	✓	✓	✓
CASP-19	X	X	X	X	X	X	X	X	X
Housing Tenure	✓	✓	✓	✓	✓	✓	✓	✓	✓
Highest Educational Qualification	✓	✓	✓	✓	✓	X	X	X	✓
Car Access	✓	X	X	X	X	X	✓	✓	X
Occupational Social Class	✓	✓	✓	✓	✓	✓	✓	✓	X
Pension Scheme Membership	✓	✓	✓	✓	✓	✓	✓	✓	✓
Region	X	X	X	X	X	X	X	X	X
Caring Status	✓	✓	✓	X	X	X	✓	✓	✓

Note: ticks=statistically significant result, crosses=not a statistically significant result, black cells=variables not included in this stage of analysis.

Green cells indicate consistency in finding statistical significance among the regression groups (1-3, 4-6, 7-9), while red cells indicate consistency in a lack of statistical significance among the regression groups (1-3, 4-6, 7-9),

***=For specific details of the Age group variable used refer to key of Table 17 on page 163.**

Source: Author's own.

Appendix 44: Number of respondents per category for the derived variables of: **'Region' and 'Ethnicity'**, ELSA (2010)

		Region									Total
		London	North West	Yorkshire and Humber	East Midlands	West Midlands	East of England	North East	South East	South West	
	Above the SPA & Econ. Active	77	79	47	40	58	75	26	109	67	578
	Above the SPA & Econ. Inactive	303	368	303	273	303	340	139	472	316	2,817
	Below the SPA & Econ. Active	247	303	223	185	238	273	105	417	261	2,252
	Below the SPA & Econ. Inactive	117	136	115	101	96	94	62	121	94	936
Total		744	886	688	599	695	782	332	1,119	738	6,583

Source: Author's analysis ELSA, Wave 5, (weighted)

Note: Yellow highlights cell counts <30

		Ethnicity							Total
		White	Mixed ethnic group	Black	Black British	Asian	Asian British	Any Other group	
	Above the SPA & Econ. Active	553	1	4	4	1	4	4	571
	Above the SPA & Econ. Inactive	2673	7	16	12	20	23	7	2,758
	Below the SPA & Econ. Active	2086	4	18	7	37	33	28	2,213
	Below the SPA & Econ. Inactive	882	7	5	3	11	15	7	930
Total		6194	19	43	26	69	75	46	6,472

Note: Yellow highlights cell counts <30

Source: Author's analysis ELSA, Wave 5, (weighted)

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