

**Economic Inequality and Intimate
Partner Violence Against Women:
An Analysis of the British Crime
Survey 2008/09**

Jude Towers, MRes, BA(Hons)

Submitted for the degree of Doctor of Philosophy

March 2013

ProQuest Number: 11003432

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 11003432

Published by ProQuest LLC (2018). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

Economic Inequality and Intimate Partner Violence Against Women: An Analysis of the British Crime Survey 2008/09.

Jude Towers. MRes, BA(Hons).

Submitted for the degree of Doctor of Philosophy.

March 2013

Abstract

This thesis examines *how economic inequality is associated with intimate partner violence against women*. It finds working-age women in England and Wales with fewer economic resources are more likely to experience intimate partner violence compared to women with comparatively greater economic resources. In this thesis economic inequality is conceived as the disparity in economic resources across a population. This therefore links the empirical findings to the wider concept. Thus it is concluded that *economic inequality is associated with increased likelihood of intimate partner violence against women*.

The thesis extends previous work on this question by considering a greater range of resources, in conjunction with one another, across three units of analysis (individual, household and neighbourhood). It also specifically examines how economic inequality is related to remaining in, and exiting from, violent relationships for women from the same population.

Analysis is conducted on a representative sample of 12,920 working-age women in the British Crime Survey 2008/09. The process of critically analysing the choice of data source and measure of intimate partner violence is essential. It ensures that the empirical findings are robust and that conclusions drawn are framed by the strengths, but also any limitations, of these choices.

Not all economic resources are of equal importance in association with intimate partner violence. Housing tenure is found to be the most important. Women's occupational status appears to be more significant than current employment status. Women's earned income is important in relation to exiting a recently violent relationship, but this connection is highly complex.

Considering economic resources across three units of analysis enabled the links between them to be explored. This reveals the importance of household, compared to individual and neighbourhood, economic resources. Women's household structure is thus demonstrated to be a key link between economic inequality and intimate partner violence against women.

Acknowledgements

I thank my two supervisors Professor Sylvia Walby and Professor Brian Francis for all their support and guidance in researching and writing this Ph.D.

I thank the Economic and Social Research Council (ESRC) for funding me to research this Ph.D. and for the annual Enhance Quantitative Stipend award which has allowed me to develop my statistical skills.

I also owe grateful thanks to a number of organisations and individuals for their invaluable contributions of data and supportive responses to my many and varied queries:

I thank the Home Office for their permission to use the self-complete modules of the British Crime Survey in my research, and for the opportunity to spend a few days with the British Crime Survey team at the Home Office at the beginning of this Ph.D. The experience was invaluable. My thanks go to all the team there.

I also have to thank the Economic and Social Data Service, in particular to Birgit Austin who gave me so much guidance and support in applying for the British Crime Survey special license datasets.

My thanks also to the Map of Gaps project team, in particular Maddie Coy, to the MADE in Lancashire steering committee, and to the police forces of England and Wales, all of whom generously supplied data for this thesis.

My thanks also go to the William Richie Travel Award for funding my travel expenses to the British Sociological Association Conference in 2012.

Finally my very grateful thanks go to Paul Levy for all his support, not least giving up his weekend to proof read this thesis.

Declaration

I declare that this thesis is my own work and has not been submitted elsewhere for the award of a higher degree.

Jude Towers

Table of Contents

TABLE OF TABLES	9
TABLE OF FIGURES	13
TABLE OF EQUATIONS.....	13
Chapter 1: Introduction	14
1.1 Thesis structure.....	20
Chapter 2: Literature Review	32
2.1 Introduction	32
2.2 Violence against women and intimate partner violence against women	37
2.3 Economic Inequality.....	50
2.4 Economic inequality and intimate partner violence against women	58
2.5 The economics of exiting violent relationships.....	72
2.6 Intra-household economic inequality and intimate partner violence	78
2.7 Setting the research frame for the thesis	83
2.8 Conclusion.....	89
Chapter 3: Measurement.....	91
3.1 Introduction	91
3.2 Possible sources of data.....	94
3.3 The British Crime Survey: 2008/09 sweep	111
3.4 Measures of intimate partner violence: BCS 2008/09.....	116
3.5 Limitations: Measurement.....	133
3.6 Conclusions	135
Chapter 4: Methodology.....	137
4.1 Introduction	137
4.2 The British Crime Survey 2008/09	139
4.3 The analysis sample	143
4.4 Missing data	149
4.5 Complex sample design	161
4.6 Operationalising economic inequality through the BCS 2008/09	169
4.7 Analysis methods	189
4.8 Limitations: Methodology.....	201
4.9 Hypotheses.....	204
4.10 Conclusion.....	208
Chapter 5: Findings	210

5.1 Introduction	210
5.2 Operationalising economic inequality and intimate partner violence against women.....	215
5.3 Is current employment status as important as occupational status?.....	218
5.4 Is women's earned income associated with intimate partner violence?	224
5.5 Is women's earned income more important than current employment status and socio-economic class?	230
5.6 Are household economic resources associated with intimate partner violence?.....	233
5.7 Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?	241
5.8 Is there an association between specialist violence against women service provision and intimate partner violence in the UK?.....	245
5.9 Are women's employment and earned income the most important economic resources associated with intimate partner violence?	249
5.10 Is being in a violent relationship associated with economic inequality?.....	256
5.11 Does exiting a violent relationship impact on women's economic inequality?	270
5.12 Is exiting a violent relationship associated with greater economic inequality than remaining?	282
5.13 Conclusion.....	294
Chapter 6: Discussion.....	296
6.1 Introduction	296
6.2 Addressing the research questions.....	301
6.3 Conclusion.....	328
Chapter 7: Conclusion	332
7.1 Introduction	332
7.2 Conclusions	345
Bibliography	361

TABLE OF TABLES

Chapter 3: *Measurement*

3.1 Results of the exploratory analysis on PFAs in England and Wales (N=38).....	104
3.2 Matching the research agenda to the most appropriate sweep of the BCS.....	115
3.3(a) Individual acts making up the composite measure of IPV use in analysis.....	120
3.3(b) Prevalence of DV, sexual assault and/or stalking across the sample population.....	121
3.4 Estimated prevalence rate of IPV in the sample population.....	121
3.5(a) Estimated percentage of the national working-age population per incident category.....	121
3.5(b) Estimated percentage of the national working-age population per incident category (with missing respondents).....	122
3.6 Harms sustained by women from IPV in the past 12 months.....	124
3.7(a) Estimates for 16-59 year old, ever partnered hetero/bisexual women and men experiencing IPV in the past 12 months.....	132
3.7(b) Relationship between sex and IPV.....	132

Chapter 4: *Methodology*

4.1 Disaggregation of the sampling frame for analysis.....	144
4.2 Relationship between age grouped and DV.....	155
4.3 Relationships between age and DV.....	155
4.4 Relationship between age and exclusion from the self-complete module.....	157
4.5 Relationship between ethnicity and exclusion from the self-complete module.....	157
4.6 Relationship between socio-economic class and exclusion from the self-complete module.....	157
4.7 Quantifying the missing data from individual factors used in the analysis.....	160
4.8 Factors representing economic resources.....	171
4.9 Factors representing demographic characteristics.....	173
4.10(a) Test of independence: age * economic resource factors.....	174
4.10(b) Test of independence: highest level of education (none; GCSEs; A/AS-Level; Degree/diploma) * economic resource factors.....	175
4.10(c) Test of independence: children in household (children or no children) * economic resource factors.....	176
4.10(d) Test of independence: ethnicity (non-White or White) * economic resource factors.....	177
4.11 Distribution of the population by current employments status.....	179
4.12 Distribution of the population by earned income.....	179
4.13 Distribution of the population by socio-economic class.....	180

4.14 Distribution of the population by household income.....	182
4.15 Test of independence: household income * single or two or more adult household.....	183
4.16 Distribution of the population by number of adults in a household.....	183
4.17 Distribution of the population by housing tenure.....	183
4.18 Constructing the poverty threshold.....	183
4.19 Distribution of the population by household poverty status.....	184
4.20 Estimated number and frequency of respondent households at or below the poverty threshold by each of the four groups.....	184
4.21 Distribution of the population by neighbourhood income deprivation.....	186
4.22 Distribution of the population by neighbourhood employment deprivation.....	186
4.23 Distribution of the population by specialist violence against women service provision.....	186
4.24 Distribution of the population by age.....	187
4.25 Distribution of the population by highest level of education.....	187
4.26 Distribution of the population by children in the household.....	188
4.27 Distribution of the population by ethnicity.....	188
4.28 Hosmer and Lemeshow (2000) guide to interpreting AUC values for binary logistic regression models.....	200
 Chapter 5: <i>Findings</i>	
5.1 Estimated percentage of women disclosing IPV by employment status.....	219
5.2(a) Relationship between employment status and IPV.....	219
5.2(b) Relationship status between unemployment and IPV.....	220
5.3(a) Estimated percentage of women disclosing IPV by socio-economic class.....	222
5.3(b) Estimated percentage of unemployed and economically inactive women by socio-economic class.....	222
5.4 Relationship between socio-economic class and IPV.....	222
5.5 Relationship between employment status, socio-economic class and IPV.....	223
5.6 Estimated percentage of women disclosing IPV by earned income.....	226
5.7 Relationship between women's earned income and IPV.....	226
5.8 Estimated percentage of women disclosing IPV by earned income including women designated as economically inactive or unemployed at point of survey.....	226
5.9(a) Relationship between women's earned income and IPV including women designated as economically inactive or unemployed at point of survey: ref cat is above average earnings.....	227
5.9(b) Relationship between women's earned income and IPV including women designated as economically inactive or unemployed at point of survey: ref cat is low earned income.....	227
5.10 Estimated percentage of women in single adult households in each earned income category by distribution across household income level categories.....	228

5.11 Relationship between women's earned income (WI), household income (HH) and IPV for single adult households.....	229
5.12 Relationship between individual economic resources and IPV.....	232
5.13 Estimated percentage of women disclosing IPV by household income.....	235
5.14 Relationship between household income and IPV.....	235
5.15 Test of independence: Household income * single or two or more adult households.....	236
5.16 Relationship between household income and IPV accounting for number of adults in the household.....	236
5.17 Estimated percentage of women disclosing IPV by housing tenure.....	237
5.18 Relationship between housing tenure and IPV.....	237
5.19 Estimated percentage of women disclosing IPV by household poverty status.....	238
5.20 Relationship between housing poverty status and IPV.....	238
5.21 Relationship between household economic resources and IPV.....	240
5.22 Result of two-level random intercept model where the second level is designated as LSOA with chi-square test of significance (1df) for disclosure of IPV.....	242
5.23 Estimated percentage of women disclosing IPV by neighbourhood income deprivation.....	242
5.24 Relationship between neighbourhood income deprivation and IPV.....	242
5.25 Estimated percentage of women disclosing IPV by neighbourhood employment deprivation.....	243
5.26 Relationship between neighbourhood employment deprivation and IPV.....	244
5.27 Result of two-level random intercept model where the second level is designated as LAA with chi-square test of significance (1df) for disclosure of IPV.....	247
5.28 Estimated percentage of women disclosing IPV by service provision (LAA).....	247
5.29(a) Relationship between specialist service provision and IPV: SPSS single-level model.....	247
5.29(b) Relationship between specialist service provision and IPV: MLwiN multilevel models.....	248
5.30 Relationship between all economic resources and IPV.....	252
5.31 Relationship between all economic resources and IPV, taking account of demographic characteristics.....	254
5.32(a) Estimated percentage of women in each of the three categories representing relationship status at point of survey.....	256
5.32(b) Estimated percentage of women disclosing IPV by relationship status.....	257
5.33 Relationship between all economic resources and IPV (remains).....	260
5.34 Distribution of women in violent relationships by number of adults in the household.....	264
5.35(a) Test of independence: number of adults in household (single or two or more) * economic resources for women in violent relationships.....	264
5.35(b) Estimated percentage of women in the 'poorest' category of each	

economic resource (remains).....	265
5.36 Demographic characteristics of women in non-cohabiting violent relationships in single adult households and women in the national working-age population.....	266
5.37(a) Test of independence: IPV or no IPV * economic resources for women in single adult households.....	266
5.37(b) Estimated percentage of women in the 'poorest' category of each economic resource (single adult households).....	267
5.38 Relationship between all economic resources and IPV (remain and two or more adult household).....	268
5.39 Relationship between all economic resources and IPV (exited).....	272
5.40 Distribution of women in violent relationships by number of adults in the household.....	276
5.41(a) Test of independence: single or two or more adult households * economic resources for exited women.....	276
5.41(b) Estimated percentage of women in the 'poorest' category of each economic resource (exited).....	277
5.42 Relationship between all economic resources and IPV (exited and single adult household).....	278
5.43 Relationship between all economic resources and IPV (exited and two or more adult households).....	280
5.44(a) Test of independence: relationship status (exit or remain) * economic resources.....	284
5.44(b) Estimated percentage of women in the 'poorest' category of each economic resource (exited and remain).....	285
5.45(a) Test of independence: relationship status (exit or remain) * economic resources in single adult households.....	286
5.45(b) Estimated percentage of women in the 'poorest' category of each economic resource (exited and remain) for single adult households.....	287
5.46(a) Test of independence: relationship status (exit or remain) * economic resources for households with two or more adults.....	288
5.46(b) Estimated percentage of women in the 'poorest' category of each economic resource (exited and remain) for households with two or more adults.....	289
5.47(a) Relationship between exited, remains and no IPV and residing in a single adult household.....	291
5.47(b) Relationship between exited and remains and residing in a single adult household.....	291
5.48(a) Test of independence: number of adults in the household (single or two or more) * economic resources.....	292
5.48(b) Estimated percentage of women in the 'poorest' category of each economic resource in single adult, and two or more adult, households.....	293

TABLE OF FIGURES

Chapter 3: *Measurement*

3.1 Email request under the FOI Act 2000 made to every police force in England and Wales for their reported incident data with a domestic violence flag.....	101
--	-----

Chapter 4: *Methodology*

4.1 Two ROC curves with AUC values: the first with an AUC of 0.579 is a poor fit, the second with an AUC of 0.777 is a much better fit.....	200
---	-----

TABLE OF EQUATIONS

Chapter 4: *Methodology*

(1) Design effect.....	167
(2) Wald test statistic.....	168
(3) Logit link function.....	192
(4) Single-level binary logistic regression model with link function logit and single explanatory variable.....	193
(5) Two-level logistic regression equation.....	193
(6) Variance partition coefficient: stage 1.....	195
(7) Variance partition coefficient: stage 3.....	195
(8) McFadden's R^2	198

Chapter 1: Introduction

Violence against women is a global problem of epidemic proportions. Prevalence estimates suggest millions of women are living with this gendered violence and its consequences (Watts and Zimmerman, 2002). Violence against women wrecks lives. It is a serious violation of women's human rights and is a form of gender inequality. Violence against women is an important cause of injury for women, and a significant risk factor for physical, psychological and other health-related problems, over the short- and long-term. Violence against women impacts on the economy and society. It reduces women's economic, social, political and creative capacity and ability to fully participate in society. The costs of essential services, required by women in the aftermath of violence, are substantial. Elimination of violence against women is the emancipatory objective. In order to achieve this, theoretical and empirical knowledge on the causes of violence against women and the factors associated with risk of violence for women are required. This thesis seeks to contribute knowledge to this emancipatory agenda.

The thesis sits at the intersection of applied social statistics and the disciplines of violence against women and inequality within sociology. All of these are required to adequately address the question raised throughout this thesis: *how is economic inequality associated with intimate partner violence against women*. The analysis of violence against women has not been central to mainstream sociology, but it is sociological research which has enabled comprehensive theories of violence against women to be developed, and it is sociological research which has underpinned the evidence-base which enables effective policy and practice interventions in the field

to be developed. Inequality, on the other hand, is a major theme in sociology. Quantitative research has rendered visible the global scale of violence against women. It has led to the unequivocal shift from an understanding of violence against women as the isolated actions of a small number of psychologically disturbed perpetrators to an understanding of violence against women as a global social problem affecting the lives of millions of women and girls. The findings from this thesis contribute to these three disciplines and additionally have implications for women's studies and criminology.

This thesis also contributes to demonstrating that statistics help build the knowledge base needed for transformative social change. In particular, this thesis demonstrates that a critical approach to, and comprehensive analysis of, the choice of data source, construction of analysis sample, measure of intimate partner violence, and the (re)construction of factors representing economic resources is essential to the research process. It ensures both that the empirical findings are robust, and that the conclusions drawn are framed by the strengths, but also any limitations, of the data and the analysis methods. Taking careful account of issues of survey design, missing data, and the impact of complex samples are also integral to this process. This practice has positive implications for further integrating quantitative research into social science disciplines.

The core task of this thesis is the examination of *how economic inequality is associated with intimate partner violence against women*.

Intimate partner violence is one expression of violence against women. There are multiple definitions of violence against women. This thesis utilises a broad definition

but with the emphasis on gender inequality. The definition of violence against women set forth in the United Nations *Declaration on the Elimination of Violence Against Women* (UN, 1993) embodies this approach, defining violence against women as ‘...any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women.’ The scope of the Declaration is broad, but its emphasis is on gender inequality. This is also embodied in the definition of violence against women set out in the United Nations *Convention on the Elimination of Discrimination Against Women* (UN, 1979) which defines violence against women as that which ‘targets a woman because she is a woman, or disproportionately affects women’.

As Watts and Zimmerman (2002) argue, this focus on women does not deny that men are subject to violence: indeed war, genocide and ethnic cleansing, and street and gang violence are significant causes of violent victimisation for men. However violence against men often differs in its aetiology (Watts and Zimmerman, 2002: 1232).

Intimate partner violence against women rather than violence against women is the focus of this thesis for two main reasons, one theoretical and one methodological. In utilising intimate relationships as the unit of analysis it is possible to set forth a research agenda which considers both economic inequality between women and men within intimate partnerships, and economic inequality between women within a national context. This further enables the question to be raised of whether economic inequality and intimate partner violence operates in the same way within intimate relationships as it does within a national context. For example, if women with fewer

economic resources are found to be at greater risk of intimate partner violence compared to women with comparatively greater economic resources, is it also the case that women with comparatively fewer economic resources than their intimate partner are similarly found to be at greater risk of intimate partner violence?

The second reason is a methodological one: availability of data and ensuring that sufficient depth could be achieved within the timeframe available. The research agenda (set out in chapter 2) calls for a national level analysis within a UK context. There are few sources which contain data on the variety of expressions which are encompassed under violence against women. Many contain data on intimate partner, and/or domestic, violence (intimate partner and household members), sexual violence, and increasingly stalking, but not also on forced marriage, female genital mutilation, trafficking for sexual exploitation, etc. Therefore a narrower focus than 'violence against women' is required. Further, the focus on intimate partner violence enables a sufficient depth of analysis to be achieved within the limited timeframe of the Ph.D. In focusing on intimate partner violence in this thesis, a number of key conclusions will be drawn which will contribute to the development of a future research agenda, along with previous research which has considered other expressions of violence against women, to consider whether the associations found between economic inequality and those different expressions are consistent, or whether certain expressions of violence against women have very different relationships with economic inequality.

Economic inequality, as a theoretical concept, can be conceived of as the disparity in the distribution of, and access to, economic resources within a population. The

analysis in this thesis concentrates on the disparity in economic resources between working-age women in England and Wales. Economic resources include both income and other economic assets, such as property, investments and savings. Economic resources, such as women's employment and women's earned income, household income and housing tenure, and level of neighbourhood deprivation, are used to operationalise the concept of 'economic inequality' in this thesis. In doing so, a wide range of economic resources can be explored, both individually and in conjunction with one another. This reveals the relative importance of different economic resources for different groups of women.

The unit of analysis also matters. Traditionally, the unit of analysis for economic inequality within countries is the household; this however risks obscuring women's unique position within the household. Previous work on violence against women and economic inequality has demonstrated the utility of deploying the individual as the unit of analysis in order to make women's position within households visible and to ensure that women's economic position in relation to intimate partner violence is examined. This thesis combines these two approaches and utilises both the individual and the household as units of analysis; exploring both in isolation and in conjunction with each other. In doing so, this thesis demonstrates that both are required to fully understand the very complex relationship between economic inequality and intimate partner violence. This is because household structure is found to be a key element in relation to economic inequality and intimate partner violence against women. The thesis additionally extends the units of analysis to the neighbourhood level. In doing so it demonstrates that women in the poorest neighbourhoods are at increased risk of intimate partner violence compared to

women in more affluent neighbourhoods. It also demonstrated that, as a unit of analysis, the neighbourhood is not as important as the household, for the analysis of economic inequality and intimate partner violence against women in this context.

The empirical findings from the thesis are discussed in relation to a series of research questions designed to identify and focus on key aspects of the thesis question. From these discussions, at the end of the thesis, a number of key conclusions are drawn on the associations between economic inequality and intimate partner violence. As well as finding the units of analysis to be vital in fully exploring this question, a number of specific conclusions relating to economic resources and intimate partner violence are also made, as are a number of conclusions which consider women's relationship at point of survey (remain in currently violent relationship or exited from recently violent relationship) in association with intimate partner violence. Overall, however, the empirical findings presented in this thesis demonstrate that women with fewer economic resources are significantly more likely to experience intimate partner violence than women with comparatively greater economic resources. This contributes to understanding how the concept of economic inequality is associated with intimate partner violence against women. It also enables the conclusion to be drawn that economic inequality is associated with increased likelihood of intimate partner violence for women, although the complexities of this are many and varied.

1.1 Thesis structure

Previous research posits a lack of economic resources, particularly women's income, to be associated with increased risk of intimate partner violence for women. In reviewing the current literature (chapter 2), the complexities found within these relationships are drawn out. For example, there is debate over whether it is women's current employment status or their occupational status over a longer period which is more significant in association with intimate partner violence. There is also debate over whether it is the level of income which women have access to, no matter the source, or whether it is the source of income, which is more important in association with intimate partner violence, particularly in relation to the severity of violence women experience.

Other economic resources have also been explored, including household income and housing tenure status, but to a lesser extent. Neighbourhood economic resources are also being explored in association with intimate partner violence. This research agenda, predominantly in the United States, builds on the evidence that a lack of economic resources is significantly linked to an increased likelihood of intimate partner violence, and that impoverished women are not only more likely to experience intimate partner violence, but may be subject to violence of a greater severity. Impoverished women are also more likely to be found in poor neighbourhoods, and poor neighbourhoods are found to have higher rates of crime and social disorder, including violence. These studies then explore the links between residing in an impoverished neighbourhood and intimate partner violence against women. Initial results suggest that the neighbourhood effect is significant and that

the rates of intimate partner violence found in impoverished neighbourhoods are substantially higher than those found across the national population (of U.S. women).

What emerges from the *Literature Review* (chapter 2), however, is that a limited number of economic resources are explored in association with intimate partner violence at any one time, and that there is limited evidence of the *relative* importance of these economic resources in association with intimate partner violence. The work in this thesis seeks to extend this by deploying the concept of 'economic inequality', which enables both the exploration of a wider range of economic resources within one analysis, and the exploration of their relative importance to intimate partner violence against women.

Economic inequality is conceptualised here as the disparity in the distribution of and access to economic resources within a population. In this thesis economic resources are represented by nine individual factors, which have been grouped together by the unit of analysis:

Individual:

- Women's current employment status
- Women's earned income
- Women's socio-economic class

Household:

- Household income
- Housing tenure type

- Household poverty status

Neighbourhood:

- Level of neighbourhood income deprivation
- Level of neighbourhood employment deprivation
- Specialist violence against women service provision

Some of these factors are already well researched, including women's employment status and earned income; others far less so, in particular household poverty status and specialist violence against women service provision. Examining this range of factors representing economic resources individually and in conjunction with one another for the national working-age population of women in England and Wales has not been done before.

The *Literature Review* in chapter 2 also highlights another set of literature, directly related to, but focusing on an alternative aspect of, the association between economic inequality and intimate partner violence against women. This is the role economic resources play in women's ability to sustainably exit violent relationships, i.e. to both exit and to not have to return through economic necessity. A comprehensive evidence base on the importance of a sufficiency of economic resources, particularly income, has been established. However, what is less evidenced is the impact exiting has on women's economic inequality, i.e. does / how does exiting a violent relationship affect women's economic inequality. This thesis seeks to explore this question through focused analysis which disaggregates and

then explores two groups of women, one which remains in currently violent relationships and one which has exited recently violent relationships.

A third set of literature is also identified in chapter 2. This specifically explores intra-household economic inequality between women and their male partners in association with intimate partner violence. Contradictory evidence from different studies has been found. There are a number of theories of how economic inequality is related to intimate partner violence within households which are mutually contradictory. For example theories of economic stress predict that households with an adequate level of economic resources to meet their needs will be less violent than those with inadequate levels of economic resources to meet their needs, no matter who in the household contributes those economic resources. Theories of masculinity, on the other hand, predict that where women in the household have an elevated economic status compared to their male partner, and in particular where a man's economic status is low, for example through unemployment, that rates of intimate partner violence will be higher than in more egalitarian households.

The end of chapter 2 sets the overarching thesis question: *how is economic inequality associated with intimate partner violence against women* within the research frame for the thesis. It additionally explicates a number of research questions designed to identify and enable the examination of the key parts of this thesis question in relation to the issues raised in the *Literature Review*. It sets these within the research agenda for this thesis. The research agenda identifies the geographic location for the research as the UK and sets forth a national population criterion for analysis.

Having set the thesis and research questions and research agenda, the thesis moves on to the process of operationalising these; this work is done in chapter 3 (*Measurement*) and chapter 4 (*Methodology*). Analysis is conducted on a representative sample of 12,920 working-age women in the British Crime Survey 2008/09. The critical analysis of the process to select a secondary data source and measure of intimate partner violence which can operationalise the thesis question is complex, but is an essential part of the development of the thesis.

Chapter 3 considers the measurement of intimate partner violence. One key limitation identified from reviewing the literature (chapter 2) is the lack of a commonly agreed or standardised measure of intimate partner violence for research. Previous research has utilised varying measures, which has impacted on the scope of the research questions which can be addressed, on the findings and conclusions drawn, and on their comparability.

Identifying, accessing and utilising the most appropriate sources of data and their measures of intimate partner violence is a time-consuming and complex process: it is, nevertheless, one of paramount importance. Not only does it ensure that the most appropriate measure (of those available) is utilised, it also enables the research findings to be robustly contextualised within the strengths and limitations of that measure. It also exposes critical gaps which prevent research agendas from being able to further develop the field at the depth and specificity required.

The key focus of the chapter is on the identification of the best available measure of 'intimate partner violence' which can be utilised in the substantive analysis. This thesis does not attempt to develop new measures of intimate partner violence, but

rather identifies the most appropriate measure available, in conjunction with women's economic and demographic characteristics, which can address the thesis and research questions. The first stage of this is achieved by identifying possible data sources on which the analysis could be conducted, considering the extent to which each can address the research questions posited. Two potential sources of data are identified in chapter 3: official records and survey data.

Reported incidents of domestic violence¹ to the police are identified as a possible source of national level data. Since 2005 police forces in England and Wales have been encouraged to flag reported incidents and recorded crimes which meet the ACPO (Association of Chief Police Officers) definition of 'domestic violence' with a domestic violence qualifier. The chapter details a pilot project run to assess the accessibility and quality of domestic violence qualifier flagged data with Lancashire Constabulary. The success of this pilot project resulted in a Freedom of Information Act request being sent to all police forces in England and Wales requesting their domestic violence qualifier flagged reported incident data for a five year period. The results of this national level project were, however, far less successful than those from the pilot project. The quality of the data on the national level was found to be of insufficient quality to utilise for the analysis in this project.

The alternative data source, surveys, is the focus for the remainder of the chapter. Specialist / community surveys and large-scale social surveys are compared. For the purposes of the research agenda set forth for this thesis, large-scale social surveys are identified as the most appropriate for the analysis of the thesis question. Within

¹ Domestic violence includes intimate partner violence, but also includes violence perpetrated by other household members. There is no system, such as flagging, available for specifically identifying intimate partner violence.

the geographical context of the UK, there is only one large-scale data source which both includes measures of intimate partner violence against women, which can be linked to women's socio-economic position, and from which findings can be extrapolated to the level of a national population: the British Crime Survey (BCS) (renamed Crime Survey for England and Wales in 2012). However, the BCS only covers England and Wales: this is a geographical limitation in the thesis. There is no one data source available which covers the UK and includes measures of intimate partner violence which can be linked with women's socio-economic positions.

The chapter then explores a number of alternative sweeps of the BCS in order to identify that which enables the thesis, and research questions to be examined to the fullest possible extent: the BCS 2008/09 is identified as the sweep best able to do this for a number of reasons. For example, it enables the identification of women in currently violent relationships and those who have exited recently violent relationships, and it enables women's earned income to be disaggregated from household income.

Finally, the chapter explores the measures of intimate partner violence available within the BCS 2008/09, rejecting the lifetime prevalence measure and the recent incident measure in favour of a recent prevalence measure as being the most robust and appropriate for use in analysis in this thesis. The measure encompasses physical violence, rape and sexual abuse, psychological abuse, threats and stalking behaviours. Thus the term 'violence' as deployed in this thesis also encompasses all these elements and is not restricted to physical violence. In doing so the chapter addresses the contentious debates around the measurement of intimate partner

violence, its continued inability to account for the coercive, on-going nature of such violence and the criticisms made of the Conflict Tactic Scale, modified versions of which are deployed in most large-scale surveys of intimate partner violence.

The chapter ends by raising a number of limitations which impact on the ability of the BCS 2008/09, and the prevalence measure of intimate partner violence selected from it, to fully address the thesis and research questions set forth for analysis.

Chapter 4 (*Methodology*) picks up where chapter 3 (*Measurement*) ends. Where chapter 3 concentrated on the operationalisation of the research agenda through the identification of the most appropriate source of data and the identification of the most appropriate measure of intimate partner violence within that source, chapter 4 focuses on the operationalisation of the BCS 2008/09 in detail. The chapter charts the process of accessing the BCS 2008/09. It details the construction of the BCS, and it traces the construction of the sample of 12,920 working-age female respondents on which the analysis in this thesis is based. The BCS 2008/09 utilises a nationally representative sample design, therefore the findings from the analysis can be extrapolated to the national working-age population of women in England and Wales, an estimated 12.5 million women.

The analysis sample contains 763 female respondents reporting intimate partner violence in the past 12 months; of these, 554 report having exited their most recently violent relationship at point of survey whilst 132 remain in currently violent relationships at point of survey. However, it is at this stage that a significant limitation in the analysis of the thesis question is identified.

In order to interrogate intra-household economic inequality in association with intimate partner violence a number of criteria have to be fulfilled to construct an analysis sample which matches appropriate female respondents to male partners. Female respondents must have experienced intimate partner violence once or more in the past 12 months and remain in that violent relationship at point of survey, they must be living in the same household as their violent partner, and their partner must be the designated Household Reference Person². There are only ten such partnerships identifiable in the BCS 2008/09. This is an inadequate number on which to base quantitative analysis. This means that the interconnections between women's economic inequality and intimate partner violence within the household cannot be examined as part of the thesis question: *how is economic inequality associated with intimate partner violence against women*. Being unable to compare the inter- and intra-household effects of economic inequality and intimate partner violence is a significant limit on the extent to which the thesis question can be fully examined.

The chapter also sets out the details of how data is 'missing' in the BCS 2008/09 and how this is dealt with for analysis purposes. This includes missing populations of women through the survey sampling frame and through the domestic violence, sexual assault and stalking module sampling frame, and missing responses to individual questions. The technical methods for dealing with some of this missingness are detailed, including differential non-response techniques and complete case analysis. However, it is also argued that the impact of missingness

² The construction of the BCS 2008/09 enables the collection of data on the economic resources of a respondent and (where different to the respondent) the Household Reference Person (HRP).

cannot always be accounted for technically and that there is an impact from missing data on the ability of the BCS 2008/09 to fully support an examination of the thesis question.

The chapter addresses the effects of the BCS 2008/09 complex sampling design on the estimation of error variance in logistic regression models, and explains the use of three different methods deployed in the analysis to ensure the informative nature of the sampling design is accounted for. This is achieved through the use of the Home Office complex sample design plan for the BCS 2008/09, the use of the design-based method, and through the use of the design effect method.

The operationalisation of 'economic inequality' through the use of nine factors representing economic resources is also laid out in chapter 4. Their construction and the distribution of the working-age population of women in England and Wales within each of these factors is examined. Whilst most factors are available within the BCS 2008/09 itself, two are constructed and added to the dataset for the purposes of analysis in this thesis: household poverty status; and specialist violence against women service provision. The construction of these factors is detailed.

The analysis methods utilised in the thesis are described and the technical specifications of each method are explicated: frequency tables; tests of independence; and single- and multi-level binary logistic regression.

This chapter also identifies a number of limitations in the BCS 2008/09 which impact on the full exploration of the thesis question. The chapter ends by setting out a series of testable hypotheses, linked to the research questions, which direct the empirical analysis. The hypotheses are designed to ensure that the intricacies of the research

questions are explored to the fullest extent possible. In order to achieve this, it is necessary to break a number of research questions down into their constituent parts, hence some research questions have more than one hypothesis linked to them.

Chapter 5 (*Findings*) presents the empirical research findings, and chapter 6 (*Discussion*) relates these empirical findings back to the research questions set out at the end of chapter 2. These chapters explore the associations between: current employment status and occupational status; earned income; household economic resources; and neighbourhood economic resources, and intimate partner violence for the national working-age population of women in England and Wales, both individually and in conjunction with one another. In particular the analysis seeks to question whether women's earned income is the most important factor in association with intimate partner violence for this population. The chapters also present empirical findings for, and discussion of, the associations between remaining in violent relationships and economic inequality, and exiting recently violent relationships and economic inequality. Here the key link between economic inequality, intimate partner violence against women and household structure is made visible and explored in depth.

Chapter 7 concludes the thesis. A number of conclusions are drawn from the empirical research findings and the discussions which link these empirical findings to the research questions and back to the work of previous studies. In particular the importance of utilising both an individual and a household unit of analysis is considered, as are specific conclusions relating to women's earned income and employment in association with intimate partner violence. Overall, however, the

major conclusion as to how economic inequality is associated with intimate partner violence is set out as being that economic inequality is associated with increased likelihood of intimate partner violence: this is explored in detail.

The thesis now turns to chapter 2: the *Literature Review*.

Chapter 2: The Literature Review. This chapter provides a comprehensive overview of the existing literature on intimate partner violence (IPV) and its relationship to economic inequality. It begins by defining IPV and discussing its prevalence and consequences. The chapter then explores the theoretical frameworks that link economic inequality to IPV, including the feminist theory, the social structural theory, and the individual-level theory.

The chapter also reviews the empirical evidence on the relationship between economic inequality and IPV. It discusses the findings of cross-sectional studies, longitudinal studies, and meta-analyses. The chapter concludes by summarizing the key findings and identifying areas for future research. The chapter is organized into several sections, each focusing on a different aspect of the literature review. The first section discusses the prevalence and consequences of IPV. The second section explores the theoretical frameworks that link economic inequality to IPV. The third section reviews the empirical evidence on the relationship between economic inequality and IPV. The fourth section discusses the findings of cross-sectional studies, longitudinal studies, and meta-analyses. The fifth section concludes by summarizing the key findings and identifying areas for future research.

Chapter 3: The Literature Review. This chapter provides a comprehensive overview of the existing literature on intimate partner violence (IPV) and its relationship to economic inequality. It begins by defining IPV and discussing its prevalence and consequences. The chapter then explores the theoretical frameworks that link economic inequality to IPV, including the feminist theory, the social structural theory, and the individual-level theory. The chapter also reviews the empirical evidence on the relationship between economic inequality and IPV. It discusses the findings of cross-sectional studies, longitudinal studies, and meta-analyses. The chapter concludes by summarizing the key findings and identifying areas for future research.

Chapter 4: The Literature Review. This chapter provides a comprehensive overview of the existing literature on intimate partner violence (IPV) and its relationship to economic inequality. It begins by defining IPV and discussing its prevalence and consequences. The chapter then explores the theoretical frameworks that link economic inequality to IPV, including the feminist theory, the social structural theory, and the individual-level theory.

Chapter 5: The Literature Review. This chapter provides a comprehensive overview of the existing literature on intimate partner violence (IPV) and its relationship to economic inequality. It begins by defining IPV and discussing its prevalence and consequences. The chapter then explores the theoretical frameworks that link economic inequality to IPV, including the feminist theory, the social structural theory, and the individual-level theory. The chapter also reviews the empirical evidence on the relationship between economic inequality and IPV. It discusses the findings of cross-sectional studies, longitudinal studies, and meta-analyses. The chapter concludes by summarizing the key findings and identifying areas for future research.

Chapter 2: Literature Review

2.1 Introduction

This thesis is concerned with economic inequality, intimate partner violence and the associations between them. This chapter reviews these three areas. The first (presented in the following section: 2.2) considers the position of intimate partner violence within the terminology of violence against women. A number of competing definitions are examined before the definition utilised in this thesis is set out. The thesis utilises a broad definition, with an emphasis on gender inequality.

The chapter then moves on to explore the inequalities literature in section 2.3. In this section, the concept of economic inequality is explored and its operationalisation in this thesis through the use of economic resources is developed. The way in which economic inequalities operate between women and men and between different groups of women is examined.

Sections 2.4, 2.5 and 2.6 explore a range of studies which specifically focus on economic inequality in association with intimate partner violence. Studies are considered through three links identified between economic inequality and intimate partner violence.

The first link is that between economic inequality and the risk of intimate partner violence for women. The literature in this section (2.4) considers a number of economic resources in association with intimate partner violence. The major theoretical frame for these studies considers women's relative lack of economic

resources - compared to other women within a pre-defined population – to be associated with a greater risk of intimate partner violence.

The second link between economic inequality and intimate partner violence is connected to, but at the same time, distinct from that above. The studies considered in this section (2.5) focus specifically on the links between women's economic resources and exiting violent relationships sustainably. These studies consider whether economic resources are instrumental in the capacity of women to exit. A number also consider whether, after exiting a violent relationship, economic resources, or more specifically a lack of economic resources, is significant in women returning to a violent relationship.

Finally, the third link considers the relative economic positions of women and male partners in association with intimate partner violence. This link is somewhat different from the other two. Analysis here focuses on intimate partnerships within households, whereas the other two links focus on the comparative economic positions of women across pre-defined populations, such as the nation, or a neighbourhood. A common theoretical framing is discernible across the other two links; relatively fewer economic resources are related to increased risk of intimate partner violence and/or decreased capacity to exit sustainably. However, where intra-household economic inequality is the focus, a number of contradictory theoretical frames are found, such as economic stress and economic 'backlash'. The first posits that increased economic resources within a household decreases economic stress and thus the risk of violence, which is conceived of as a reaction to economic stress. Under this theory any increase in economic resources into a

household, no matter the source, will reduce stress and thus the risk of violence. By comparison, theories of economic 'backlash' posit that the increased economic independence of women creates a 'backlash' from men who perceive their superior economic position to be under threat; this backlash can be violent (section 2.6).

Common to the construction of all three sections are two decisions taken which determine the scope of this literature review. The first is a limit on the scope of the literature reviewed by economic system. Women's relationships with economic resources within any population are varied and complex, but there are commonalities found within similar economic systems. However, across substantively different economic systems the relationship between women and economic resources can be significantly different. This impacts on the process of comparing findings in order to develop the research agenda for this thesis. For example, Agarwal and Panda (Agarwal and Panda, 2007; Panda and Agarwal, 2005) and Gupta (2006) have presented convincing evidence for a link between women's property ownership and marital violence in India. Their findings, however, are also related to the inheritance traditions of the areas in which the research was conducted and in the relationship between gender and property ownership in Indian society. This system is not comparable with, for example, the UK. Therefore, whilst the idea of housing as an important factor can be taken forward, the specific associations are not replicable in other economic systems which do not share, for example, the same inheritance traditions. The literature review is thus loosely confined to OECD countries (the Organisation for Economic Cooperation and Development).

The second decision on the scope of the literature review is related to the data source on which studies are premised. Although the analysis in this thesis uses a nationally representative social survey (see chapter 4: *Measurement*) the literature review is not confined to studies based on nationally representative surveys. Previous work based on both qualitative methods and small-scale/specialist quantitative surveys is essential to fully understanding the associations between economic inequality and intimate partner violence. Thus the review encompasses studies utilising a myriad of data sources and methodological approaches. The results from nationally representative surveys are highlighted as part of the review, in particular where the findings differ from those made utilising alternative approaches, in order to contextualise the findings from the analysis in this thesis.

At the end of sections 2.4, 2.5 and 2.6 the current 'state of the art' in that field is extracted and from that a number of questions, which either remain to be answered or are pertinent to further disentangling the complexities found, are raised. At the end of the chapter, these questions are used to shape the research agenda, and to develop a set of research questions which identify and focus on key elements of the overarching question: *how is economic inequality associated with intimate partner violence against women*.

In addition to setting out the research agenda and research questions at the end of this chapter, the key economic resources utilised in the literature reviewed are also used to identify a number of factors for use in the analysis in this thesis. These factors are used to represent economic resources at various levels, i.e. the individual, household and neighbourhood. These are also presented at the end of this chapter.

The thesis then moves forward to detail the process of operationalising these for empirical analysis purposes. Chapter 3 (*Measurement*) focuses on identifying the most appropriate source of data and measure of intimate partner violence which can enable the research questions to be explored to the fullest possible extent. It is at the end of chapter 3 that the British Crime Survey 2008/09 is identified as the most appropriate data source for use in this thesis. Chapter 4 (*Methodology*) picks up where chapter 3 ends and examines the operationalisation of the BCS 2008/09 in detail, including the construction of the analysis sample and how issues of missing data and the impact of the BCS 2008/09 complex sampling design will be dealt with. Chapter 4 also details the analysis methods to be used. Toward the end of both chapters 3 and 4, a small number of limitations are highlighted with the data source, intimate partner violence measure and construction of the economic resource factors. How these impact on the research in this thesis is explicated here. Chapter 4 ends by setting forth a series of hypotheses, based on the research questions, which direct the empirical analysis.

Chapter 5 then presents the empirical findings from the analysis, whilst chapter 6 focuses on discussing how the empirical findings address the research questions set forth in this thesis. The final chapter (chapter 7) draws from this discussion a number of conclusions which detail *how economic inequality is associated with intimate partner violence against women*.

2.2 Violence against women and intimate partner violence against women

The focus of this thesis is on intimate partner violence against women. Intimate partner violence is one expression of violence against women. The decision to focus on intimate partner violence in this thesis is shaped by two primary considerations, one theoretical and one methodological.

The first, theoretical consideration is drawn from reviewing the current literature in the body of this chapter. In the course of this review three links between economic inequality and intimate partner violence are found. The first two of these consider the relational association between economic inequality between women and intimate partner violence. The third considers the relational association between economic inequality between women and men *within households* and intimate partner violence. In focusing on intimate relationships as the unit of analysis it is possible to set forth a research agenda which considers both economic inequality between women and men within intimate partnerships, and economic inequality across women within a national context within the same study, rather than examining these as separate links. This further enables the question to be raised: does economic inequality and intimate partner violence operate in the same way within intimate relationships as it does within a national context? For example, if women with fewer economic resources are found to be at greater risk of intimate partner violence compared to women with comparatively greater economic resources, is it also the case that women with comparatively fewer economic resources than their intimate partner are similarly found to be at greater risk of

intimate partner violence? This was the key theoretical consideration in setting the focus for the thesis as intimate partner violence.

The second consideration is a methodological one. The research agenda (set out at the end of this chapter) calls for a national level analysis within a UK context. There are no data sources which meet these requirements and contain data on a comprehensive range of the expressions of violence against women encompassed by this terminology (see below). Many sources contain data on intimate partner, and/or domestic violence (intimate partner and household members), sexual violence, and increasingly stalking, but not also on forced marriage or female genital mutilation, etc. Further, the focus on intimate partner violence enables a sufficient depth of analysis to be achieved within the limited timeframe of the Ph.D. In focusing on intimate partner violence in this thesis, a number of the key conclusions drawn can be compared to those found for other forms of violence against women and economic inequality. For example, there are a number of studies which have examined rape and sexual violence in association with economic inequality, including the associations between rape and sexual violence with: employment (Kelly, 2007; Walby and Allen, 2004); income (Walby and Allen, 2004); and housing (Estes and Weiner, 2001; Kushel, Evans, Perry, Robertson and Moss, 2003). The link between 'survival sex' (the exchange of sex for essential goods and services such as food, shelter and health care) and economic inequality has also been explored (MADRE, 2012; Jewkes, Sen and Garcia-Moreno, 2002; Greco and Dawgert, 2007; Ellis, Atkeson and Calhoun, 2001).

Moving forward, in joining up the research from this thesis with that premised on alternative expressions of violence against women and economic inequality, a further question can be raised: that of whether the associations found between economic inequality and different expressions of violence against women are consistent, or whether certain expressions of violence against women have very different relationships with economic inequality.

In the remainder of this section, the definition of violence against women is explored and the positioning of intimate partner violence within it is explicated. In so doing, the definition of intimate partner violence used in this thesis is also set out.

Violence against women

The term 'violence against women' is well recognised, yet naming this domain is a complex and contested task. Howe, for example, argues it is '...one of the most difficult to name social problems of late twentieth century Western societies' (Howe, 1998: 30). It is, however, one of vital importance. Dekeseredy and Schwartz (2011: 3) state that the definition of violence is one of the most important decisions to be made and Walby (2005) argues that an important way of moving forward in the reduction and eradication of violence against women is to mainstream it by working toward greater similarity in naming violence against women (Walby, 2005).

There are a number of competing definitions of violence against women; in this thesis a broad definition is utilised. Whilst the definition is broad, the emphasis is on gender inequality. The definition of violence against women set forth in the United Nations *Declaration on the Elimination of Violence Against Women* (UN, 1993) embodies this approach, defining violence against women as '...any act of gender-

based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women.’ The scope of the Declaration is broad, but its emphasis is on gender inequality. This is also embodied in the definition of violence against women set out in the United Nations *Convention on the Elimination of Discrimination Against Women* (UN, 1979) which defines violence against women as that which ‘targets a woman because she is a woman, or disproportionately affects women’. In setting out the definition of violence against women this also applies to intimate partner violence, the focus of this thesis, as one expression encompassed by the violence against women terminology.

As Watts and Zimmerman (2002) argue, this focus on women does not deny that men are subject to violence: indeed war, genocide and ethnic cleansing, and street and gang violence are significant causes of violent victimisation for men. However violence against men often differs in its aetiology (Watts and Zimmerman, 2002: 1232).

Whilst the UN sets forth a particular definition of violence against women which has been widely taken up in policy and practice³, it is not the only one. The defining of ‘violence against women’ is both complex and contested. In particular, the term ‘violence’ is contested, especially the question of whether it can/should extend beyond the physical. For example, Walby (2012: 96) points out that violence has both been ‘...seen as reducible to or contained within other categories, especially as an instrument of other forms of power...’, and ‘...as a distinctive phenomenon, a non-

³ For example it is used: in the UK Government’s violence against women and girls strategy (HM Government 2010), by the World Health Organisation (<http://www.who.int/mediacentre/factsheets/fs239/en/>); by the European Union (http://europa.eu/legislation_summaries/human_rights/human_rights_in_third_countries/dh0003_en.htm); by the End Violence Against Women Coalition (www.endviolenceagainstwomen.org.uk/);

reducible form of power, practices and set of social institutions with its own rhythm, dynamics and practices'. Furthermore, Hatty (2000) argues that physical acts are often viewed as the paradigmatic case of violence, both in law and in popular discourse. In the Western tradition of liberal legalism, violence is understood to be a corporeal experience involving the collision of bodies, the extension of touch into spaces and places where it is not welcome. Thus, violence as defined here, involves the crossing of boundaries relating to personal space and in particular, transgresses bodily boundaries through the use of hands, feet, fists or weapons.

Walby (2009) constructs 'violent action' as the understanding of enabled bodies and technologies, as well as human subjects and institutions. She argues that the ability to exercise violence on another usually depends on the possession of a capable body formally or informally trained which can be deployed as a weapon. Thus, in this definition, bodies need to be included in the violence frame, along with traditional humanist conceptions such as agency. For others, such as Jayne Mooney (2000), the emphasis is on violence as a social construction and as such its definition will therefore vary according to the values of the individuals doing the defining. Similarly, Dobash and Dobash (1998) have argued that 'context' is central to the project of defining violence, as it is deemed to be a cultural product enacted by individuals located in different cultural contexts.

The debate over the definition of 'violence' in 'violence against women' is a long one. Twenty years ago, Dobash, Dobash, Wilson and Daly (1992) and Kelly (1989) argued that 'violence' against women is a continuum which cannot be understood as a series of physical acts. More recent work, such as that of Stark (2007) and Johnson (2008)

has located physical acts of violence within an overarching understanding of violence against women as coercive control. Data from the 'Women's Experience of Battering' (WEB) survey (Smith, Smith and Earp, 1999) supports this, finding physical violence to be outcrops from an underlying condition of continuous abuse and psychological vulnerability that occasionally breaks through the physical-assault threshold. All these approaches call for a broad understanding of violence against women that goes beyond the physical.

Jacobs, Jacobson and Marchbank (2000), in calling for a broad-based understanding of, specifically *male* violence against women, argue for a similar broadening of the concept of violence. They argue that if violence is conceived of as a gendered phenomenon within the context of patriarchal social relations then all such violence should be situated analytically within a 'sexual violence' approach, even where no overt sexual act is involved. In this sense, male sexual violence against women is that which takes place in the home or workplace, on the street corner, involves racism, homophobia or xenophobia and other prejudices, taking place on international and global scales, including trafficking and women's experiences of war. To restrict the definition of violence solely to physical acts, they argue, fails to adequately address the question of who benefits.

This debate over definition matters. What is included/excluded by definition affects every aspect of research, policy and ultimately the lives of women and girls (DeKeseredy and Schwartz, 2011). Advocates of narrow definitions argue that to include emotional and economic harms can muddy the waters (Gelles and Cornell, 1985) or that including all forms of harm trivialises those seriously harmful acts (Fox,

1993). On the other hand, others argue for wider definitions citing evidence from women that the harms from sexual violence and psychological abuse can be at least as severe and/or long-lasting as those from physical violence (DeKeseredy, 2000; Follingstad, Rutledge, Berg, Hause and Polek, 1990) and that violence against women can only be understood as a continuum of harmful behaviours, including, but not restricted to physical violence (Stanko, 1990). Whilst the debate on defining *violence* against women continues, Basile and Black (2011) argue that wider definitions which encompass sexual violence and psychological abuse, as well as physical violence, are increasingly being used in practice.

Having considered the debates over definition and meaning, the definition utilised in this thesis is a broad one, inclusive of sexual violence, psychological abuse and physical violence. The arguments of researchers such as Dobash and Dobash, Kelly, Stanko, Stark and DeKeseredy for a continuum of violence and the pervasive power of coercive control, with or without resort to physical violence, are convincing. Whilst the ability to separate forms of power for comparative analysis is useful, ultimately Kelly's argument of the creation of hierarchies of abuse based on seriousness through the use of narrow definitions is still pertinent (Kelly, 1987). To separate out, and focus on, physical violence whilst there remains a popular and political conception of a hierarchy of seriousness risks rendering some forms of violence, and indeed some women, invisible despite the evidenced harm which non-physical violence incurs on women.

The terminology of violence against women encompasses a number of different expressions or forms. This range depends to some extent on the definition being

deployed. At its widest, the terminology encompasses: intimate partner physical, sexual and psychological violence; rape and sexual assault by non-intimate partners; domestic violence; female genital mutilation; honour killings; acid throwing; dowry deaths; trafficking; forced prostitution; exploitation of labour and debt bondage of women and girls; physical and sexual violence against prostitutes; sex selective abortion; female infanticide; rape as a weapon of war; the deliberate neglect of female children; and the violation of the rights of women in situations of armed conflict, including systematic rape, sexual slavery, forced pregnancy, forced sterilization, forced abortion and coercive or forced use of contraceptives (see for example Watts and Zimmerman, 2002; UN 1995). The range of potential perpetrators is as extensive, including: intimate partners; family members; neighbours; and men in positions of power and influence, for example police officers, soldiers, employers, and teachers.

Although the forms of violence against women may appear to be quite different to one another, they share a number of common characteristics, over and above the targeting of women because they are women. Most forms of violence against women, and in particular the harms sustained, are ongoing over substantial periods of time. Violence against women is not characterised by unique incidents. Additionally, women often know the perpetrator, including residing in the same household with them. Kelly (2000) asserts that the finding that women are most likely to be assaulted by a man known to them – especially sexual partners – is one of the most compelling of three decades of research on sexual violence against women. Schwartz (2005) in his reflections on the past and future of violence against women agrees with Kelly's assertion.

Defining violence against women, and therefore also the expressions which it encompasses, is an essential part of theorising the causes of such gendered violence. Explanations of violence against women have developed within a wide variety of disciplines including: sociology; psychology; criminology; public health and social work (Jasinski, 2001). This has led to a number of competing theories being developed.

For example, psycho-cultural theories of violence locate the cause at the level of the individual actor, concentrating on the effects of socialization and on beliefs, cognitions and personal characteristics of victim/survivors and perpetrators. Social learning theory is probably the best known of these (Bandura, 1977 and 1986; Krohn, 1999). It maintains that violence is learnt by modelling behaviours of others within a social context, where the consequences are viewed as positive. In particular, this theory predicts that violence witnessed in childhood provides a direct opportunity to learn to use violence and thus increases the chances of that child growing up to use violence later in life. Social learning theory has strong links with theories on intergenerational cycles of violence. These predict that boys who witness their father being violent toward their mother will grow up to be violent toward their own partner (Levi, Maguire and Brockman, 2007). Cross-cultural studies also theorise violence at the household level. Here it is male authority within households that is theorised to be linked with violence against women. For example Kishor and Johnson, (2004) argue that male authority over decision-making within the household is one of the strongest indicators of violence against women in societies.

Family violence theories (also known as catharsis theories, hydraulic models and/or ventilation theories) also locate the cause of violence against women (wives) at the level of the family. These theories posit that all human beings have built into their nature a greater or lesser tendency toward aggression which cannot be bottled up. These theories predict that if we attempt to repress this deep biologically-based motivation, it will only result in a more destructive expression at some later point in time. Thus 'the family' itself is viewed as a violence-prone institution. Violence within families then, including, but not restricted to violence against wives, is conceived of as the inadequate or unsatisfactory mode of managing and resolving conflicts inherent within the family. Family violence theorists, such as Straus and Gelles, argue that wives are victims of violence partly because of their subordinate status within the sexist structure of the family, but that this is just one factor. Empirical analysis of U.S. population data testing these theories find violence in the family correlated with younger age-groups, low socio-economic status, and ethnicity (Straus, 1999c; Gelles, 1999).

Cultural spill-over theories, (Baron, Straus and Jaffee, 2006; Heise, 1998; and Levison, 1989) by contrast specifically link societal violence to violence within the home. These posit that societies which endorse the use of violence to solve inter-personal problems and to achieve goals, for example in public order or crime control, will have concomitantly higher levels of violence in the family. The spill-over then is from widespread use of violence in the public sphere to inside the home (Johnson, Ollus & Nevala, 2008).

From the 1990s there was increasing interest in the idea of 'hegemonic masculinities' which focus on men's relationship to violence. The core concept in these theories is that gender is socially constructed, the dominant gender structure is male hegemony, and this is constantly reproduced, negotiated and 'played out' by men 'doing gender' (Butler, 1999). It is thus possible to theorise that different masculinities can be created and learnt over time and in different spaces (see for example, Messerschmidt, 1993; Connell, 1995).

Feminist theories of violence against women focus on the broader social forces of patriarchy and gender relations. Violence against women is argued to result from gender inequality (Bograd, 1988; Hester, Kelly and Radford, 1996). Gender inequality is understood to be both ideological (beliefs, norms and values about the status and role of women in a society) and structural (women's access to, and position within, social institutions). Where men dominate political, legal, economic and social institutions (including the family), the policies and practices of these institutions are likely to embody, legitimate and reproduce male domination over women (Yodanis, 2004). In male dominated institutions, violence is one means which can be used to keep women out and/or subordinated. Given the male-defined principles of such institutions, violence against women is unlikely to be punished, and may even be condoned (Walby, 1990). Schwartz (2005) argues that understanding violence against women as gendered within the context of gender inequality is the most important development of the past 20 years.

This thesis is premised on feminist understandings of inequality and violence against women as mutually reinforcing social structures which serve to subordinate women.

Intimate partner violence against women

Intimate partner violence is argued to be one of the most common forms of violence against women (Watts and Zimmerman, 2002; Kelly 2005). Intimate partner violence, in the context of this thesis, is defined as encompassing physical and sexual acts of violence within a context of psychological and emotionally abusive behaviours, including threats of physical or sexual violence, coercive control, and economic isolation (Johnson, 2008; Stark, 2007). Intimate partner violence is also variously termed marital violence, spousal violence, and often, domestic violence, although domestic violence can also include other household and/or family members as potential perpetrators within its definition.

There is a further specific definitional issue to consider with intimate partner violence: who is included as an 'intimate partner'. Early research focused on spouses, but definitions now typically include cohabiting couples, boyfriends, and increasingly also dating partners. This extension of the definition reflects the similarities found in the dynamics of violence in all intimate relationships (Jaquier, Johnson and Fisher, 2011: 28).

In addition, early studies focused on intact partnerships, but Stark (2007: 90) argues that every study which has looked at the status of violent relationships finds that married women are at lower risk compared to separated, divorced and single women. For example, Brownridge (2006) found a 30-fold increase in the risk of non-lethal intimate partner violence for separated women compared to married women; Mooney (2000) found 36% of women reporting domestic violence in the past 12 months were either not living with or no longer in a relationship with their violent

partner; and Tjaden and Thoennes (1998) found similar estimates in the United States from the National Violence Against Women Survey. The definition of intimate partner violence now typically reflects this increased risk from ex-partners and/or non-cohabiting partners and includes them within the definition (see for example the U.S. Centre for Disease Control definition: Saltzman and Fanslow, 1999).

In this thesis, therefore, intimate partners are defined as: any current or ex- spouse, *de facto* spouse, boyfriend or dating partner, including both cohabiting and non-cohabiting couples.

2.3 Economic Inequality

Economic inequality, as a theoretical concept, can be conceived of as the disparity in the distribution of, and access to, economic resources within a population. Economic resources include both income and other economic assets, such as property, investments and savings. Economic resources, such as women's employment and women's earned income, household income and housing tenure, and level of neighbourhood deprivation, are used to operationalise the concept of 'economic inequality' in this thesis. In doing so, a wide range of economic resources can be explored, both individually and in conjunction with one another. This reveals the relative importance of different economic resources for different groups of women in association with intimate partner violence.

The unit of analysis also matters. Traditionally, the unit of analysis for economic inequality within countries is the household (Walby, 2009; Walby, Armstrong and Humphreys, 2008). This however risks obscuring women's unique position within households. For example, In the UK, in 2008, an estimated 73% of household income was from earnings, whilst 9% came from benefits and tax credits (Carrera and Beaumont, 2010). However, when the relative contributions of different sources are examined at the individual level, instead of the household level, a distinct difference by gender emerges. Eighty-seven percent of men's income comes from earnings compared to 72% of women's, whereas 18% of women's income comes from benefits compared to just 7% of men's (TUC, 2008). The household as the sole unit of analysis thus fails to capture the importance of different sources of income by gender (Moosa with Woodroffe, 2009). In addition, the use of household as a unit of

analysis is premised on the long held assumption that resources are pooled and distributed equitably between all household members (see for example Becker, 1991). This is rigorously disputed by researchers examining women's access to household resources (Ferber and Nelson, 2003; England, 2003). For example, Pantazis & Ruspini (2006) argue that resource distribution within the home disadvantages women. From their analysis of the Poverty and Social Exclusion Survey (UK-based), they found that for every pound brought into the household economy by a mother, more is spent on the family than for every pound brought in by the father. Women were also more likely to go without than men when resources were tight. Similarly, Goode, Callender and Lister's (1998) qualitative study on money management and control over money in the households of 31 couples in the UK on benefits, with at least one young child in the household, found that women were more likely to spend their income directly on the household, especially on children, compared to men. The study also revealed that most 'households' considered it the woman's responsibility to meet children's needs, even when that meant going without herself. On the other hand, most men in the study perceived, at least a proportion, of any income they brought into the household (whether earned or benefit payments) to be for 'personal use'. The study concludes that whereas men prioritised personal spending, many women have no access to personal spending money.

Previous work on violence against women and economic inequality has demonstrated the utility of deploying the individual as the unit of analysis in order to make women's position within households visible and to ensure that women's economic position in relation to intimate partner violence is examined (see below).

This thesis combines these two approaches and utilises both the individual and the household as units of analysis; exploring both in isolation and in conjunction with each other. In doing so, the very complex relationship between economic inequality and intimate partner violence is explicated. The thesis additionally extends the units of analysis to the neighbourhood level. In doing so it demonstrates that the odds of intimate partner violence for women in the poorest neighbourhoods are greater than those for women in more affluent neighbourhoods. It also demonstrates that, as a unit of analysis, the neighbourhood is not as important as the household.

Economic inequality is conceptualised as disparities in the distribution of income and economic assets across a population. Economic disparities are found between women and men and between groups of women⁴. Women are not only more likely than men to experience deprivation, but they experience it in different ways and specific risk factors affect women in particular (Pantazis and Ruspini, 2006). One of the main examples of such economic disparity between women and men in OECD countries is the gendered pay gap. There are a number of ways of defining the gendered pay gap. For example, the OECD defines it as the difference between male and female earnings expressed as a percentage of male earnings (OECD, 2012), whereas the European Commission defines it as the average difference between men's and women's hourly earnings (European Commission, 2013; Arulampalam, Booth and Bryan, 2007). In the UK, the mean (or sometimes median) of women's pay is taken as a percentage of the mean/median of men's pay (TUC, 2008). Essentially the gendered pay gap can be understood as the disparity in earnings for work of equal value by gender.

⁴ Also between groups of men, but these disparities are not considered here.

If we take the UK as an example, in 2008 the gendered pay gap between men and women in full-time employment was 17.5% and in part-time employment was 35.6% (Arulampalam, Booth and Bryan, 2007). There are a number of reasons proposed for the persistence of a gendered pay gap, including: the under-valuation of women's work; a persistent employment penalty for mothers; occupational gender segregation; and gender discrimination in the workplace (see for example TUC, 2008).

Another pertinent economic disparity between women and men is the combination of the higher likelihood of women being in part-time, as opposed to full-time, employment and the lower rate of pay attached to part-time work. For example, again in the UK, women are four times more likely to be in part-time work than men; three-quarters of part-time jobs are filled by women. In 2007 the mean hourly rate for full-time employment was £13.96, whilst the equivalent mean hourly rate for part-time employment was just £9.89 – a difference of £4.07 per hour (TUC, 2008).

As a result, largely of these two factors, income disparity between women and men (in the UK) is stark. Twenty-seven percent of women compared to 13% of men are located in the bottom income decile and 11% of women compared to 30% of men are located in the top income decile (Hill, Brewer, Jenkins, Lister, Lupton, Machin, Mills, Modood, Rees and Riddell, 2010).

In addition, women are also more likely to be poor, whatever definition of poverty is employed, than men. Women's spells of poverty last longer and women are particularly exposed to economic fluctuations since they have much lower and more unstable family and individual incomes. For example, the Poverty and Social

Exclusion Survey in the UK found 6% more women than men in absolute poverty and that almost a third of women aged 16-24 years with dependent child/ren had insufficient income to keep them and their household out of absolute poverty; 43% had insufficient income to keep them out of overall poverty (Pantazis and Ruspini, 2006; 385). Female headed households, both with and without children, were also found to be far more vulnerable to poverty than households where there is an adult male present (Pantazis & Ruspini, 2006: 375).

Disparities in economic resources are also found between groups of women. For example, single mothers and single female pensioners are the two most persistently poor groups in British society. Women in these groups have significantly fewer economic resources than, for example, women living in a couple with no dependent children (Pantazis and Ruspini, 2006). Minority ethnic women in the UK have also been found to be poorer than other groups of women. For example, the *Poverty Pathways* report (Moosa with Woodroffe, 2009) estimated that 40% of ethnic minority women live in poverty. One third of Black women and two-thirds of Bangladeshi and Pakistani women live in poverty – this is twice the number of White women.

Economic inequality *per se* has not, however, universally been considered to be a 'bad thing' (Pantazis, 2000: 1). Walby (2009: 18) for example argues that unequal social relations involve difference as well as inequality and that some aspects of difference may be positively valued while others will be regarded as unjust. This complex combination of inequality and difference is conceptualized in the idea of 'complex inequalities'.

Utilising a completely different theoretical perspective (neoliberal capitalism: see for example Friedman, 2002), the Thatcher Governments in the UK in the 1980s followed a deliberate strategy of economic inequality in the belief that efficiencies in the economy would be the result. Premised on the notion of 'trickle down', it was believed that providing an incentive to the rich through tax cuts would lead to entrepreneurial activity which would boost economic growth and job creation. This was combined with 'incentivising' the poor to work harder through making it harder to access or sustain access to welfare benefits (Pantazis, 2000). The theory of neoliberal capitalism, on which Thatcher's economic policy was premised, relies on the notion of trickle down and accepts economic inequality as a consequence of the free-market capitalist system (see for example: Friedman, 2002 and Klein, 2007 for two contrasting accounts of the impact of economic inequality through neoliberal capitalism).

There is, however, considerable evidence of the impact of economic inequality on individuals and on societies. Wilkinson and Pickett (2010) demonstrate that less equal societies perform less well than more equal societies across a broad range of measures including health outcomes, education outcomes and violent crime rates. Fajnzylber, Lederman and Loayza (2002) found that crime rates and inequality were positively correlated both within and between countries. Daly, Wilson and Vasdev (2001) found a ten-fold difference in homicide rates in states in the United States related to inequality and Brush (2007) similarly found that income inequality was positively associated with crime rates in U.S. counties in cross-sectional analysis, although not in time-series analysis. Pridemore (2008) also found significant associations between poverty (infant mortality) and homicide rates in his cross-

national study. Although these studies on violent crime and economic inequality do not specifically consider gender, the implications of these findings, that economic inequality is associated with higher rates of violence crime, are relevant to this thesis.

There are a small number of comparative studies which have specifically interrogated violence against women in association with rates of inequality. For example, Asal and Brown (2010) analysed the 2007 WomanStats data and found that increasing levels of economic inequality increase prevalence rates of interpersonal violence. Yllö (1983), Straus (1994), and Yllö and Straus (1999) in a series of studies, which sequentially improved the methodological analysis, compared rates of violence against women across U.S. states and found that more gender egalitarian states had a lower rate of wife assault. Baron and Straus (1989) also found, across U.S. states, a lower rate of rape in states where women's status was higher.

Krug, Mercy, Dahlberg and Zui (2002) in arguing that economic inequality is both a cause and consequence of violence against women, situate the associations at a higher level. For example, they argue that interpersonal violence impedes national economic development by increasing the costs of health and security-related services, reducing productivity and undermining governance. Consequently they conclude that economic policies and programmes cannot be separated from violence prevention.

In order to operationalise the concept of economic inequality through the use of economic resources in this thesis, a number of key economic resources need to be identified to deploy in the analysis. These are drawn from this section, but also from

the following three sections (2.4, 2.5 and 2.6) and so are presented at the end of this chapter.

The first section (2.4) discusses the general approach to the analysis of the data. It starts with a description of the data and then moves on to a discussion of the methods used for the analysis. The second section (2.5) discusses the results of the analysis. It starts with a description of the results and then moves on to a discussion of the implications of the results. The third section (2.6) discusses the conclusions of the analysis. It starts with a description of the conclusions and then moves on to a discussion of the implications of the conclusions.

The first section (2.4) discusses the general approach to the analysis of the data. It starts with a description of the data and then moves on to a discussion of the methods used for the analysis.

The second section (2.5) discusses the results of the analysis. It starts with a description of the results and then moves on to a discussion of the implications of the results.

The third section (2.6) discusses the conclusions of the analysis. It starts with a description of the conclusions and then moves on to a discussion of the implications of the conclusions.

2.4 Economic inequality and intimate partner violence against women

In reviewing the studies presented in this section, a number of key economic resources were found to feature in empirical analysis. Thus, this section is organised under subheadings for each of these economic resources. This enables the current state of the art in understanding these associations to be clearly identified and for questions to be raised which identify current gaps in knowledge or could enable the complexities to be further disentangled. The economic resources are then utilised to identify a set of factors for the analysis in this thesis; and the questions raised are utilised in the development of the research questions for this thesis. Both are set out in section 2.7.

Employment

Women's employment is theorised to be a key means for accessing economic resources, whilst 'worklessness' is theorised to be a major contributor to economic inequality (Steward and Hill, 2005; Turlock, 2005; Sefton and Sutherland, 2005). Women's employment is found to refer to both current employment status and alternative measures of employment, such as employment stability and socio-economic class. Earned income is considered separately along with other sources of income for women. But conceptually, the associations between earned income and intimate partner violence need ultimately to be considered and analysed as part of 'employment'.

The concept of employment therefore extends beyond that of earned income. A number of writers have theorised that employment can provide additional protective benefits to women over and above earned income, including higher status and alternative support networks. For example, MacMillan and Gartner (1999) argue that employment plays a central role in shaping gender identities and gender relations and may raise women's status in a beneficial way.

A number of studies have explored the association between current employment status and intimate partner violence. For example, Walby and Allen (2004), analysing a nationally representative sample of women in England and Wales using the 2001 sweep of the British Crime Survey 'domestic violence, sexual assault and stalking' module found that the odds of domestic violence for unemployed women were 1.6 times higher than those for employed women. Renzetti (2011) also argued that unemployment is associated with elevated rates of intimate partner violence. On the other hand, Lloyd and Tulac (1999) in their small-scale study of impoverished women, and MacMillan and Gartner (1999) in their analysis of the Canadian Violence Against Women Survey both found no significant association between the current employment status of women and intimate partner violence in the past 12 months. [MacMillan and Gartner did however find a significant relational association when women's current employment status was compared to their male partners – this is detailed in section 2.6].

Whilst current employment status has produced contradictory results across both small-scale and nationally representative studies, there appears to be more consistent evidence for the association between precarious/secure employment and

intimate partner violence. For example, Votruba-Drzal, Lohman and Chase-Lansdale, (2002) in their study of 2,000 low income women and Barusch, Taylor and Derr, (1999) from interviews and focus groups with 300 women on welfare both found that intimate partner violence was significantly associated with women moving out of the paid labour force. Riger, Staggs and Schewe, (2004) in their analysis of 1,000 mothers on welfare support found an inverse relationship between work stability and recent intimate partner violence, reporting that higher levels of violence were associated with fewer months of work, even when other factors, such as human capital, were taken account of. They concluded that many low-income women in association with intimate partner violence cycle in and out of work rather than maintaining steady employment. Lloyd (1997) and Lloyd and Tulac (1999), from interviews with low income women also found that intimate partner violence was associated with a higher number of past jobs and higher rates of welfare receipts, but not with current employment status. Walby and Allen (2004) analysed socio-economic class in their nationally representative study of women in England and Wales. Socio-economic class is based on women's current or previous occupation and therefore provides additional information on unemployed and economically inactive women because they are classified by their previous occupation (which could include long-term unemployed/never worked). Therefore socio-economic class could capture the residual effects from previous employment in association with intimate partner violence. They found that 3.3% of professional women compared to 4.5% of unskilled women had experienced domestic violence in the past 12 months. However, they did not analyse current employment status in conjunction with socio-

economic class in order to compare whether one was better able to identify associations with violence than the other.

Thus it can be seen that consideration of both current employment status *and* measures of employment insecurity are being utilised to develop more nuanced explorations for this key economic resource: current employment status alone has been shown to be inadequate in disentangling the associations between women's employment and intimate partner violence. However, the studies cited above which have compared current employment status and other measures of employment to take into account in/security or additional effects from previous occupations are largely premised on populations of low income women. There is a question then of whether current employment is as important as alternative measures in association with intimate partner violence across national populations of women.

Income

Income is predominantly a 'cash' measure, typically based on earnings from employment, but sometimes also including other sources such as welfare and social security payments, private pensions, etc (Gordon, 2000; Gordon, 2006). Sefton and Sutherland (2005) argue that earnings inequality is the largest single contributor to overall economic inequality.

The associations between women's income and intimate partner violence have received considerable attention. The evidence-base which has been produced is relatively consistent from both small-scale/specialist studies and studies analysing nationally representative data. Low incomes are repeatedly found to be associated with increased risk of intimate partner violence. For example, the World Health

Organisation (2010) found low income to be a significant risk factor for intimate partner violence. Tolman and Raphael (2000) in their review of the U.S. literature on domestic violence concluded that the prevalence rate of domestic violence for low income women in receipt of welfare was consistently found to be higher than that for women in the general population. Lloyd (1997) in her analysis of a group of low-income women concluded that women with low personal incomes experienced greater rates of intimate partner violence. Renzetti and Maier (2002) analysing a sample of low income women in public housing projects in the U.S. found low-income women were at greater risk than more affluent women and the International Violence Against Women Survey, Johnson, Ollus, and Nevala (2008) found that women in Denmark with no personal income reported lifetime rates of intimate partner violence by their current partner double those of women with personal income from employment or other sources. Analysis in some studies, for example Walby and Allen (2004), is restricted to earned income (data collected in large-scale surveys which are not specifically designed to examine economic inequality in association with intimate partner violence often only offer restricted measures of women's income). The association between earned income and violence appears to be somewhat less straightforward. Whilst Walby and Allen (2004) found that 3.7% of women with low earned incomes experienced domestic violence compared to 2.6% of women with above average earned incomes, the largest proportion of women experiencing domestic violence was those with middle incomes – 4% of women in this group experienced domestic violence.

More detailed examinations of the associations between income and intimate partner violence against women attempt to disentangle the importance of the

source, as well as the level, of income. For example, Weaver, Sanders, Campbell and Schnabel (2009) and Kurz (1998) both found that not only were poor women more vulnerable to violence, but being on welfare represented an additional risk for physical intimate partner violence compared to women not in receipt of welfare. However Johnson, Ollus and Nevala (2008) analysing the nationally representative International Violence Against Women Survey found no significant difference in the rate of intimate partner violence by source of personal income for women in Australia or the Czech Republic.

A number of studies have extended the analysis of income and violence in a slightly different direction, examining the severity of violence women experience in relation to their level of income, rather than just the prevalence within a population by income level. Evidence from a number of studies (for example, Allard, Albelda, Colten and Cosenza, 1997; Browne and Bassuk, 1997; Honeycutt, Marshall and Weston, 2001; Romans, Forte, Cohen, Du Mont and Hyman, 2007; and Kalmus and Straus, 1999) finds a link between income inequality and increased severity of violence.

Despite a substantial evidence-base indicating a significant association between women's income and intimate partner violence, not every study has found such an association. For example MacMillan and Gartner analysing the Canadian National Violence Against Women Survey (1999: 957) concluded that level of personal income was of 'little consequence' in relation to intimate partner violence.

Studies which examine the level and source of women's income in association with the prevalence and severity of intimate partner violence are at the cutting edge.

However, this is more difficult at a national level in areas where specialist violence against women surveys are not available. As discussed in the previous section, traditionally measures of economic inequality operate at the household, not the individual level. In a number of key national surveys, such as the British Crime Survey, it is problematic to disaggregate women's income from household income. Where this can be done (such as in the 2008/09 sweep of the BCS for example), the measure is often restricted to earned income. Women rely more heavily than men on non-earned income sources and therefore income sources which reflect this need to be considered. Benson, Wooldredge, Thistlethwaite and Fox (2004); Greenfeld, Rand, Craven, Klaus, Perkins and Warchol (1998); and Ashcroft, Daniels and Hart (2004) report similar difficulties in exploring women's income and intimate partner violence using large-scale survey data.

There also appears to be something of a conceptual separation between employment and income (or at least earned income). Current employment status, earned income and occupation have not been rigorously analysed in conjunction with each other to determine whether one or more are of greater importance in association with intimate partner violence. In particular, given the evidence on income and violence particularly for low income women (for example Lloyd, 1997, Lloyd and Tulac, 1999; Renzetti and Maier, 2002), a further consideration is whether there may be a level at which the association between earnings and violence extends to other effects than employment. For example, is income level more important for poorer women compared to more affluent women; and is occupation, for example, a more important association once women have achieved a threshold level of income? There is one small piece of evidence which may shed some light on this question.

Walby and Allen's (2004) study presented findings from the analysis of a question on emergency access to money and domestic violence against women. The question asked respondents how hard they would find it to access £100 at short notice. The odds of domestic violence for women who would find this impossible were 3.8 times higher than those for women for whom it would be no problem. This suggests that the ability to access a certain level of money is highly pertinent in association with risk of violence. Unfortunately the question has not been repeated in any subsequent sweep of the British Crime Survey⁵ and analysis on similar questions in other studies was not found during this review of the literature.

The household

Households are the major site of economic asset accumulation (Gordon, 2000); as such they have been a key focus of work in the inequalities literature.

In reviewing the literature for this thesis, a number of studies were found to have explored household economic resources in association with intimate partner violence. Two factors representing household economic resources are identified from these: household income and housing tenure. Studies based on large-scale survey data are more likely to have examined household economic resources, probably because these data sources often collect economic data on the household. Specialist studies, on the other hand, are found to have concentrated more specifically on women's individual economic resources, such as employment and income.

⁵ Although a request was made to include this question again in future sweeps of the BCS/CSEW by Towers, Walby and Francis in their response to the Home Office consultation on the BCS in 2012: see Towers, Walby and Francis (2012).

The associations between household income and intimate partner violence are found to be highly consistent: Benson et al (2004), Greenfield et al (1998), Ashcroft et al (2004) Walby and Allen (2004); and Tjaden and Thoennes, (2000a, 2000b, 2000c) all found low household incomes to be significantly associated with higher risks of violence compared to women with higher household incomes. It is notable that these findings are predominately generated by large scale survey data.

Housing tenure is a measure of economic asset accumulation centred on the disparity between those who own/occupy housing and those who rent. Further, it has been argued (see for example Murie, 2005) that the promotion of home ownership and failure to invest in public/social housing has led to an increasing concentration of those on the lowest incomes in the social housing sector. This results in housing tenure being both an indicator of economic inequality and an indicator of an unequal housing system, i.e. housing is both a product and contributory factor in economic inequality.

The associations between housing tenure and intimate partner violence have been less extensively explored compared to most other economic resources discussed in this section. Where findings have been published, housing tenure is found to be an important factor. For example in Walby and Allen's study (2004) the odds of domestic violence were significantly higher for women residing in social rented housing compared to women residing in private rented housing or in owner/occupier housing. They found that 9.1% of women in social rented housing had experienced domestic violence in the past 12 months compared to 6.2% of women in private

rented housing and 2.8% of women in owner/occupier housing (Walby and Allen, 2004: 80).

There is considerable scope to further develop the evidence-base on household economic resources and intimate partner violence. One way to investigate this, which has not yet been explored, is to consider the relative importance of the household and the individual as units of analysis in association with intimate partner violence.

Neighbourhood deprivation

Neighbourhoods are commonly raised as an important unit of analysis in the literature concerned with economic inequality within a country. Here it is argued that characteristics of poor areas mean that people located in them have fewer opportunities to accumulate economic resources than those in more affluent areas. Another way of understanding this is to say that the root cause of poor areas is the lack of material resources contained within them (Spicker, 1987). For example, poor neighbourhoods are often located on the outskirts of towns in self-contained estates (Spicker, 2007). Here there are fewer job opportunities and poor transport links, and buying basic necessities from small, local shops is often more expensive than it would be from supermarkets, which are only accessible by car and thus beyond the reach of the poorest residents (Pantazis, 2000).

The same research focus on the neighbourhood as a unit of analysis for economic inequality in association with intimate partner violence has been applied in some recent studies, particularly in the United States.

Rates of intimate partner violence reported by impoverished women living in disadvantaged neighbourhoods have been found to be substantially higher than those reported by women in the general population (see for example; DeKeseredy, Alvi, Schwartz and Perry, 1999; Renzetti and Maier 2002; Benson, Fox, DeMaris and Van Wyk, 2003; Browne and Bassuk 1997; DeKeseredy and Schwarz 2002; Miles-Doan 1998). Whilst some of this difference may be accounted for by survey and sample design differences, there is now a big enough supporting evidence-base to consider this effect to be 'real' over and above the effects of methodology. Evidence has also been found that this effect may not be a linear one. For example Benson et al (2003) found a strong relationship between neighbourhood disadvantage and intimate partner violence *only* in the most disadvantaged neighbourhoods, even after accounting for individual-level risk factors. Similarly, a United States Department of Justice report found that intimate partner violence was both more prevalent and more severe in disadvantaged neighbourhoods. This report also found that when economically distressed households are located in disadvantaged neighbourhoods, the prevalence of intimate partner violence jumps dramatically. As found by Benson and colleagues (2003), Ashcroft and colleagues also found that the effects of neighbourhood remained significant after the effects of individual objective and subjective measures of economic distress were accounted for (Ashcroft et al, 2004).

These studies are important. The findings suggest that the neighbourhood as a unit of analysis for economic inequality and intimate partner violence may be as important as the individual. In reviewing this literature, these neighbourhood level effects appear only to have been examined in the United States.

In addition, there are a number of studies which have also begun to directly apply the key neighbourhood components theorised in criminology to be indicators of disadvantaged neighbourhoods: social disorder; community violence; and collective efficacy, to the risk of intimate partner violence. For example Raghaven, Mennerich, Sexton and James (2006) in their study of 65 women across the U.S. on TANF⁶ tested social disorder and community violence in association with intimate partner violence and found that social disorder, whilst not directly associated with risk of intimate partner violence, was directly associated with level of community violence. Exposure to community violence was found to be directly associated with increased levels of current intimate partner violence. From the study findings Raghaven and colleagues conclude that their sample of poor, substance-abusing women '...appeared to be at higher risk of violence from their partner than other women because of the ubiquity of violence tied to their place of residence.' (Raghaven et al, 2006: 1143).

Work which utilises the neighbourhood as the unit of analysis in association with intimate partner violence is deepening understanding. In particular studies such as Benson et al (2003) and Ashcroft et al (2004) which assess the relative importance of neighbourhood economic resources compared to individual economic resources are state of the art.

However, as far as can be ascertained, outside of North America there has been no move to systematically deploy the neighbourhood as a key unit of analysis, along with the individual.

⁶ The 1996 *Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA)* requires that recipients work in order to receive benefits. Where this had previously been a means-tested federal entitlement programme, it now became a transitory support programme (Temporary Assistance to Needy Families (TANF)).

Service provision

One other potentially important factor which would fit within a neighbourhood analysis strategy is specialist service provision for women experiencing intimate partner violence. The literature review found numerous studies concerned with women's engagement with services (see for example, Fugate, Landis, Riordan, Naeckas and Engel, 2005) and evaluations of service provision (see for example: Robinson, 2009; Glasby and Beresford, 2006; and Lovett, Regan and Kelly, 2004). However, little research was found which positions access to specialist service provision as a potential economic resource factor which may be associated with risk of intimate partner violence. This may highlight a pertinent gap in current knowledge given that access to service provision is a key indicator of economic inequality. For example, in the UK, access to service provision is both a key indicator of deprivation in its own right and contributes to the Index of Multiple Deprivation measure (Lad, 2011; Payne and Abel, 2012).

One key study which did interrogate availability of service provision and intimate partner violence was Stout's (1992) analysis of data from the United States. This found that the rate of shelter provision for battered women was significantly and negatively correlated with intimate Femicide, i.e. states with more services had lower rates of Femicide. The availability of Rape Crisis Centres was also found to be significantly and negatively correlated with Femicide.

There has also been some work linking service provision to the level of local economic and political resources. Although this is not directly related to economic inequality and intimate partner violence, work by Tiefenthaler, Farmer and Sambira

(2005) in the United States suggests that there may be an indirect link because of the way service provision is patterned across the country. Tiefenthaler and colleagues found that service provision was significantly associated with existing community resources. They found a particularly strong link between applications for intimate partner violence service provision funding and community resources; where there were greater community resources available, more, and more successful, funding applications for intimate partner violence service provision were made. Therefore a greater number of services were found in affluent areas, especially those with a major college or university in the county. The study further found that funding was biased toward existing organisations, so if an area was already under-serviced it was likely to continue being so. Conversely, Renzetti (2011) has argued that impoverished neighbourhoods lack the political, legal and economic resources to improve informal and formal service provision, among other things. This would seem to be borne out by the findings of Tiefenthaler and colleagues.

There are currently two approaches found to the question of service provision and intimate partner violence: Stout (1992) directly assesses the impact of service provision on rates of violence against women and finds a significant result, whereas Tiefenthaler et al (2005) find service provision in the United States favours areas with greater economic, political and social resources. A further question therefore becomes apparent, is there a link between service provision, the economic 'wealth' of an area, and the rate of violence against women?

2.5 The economics of exiting violent relationships

There are a number of studies which focus specifically on the association between economic resources and exiting violent relationships. In particular, the issue of whether a sufficiency of economic resources is required in order to both exit and to exit sustainably, i.e. can women afford to set up and maintain independent violence-free homes after exiting a violent relationship, or is an insufficiency of economic resources significantly associated with returning to violence.

Ponic, Varcoe, Davies, Ford-Gilboe, Wuest and Hammerton, (2011), in their study 'Leaving ≠ moving: Housing patterns of women who have left an abusive partner' found women who had 'exited' from a violent relationship, were as likely to remain in the same house as they were to physically leave and move house one or more times. In this paper, they convincingly argue that their findings call into question the tendency to equate *leaving* with moving. Thus the term 'exit' rather than 'leave' is used to differentiate between women who physically move and those who exit the violent relationship but do not physically move. There is also evidence that a substantial proportion of women do not cohabit with their violent partner, including some women who have never lived with their violent partner. For example, 29% of female respondents to the British Crime Survey 2008/09 report never having lived with their violent partner (see chapter 3: section 3.3) (see also: Mooney, 2000; Tjaden and Thoennes 1998). Therefore the term 'exit', rather than 'leave' is more appropriate when considering that women may or may not have physically moved as part of the exiting process, or may never have cohabited in the first place. As such, the term 'exit' is used in this thesis. It refers specifically to the group of women who have experienced intimate partner violence within the past 12 months but are not in

a relationship with their (ex-) violent partner at the point they participate in the survey.

The evidence of a significant association between economic resources and the exiting process is consistent across a number of studies. A sufficiency of economic resources is found to be significantly associated with women exiting violent relationships, and with *not* having to return because of economic necessity. For example Short, McMahon, Chervin, Shelley, Lezin, Sloop and Dawkins (2000) identified access to economic resources as the key criterion in women's ability to exit violent relationships. Anderson and Saunders' 2003 review of the literature on stay/exit decision-making discussed fourteen studies in which economic factors are found to be significant in the stay/exit decision of abused women. They identify income as the most important predictive factor in women's ability to exit. Across the studies reviewed, a source of independent income (including welfare) was not only found to be the most consistently related factor in the ability to exit; it was also often the most powerful predictor, even when controlling for a variety of psychological and other non-economic factors.

Strube and Barbour (1983), in their study of 98 women in shelter accommodation, found employment to be a key factor (although whether it was the earned income or another benefit from employment which was the associate is unclear). They tested a measure of objective economic independence (employment) and one of perceived economic hardship and found that 73% of women at follow up who were employed had left their abusive partner compared to 48% of unemployed women. Further, 23% of unemployed women cited economic reasons for staying with their abusive partner

compared to only 7% of employed women. Of those women perceiving economic hardship, only 18% had left the violent relationship at follow up compared to 71% of women who did not perceive themselves to be in economic hardship who had left. In a later study (Strube and Barbour, 1984) employment was again found to be significant at follow up in whether women had left their abusive partner. Women living with their partner at intake (of the research project) because of economic hardship were also found to be more likely to still be living with him at follow up compared to women living with their partner but not in a state of economic hardship. Compton, Michael, Krasavage-Hopkins, Schneiderman and Bickman (1989) found that economic dependency was amongst the top five reasons cited by women for staying in violent relationships.

Lloyd's in-depth study with low-income battered women (1997) found that the majority of women she interviewed stressed the need for access to and personal control over money and other economic resources in order to be able to leave an abusive partner. She concludes that '...employment and economic self-sufficiency may be the surest route out of a violent relationship for women...' (1997: 162). Similarly, Kalmus and Straus (1999) concluded from their analysis of the U.S. National Family Violence Survey that it is material economic dependency, not psychological dependency, which keeps wives in severely violent marriages.

Whilst there is some evidence that factors other than economic resources also play a significant role in women's ability to exit a violent relationship, even where this has been shown to strongly be the case, economic resources have still been found to be significant. For example Griffing, Ragin, Sage, Madry and Primm's study (2001) of

domestic violence survivors' self-identified reasons for returning to a violent relationship report that the three most cited reasons for returning were: batterer remorse (90%); emotional attachment (73%); and economic need (53%). The study also found a highly significant difference ($p < .001$) between the group which returned for economic need (53%) and the group which would consider returning in the future because of economic need (10%). This suggests that economic need is a factor for a much higher percentage of women who actually return to a violent relationship because of economic need compared to those who plan to return because of economic factors. Griffing and colleagues also found that those women who identified economic need as a reason for possibly returning to a violent relationship in the future were also significantly more likely to have returned for the same reason in the past. This means that economic need has a high rate of repeat endorsement.

A smaller number of studies specifically focus on the impact exiting a violent relationship has on women's economic status beyond whether or not she has sufficient economic resources to maintain her independence and to not have to return to the violent relationship out of economic necessity. A number of these studies focus on homelessness and the housing problems which result from exiting a violent relationship. The association between homelessness and violence is well evidenced. Between a third and 60% of homeless women are estimated to have experienced some form of gendered violence, including intimate partner violence (Kushel, Evans, Perry, Robertson and Moss, 2003; Estes and Weiner, 2001; Faludi, 1993: 8). Baker, Cook and Norris (2003) in examining the housing problems of 110 women who had experienced domestic violence provide an interesting insight into this relationship. They found 38% of women reported becoming homeless as a result

of exiting a violent relationship and a similar proportion reported related issues such as being unable to pay the rent or having to sacrifice other essentials, including food and other bills, in order to pay the rent. Bufkin and Bray (1998) highlight the link between female homelessness and exiting violent relationships. In recognising the impact of exiting on housing, a number of these studies have also made specific recommendations for housing policy. For example Metreaux and Culhane (1999) in their study of women in a New York homeless shelter, which included women who had exited violent relationships and as a result ended up homeless, concluded that leaving the shelter for an *independent* [my italics] home was the strongest factor in association with avoiding repeat shelter stays. They highlight the need for affordable housing accessible to women. Ponick et al (2011) also highlights the need for safe, accessible and affordable housing for women exiting violent relationships.

Whilst findings that economic resources are significant in women's ability to sustainably exit are consistent, many of the studies have utilised small-scale and/or 'clinical' samples of women, for example from refuge or homeless shelters, or those in contact with housing services; there is little research linking economic resources and exiting at the national scale. The literature in this part of the field is quite specialised, and so does not extend much beyond the specific question of whether economic resources are necessary to exit and/or exit sustainably. For example, wider impacts and/or connections between exiting and economic inequality, such as the shift to a single adult, female-headed household, are not fully explored.

It is nevertheless an important part of the literature. The studies evaluated in the previous section rarely disaggregate their analysis samples by whether women are

currently in or have exited recently violent relationships, but treat women reporting violence within a specified time period as a homogenous group, and thus risk obscuring specific connections between exiting and/or remaining: this set of literature has clearly demonstrated that exiting is significantly associated with a sufficiency of economic resources, whilst remaining is associated with an insufficiency of economic resources. This is not accounted for in larger studies which fail to / cannot disaggregate their samples in this way.

This then raises three questions: is being in a currently violent relationship associated with greater economic inequality? Does exiting a violent relationship impact on women's economic inequality? And is exiting a violent relationship associated with greater economic inequality than remaining?

2.6 Intra-household economic inequality and intimate partner violence

There are a number of studies which focus specifically on intra-household economic inequality and intimate partner violence against women. These studies essentially ask whether a disparity in economic resources between intimate partners is associated with an increased risk of violence compared to more economically equal partnerships. Within the field there are several mutually contradictory theories. The empirical evidence from the studies reviewed in this section is more complicated because of the contradictory theoretical frames which set the research agendas. This makes it more difficult to compare the findings.

One set of theories relates to the association between economic stress and violence. These theories posit that one result of households having insufficient economic resources to meet their needs is 'economic stress'. One expression of this stress is violence. Thus poorer households will be associated with a higher likelihood of violence, including intimate partner violence (Dutton 1988; Gelles 1974; Gilligan, 1996 and 2001; Garbarino, 1999). There is empirical evidence that women residing in poorer households are at greater risk of intimate partner violence compared to women residing in comparatively better off households (Benson et al (2004), Greenfeld et al (1998), Ashcroft et al (2004) Walby and Allen (2004); and Tjaden and Thoennes, 2000a, 2000b, 2000c). Economic stress theories also predict that when extra resources are brought into the household making it better able to meet its economic needs, stress is reduced and the risk of violence, as a result,

simultaneously decreases. Here, therefore, it does not matter whether additional economic resources are brought into the household by the female or male partner.

Other approaches posit a contradictory outcome to economic resource distribution within households. The first such approach premised on theories of masculinity posits that male status is achieved through economic superiority. When this cannot be achieved, alternative ways to express masculinity are sought (see for example West and Fenstermaker, 1995). This means that where men are found to lack economic resources, for example being unemployed or having no income, it is predicted that the risk that they will use violence against a partner is increased. The second approach is concerned with the relative disparity in economic resources between a female and male partner. These theories posit that as women gain economic independence and increased status through access to and accumulation of economic resources, this is perceived to be a threat to masculine superiority, thus there is a violent backlash (see for example Kaukinen, 2004). This means that in partnerships where women have greater economic resources than their male partner, it is predicted that the risk of violence against women will be greater than in more egalitarian partnerships and in partnerships in which men have substantially greater economic assets than their female partner.

Theories of masculinity posit that economic superiority, through occupational status, earned income level, and accumulation of economic assets, is a key symbolic and material resource through which men enact masculinity. When men are unable to enact masculinity through economic superiority alternative ways are sought, including through violence. (Hatty, 2000; Adams, Towns, Alison and Gavey, 1995;

Campbell, 1993). It is thus predicted that where men lack employment and/or other economic assets they are more likely to use violence against their female partners. For example, Jewkes (2002) argues that low income and male unemployment lead to the use of violence to (re)establish power and status. Benson et al (2003) and Daniels and Hart (2004) both found that male partner employment instability was significantly related to increased risk of intimate partner violence and Campbell (1992) in her study of Femicide found a substantially higher proportion of men who killed their wives were unemployed compared to the national average. Johnson and colleagues (2008) analysing the International Violence Against Women Survey found that for men in the Czech Republic and Poland, having no income was associated with an increased risk of using violence against intimate partners.

There are also a number of studies which present evidence that disparity in the distribution of economic resources within the household is associated with increased risk of intimate partner violence. For example, Hornung, McCullough and Sugimoto (1981) found evidence of higher rates of violence among couples in which a woman's occupational status was higher than her husband's and a 'protective' effect against violence when a husband's economic resources were much greater than his wife's. MacMillan and Gartner (1999) in their analysis of the Canadian Violence Against Women Survey found that employed women whose husband was unemployed had triple the odds of experiencing systematic abuse compared to more egalitarian couples. Anderson (1997) found that the odds of male violence against women were 5.5 times higher when the female partner earned 70% or more of the couple's income. Johnson and colleagues (2008) found that a woman's employment status in relation to her partner's was a significant predictor of violence, with employed

women having a higher risk of intimate partner violence when their partner was unemployed compared to when their partner was also employed.

There is however some contradictory evidence. Kalmus and Straus (1999) for example in their analysis of violence against wives in the U.S. Family Violence Survey found that wives who were objectively financially dependent were more likely to remain in severely abusive relationships compared to wives who were not objectively dependent. Kalmus and Straus devised a three category score for the objective economic dependence of wives. The highest score on this dependency measure was for wives who were unemployed, had children under the age of five years in the household and whose husband contributed 75% or more of the total household income. On this measure, wives who were objectively dependent had a significantly higher likelihood of experiencing severe physical violence compared to wives with lower levels of objective dependency. Kalmus and Straus concluded from this that objectively dependent wives 'tolerate' more severe violence from their husbands because they do not have the resources required to exit (Kalmus and Straus, 1999: 380).

Walby (2009) argues that when conflict occurs egalitarian households are the most resilient to the possibility of violence and that asymmetrical households are more likely to succumb to violence than more symmetrical ones. Coleman and Straus (1986), in their nationally representative study of couples in the United States found that when conflict occurred between couples, more asymmetrical households were more likely to succumb to violence compared to more egalitarian ones. Walby (2009:

209) concludes that 'greater gendered economic inequality is [thus] linked to greater gender-based violence'.

There is substantial evidence that intra-household economic inequality is associated with increased risk of intimate partner violence for women and that more egalitarian households are less prone to violence. However, the exact mechanisms by which intra-household inequality are linked to intimate partner violence are less clear. How intra-household economic inequality and inter-household economic inequality (between groups of women across households) are connected is less clear still.

2.7 Setting the research frame for the thesis

This thesis is concerned with the overarching question *how is economic inequality associated with intimate partner violence against women*. In this section the research frame for examining this question is set out in four steps, each of which draws on the literature reviewed in this chapter and on the questions raised about missing pieces of the puzzle or ways in which the complex connections between economic inequality and intimate partner violence could be further disentangled. The first of these lays out the definition of intimate partner violence for use in this thesis: this is necessary in order to explore possible measures for use in analysis. The second lays out how the concept of economic inequality will be operationalised. The link with economic resources is explicated and a number of factors which represent economic resources are drawn from the literature, especially sections 2.3 and 2.4. The units of analysis are also considered.

Thirdly, the geographical location and population scale that the analysis will focus on are set out.

Finally, a series of research questions are set down. These are designed to identify and focus on key parts of the overarching thesis question: *how is economic inequality associated with intimate partner violence*. In developing these questions in association with this literature review, they also directly link back to and build on the current field.

Intimate partner violence against women

Intimate partner violence against women in this thesis is understood to be one expression of violence against women. The definition is broad, extending beyond a conception of physical violence to encompass physical and sexual acts of violence within a context of psychological and emotionally abusive behaviours, including threats of physical or sexual violence, coercive control, and economic isolation. Central to the definition is gender inequality. The definition encompasses both current or ex- spouses, *de facto* spouses, boyfriends or dating partners and includes both cohabiting and non-cohabiting couples.

The reasons for focusing on intimate partner violence in this thesis were set out in section 2.2 of this chapter. The decision is based on both theoretic considerations, to enable an exploration of different forms economic inequality (inter-household and intra-household) in association with intimate partner violence for women; and methodological, to ensure an appropriate data source could be identified and accessed and to enable a deep analysis of the subject within the time frame.

Economic inequality

The concept of economic inequality in this thesis is conceived of as the disparity in the distribution of, and access to, economic resources. In reviewing the literature, a number of key economic resources for the purposes of analysis can be identified: employment, personal income, household income, housing tenure, household poverty, neighbourhood deprivation, and specialist violence against women service provision. Three units of analysis were also identified: the individual, the household, and the neighbourhood.

These are used to identify nine factors for analysis, each of which is allocated to one of those three units of analysis:

Individual:

- Women's current employment status
- Women's income
- Women's socio-economic class

Household:

- Household income
- Housing tenure
- Household poverty status

Neighbourhood:

- Level of neighbourhood income deprivation
- Level of neighbourhood employment deprivation
- Specialist violence against women service provision

Geographical location and population scale

One observation made of the studies in sections 2.4, 2.5 and 2.6 is the predominance of work based on samples of women in North America. By comparison, studies which systematically explore economic inequality and intimate partner violence against women in alternative geographical locations are harder to find. The geographical location for this thesis is thus set outside North America: the UK is chosen. The main reason for selecting the UK is that its economic system is similar to that of North

America, thus the definition of intimate partner violence and of economic resources translates between these two geographical regions enabling previous research to develop the analysis for this thesis and for the findings from this thesis to be compared to previous research findings.

A second observation made of the studies in sections 2.4, 2.5 and 2.6 is that there is a greater volume of focused research premised on small-scale/specialist surveys compared to large-scale nationally representative data sources. The research from large-scale surveys on the links between economic resources and intimate partner violence is extremely valuable. However, the primary focus of the analysis of these surveys has been on estimating prevalence and frequency rates for different forms of violence against women. Where research on matters of economic inequality has been undertaken, this is usually as part of a wider research agenda and thus the depth and specificity of the research agendas for these surveys has not been of the same order as for the specialist/small-scale surveys. However, whilst the depth and specificity of the specialist/small-scale surveys has been instrumental in moving research forward, many of them share a very similar sample profile of impoverished women. Therefore, the way in which the findings from these studies relate to whole populations is less well explored. The population scale for analysis in this thesis is therefore set at a national scale, but the focus is confined to the question of economic inequality and intimate partner violence against women, thus a quest for depth and specificity is also encompassed.

Research questions

In the process of presenting the literature review throughout the chapter, a number of questions have been raised which aim to extend the field beyond its current point or to further disentangle key concepts or questions already raised by previous studies. These are drawn out and coalesced into eleven research questions which enable the thesis question to be examined whilst focusing on the most pertinent questions raised by the review:

1. Is current employment as important as socio-economic class?
2. Is women's earned income associated with intimate partner violence?
3. Is women's earned income more important than current employment and socio-economic class?
4. Are household economic resources associated with intimate partner violence?
5. Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?
6. Is there an association between specialist violence against women service provision and intimate partner violence in the UK?
7. Are women's employment and income the most important economic resources associated with intimate partner violence?
8. Is being in a currently violent relationship associated with economic inequality?
9. Does exiting a violent relationship impact on women's economic inequality?

10. Is exiting a violent relationship associated with greater economic inequality than remaining?
11. Is women's economic inequality associated with intimate partner violence in the same way between women in the national context as between women and their male partner within the household?

2.8 Conclusion

This chapter has reviewed literature from several different fields in order to achieve four key tasks: to set the definition of intimate partner violence for the thesis; to establish the key components of economic inequality; to set the geographical bounds and population scale for analysis; and to develop a set of research questions which enables the thesis question: *how is economic inequality associated with intimate partner violence* to be examined, whilst ensuring that the findings from this thesis are relevant to, but also contribute to the expansion of, current knowledge.

Having thus set the research frame for this thesis, the next task is to operationalise this frame for the purposes of empirical analysis. This is achieved in chapter 3 (*Measurement*) and chapter 4 (*Methodology*). A critical analysis is made of national level data sources in the UK which can both provide a robust measure of intimate partner violence and through which women's experiences of intimate partner violence can be linked to the economic resources they command. Once the British Crime Survey 2008/09 is established as the most appropriate data source, chapter 4 lays out in detail its operationalisation, covering the construction of the analysis sample, the methods for dealing with missing data and complex sample design effects. Chapter 4 also explores the factors representing economic resources in detail for the analysis population and describes the analysis methods to be used.

Chapter 5 (*Findings*) presents the findings from the analysis of the BCS 2008/09. The findings examine the research questions laid out in section 2.7 above through a series of testable hypotheses which direct the empirical analysis. Chapter 6 (*Discussion*) uses the empirical findings to address the research questions. Finally,

chapter 7 takes the empirical research findings and the insights provided through the research questions to draw the key conclusions of the thesis on the question: *how is economic inequality associated with intimate partner violence*.

Chapter 3: Measurement

3.1 Introduction

This chapter and the subsequent one (*Methodology*) describe the measurement and methodological issues which need to be addressed before the thesis question: *how is economic inequality associated with intimate partner violence against women* can be examined.

This chapter is focused on the measurement of intimate partner violence. One key limitation identified from the *Literature Review* is the lack of a commonly agreed or standardised measure of intimate partner violence for research. Previous research has utilised varying measures, which has impacted on the scope of the research questions which can be addressed, on the findings and conclusions drawn, and on their comparability.

This thesis utilises a secondary data analysis strategy; while in an ideal world researchers would have the opportunity and the funds to generate the exact data they require to fully explore the research question/s of concern this is rarely the case. Thus, secondary data analysis is an alternative option. The process of operationalising a research agenda through the use of secondary data is explored in this chapter.

Identifying, accessing and utilising the most appropriate sources of data and their measures of intimate partner violence is a time-consuming and complex process: it is, nevertheless, one of paramount importance. Not only does it ensure that the most appropriate measure (of those available) is utilised, it also enables the research

findings to be robustly contextualised within the strengths and limitations of that measure. It also exposes critical gaps which prevent research agendas from being able to further develop the field at the depth and specificity required.

The key focus of this chapter therefore is on the identification of the best available measure of 'intimate partner violence' which can be utilised in the substantive analysis. This thesis does not attempt to develop new measures of intimate partner violence, but rather identifies the most appropriate measure available, in conjunction with women's economic and demographic characteristics, which can address the research questions (see section 2.7 in chapter 2). The first stage of this is achieved by identifying possible data sources on which the analysis could be conducted, considering the extent to which each can address the research questions posited: this review identifies large-scale social survey data as the best data source for the advancement of the thesis research agenda (section 2.7). The most appropriate large-scale data source is the British Crime Survey (BCS). Whilst the BCS is identified as the most appropriate large-scale social survey data source for the analysis in this thesis, there have been numerous sweeps each with slightly differing constructions, making some more appropriate than others. The exploration of the sweeps, which identifies the 2008/09 as the most appropriate, is reviewed in section 3.3. Finally, there are numerous measures of intimate partner violence available within the BCS 2008/09; section 3.4 discusses the measurement of intimate partner violence using survey methodologies, recognises the utility of incident measures, the possible range of options available through use of the BCS 2008/09, and concludes with the selection of a widely defined prevalence measure of intimate partner violence which includes physical and sexual violence, threats, psychological and

economic abuse and stalking behaviours by a woman's current or ex-, cohabiting or non-cohabiting intimate partner (spouse, *de facto* spouse, boyfriend or dating partner) as the best measure for use in the substantive analysis in this thesis.

The measurement of intimate partner violence, however, is a highly complex and contested domain: there is no one commonly accepted definition or measure available and so the choice of such has consequences for the research findings. The widely defined prevalence measure in the BCS 2008/09, selected in this thesis, impacts on the extent to which the research questions can be fully addressed. This chapter thus ends by setting out the limitations on this thesis through 'measurement' (section 3.5).

3.2 Possible sources of data

There is a limited number of sources of data which could be used to meet the research agenda criteria set out in this thesis. In particular a data source is required which includes the range of economic factors and measure of intimate partner violence in order to link the concept of economic inequality to women's experiences of intimate partner violence. The two main sources are official records and survey data.

Official records

Official records are those collated by public agencies such as the various agencies within the Criminal Justice System (CJS). The use of official records in this field has been limited, although a number of studies in the U.S. have successfully used data from welfare records to meet the needs of their particular research agenda which was set by the introduction of the *Personal Responsibility and Work Opportunity Reconciliation Act 1996* (see for example Riger, Staggs and Schewe, 2004). In the UK, the use of official records has primarily concentrated on the CJS and has been particularly concerned with understanding women's reporting behaviour to the police and the changing attrition rate (the gap between the number of crimes reported to or recorded by the police⁷ and the number of perpetrators charged and sentenced by the courts) in cases of intimate partner violence, domestic violence, but especially rape and sexual violence (see for example; Kelly, 2001, 2002, and 2007; Feist, Ashe, Lawrence, McPhee and Wilson, 2007; and Cook, Burton, Robinson and Vallely, 2004). Following the reporting of an incident to the police, the beginning

⁷ For the purposes of 'counting' attrition, the 'start point' of the attrition process within the CJS has been set at different positions by different studies and different agencies.

of the process, cases are 'lost' as they progress through the CJS at various stages, for example they may not be recorded as a 'crime' by the police, the Crown Prosecution Service may rule there is insufficient evidence to take the case to court, and for those cases which do make it to court, the judge may dismiss the case. In addition, the victim/survivor and/or witnesses may 'drop out' of the process at any stage for a number of well documented reasons (see Kelly and Regan, 2005 for example). The result of this 'attrition process' is that reported incidents to the police represent the best data source from official CJS records for this thesis because they suffer from the least attrition, and because they represent the incidents which the victim (or a witness) believes to be violent, rather than those which official agencies have deemed to be criminal, or prosecutable. Data sources further along the CJS process, such as Police National Computer data or Court records, are therefore found to be less suitable for this thesis.

The first stage of the CJS process, the reporting of an incident to the police, thus represents the most comprehensive capture of data, although there are two significant problems with this data source. The first is that evidence suggests the majority of women experiencing violence from an intimate partner do not consider it a crime, nor do they report it to the police. For example, of those women disclosing intimate partner violence in the past 12 months to the BCS 2008/09, only 31% thought what had happened to them was 'criminal' and less than 20% said they had reported it to the police. Other data confirms that at best around a quarter of incidents found in surveys (which will themselves be a sub-set of the 'real' number of incidents) have been reported to the police (Britton, 2012, Walby and Allen, 2004; Mooney, 2000). Police records then, at best, capture a small proportion of cases of

intimate partner violence against women. Secondly, there is no official crime of intimate partner, or domestic, violence in England and Wales, although rape and a number of other sexual offences are specific crimes⁸. Rather intimate partner, and domestic violence perpetration are considered to cover a wide range of criminal behaviours and individual crimes are charged and prosecuted accordingly, for example as assault, criminal damage or stalking. Since 2005, however, police forces in England and Wales have been *encouraged* (but not obliged, i.e. this is not a statutory requirement) to differentiate 'domestic violence' (including intimate partner violence) incidents and crimes by 'flagging'; where an incident is reported which is deemed to fall within the Association of Chief Police Officers (ACPO) definition of domestic violence⁹, a domestic violence qualifier should then be flagged to that incident.

Police reported incidents of domestic violence: experimental data source

At the beginning of this thesis, 'domestic violence' (inclusive of intimate partner violence) reported incidents were considered as one possible source of data which could be utilised in addressing the questions raised by the research agenda. It was not assumed that this data source would be the primary one used, but rather that it could provide additional information to the main analysis, in particular because police reported incident data should be available for all police forces across England

⁸ The National Crime Reporting Standards were compiled in 2002 to act as a national standard to definitively establish which incidents constitute crimes to be recorded and investigated to prevent local police force variation across the country.

⁹ ACPO definition of domestic violence: *any incident of threatening behaviour, violence or abuse (psychological, physical, sexual, financial or emotional) between adults* who are or who have been intimate partners or family members, regardless of gender or sexuality*. *an adult is defined as any person aged 18 or over: ACPO (2008). Note that the definition of domestic abuse has now been extended to cover 16 year olds, although this was after the data requests were made.

and Wales and thus able to contribute to a 'national' picture. Police Force Areas (PFA) are also part of the nested administrative geography of England and Wales and therefore it was hypothesised that it should be possible to disaggregate reported incident data within a PFA into smaller units which could be matched to area-based measures of economic inequality, such as deprivation indices and service provision.

In light of this, a pilot study was undertaken and an application was made for Lancashire Constabulary data on reported incidents with a domestic violence qualifier flag to be used to assess whether a full-scale application to every PFA in England and Wales was feasible. The application was made via the 'MADE in Lancashire'¹⁰ initiative for reported incidents with a domestic violence qualifier flag for the past five years (2005-2010). The request was considered by the 'MADE' steering board, granted, and the data made available in Excel. The request specified a breakdown of the data by: Local Authority Area; victim sex; and financial year, although the data was provided with an additional breakdown to ward level and included crime codes.

Once received, some time was spent on exploratory analysis in order to ascertain whether this data source could make any potential contribution to addressing the research agenda in this thesis. For example, the year-on-year (1 April to 31 March) data was analysed and found to be consistent, i.e. there was no patterned increase or decrease in reported incidents across the five years. Incidents average 5,870 per year and range from 5,761 to 6,250. Similarly, across the five years of data, there

¹⁰ MADE in Lancashire was a local initiative designed to make public a raft of data and statistics about the county of Lancashire to researchers and to the public. Most of this initiative has now been re-located under the Safer Lancashire Board Community Safety Partnership website: <http://www.saferlancashire.co.uk/statistics/> August 2010

was no significant difference between the number of incidents reported each month; the monthly average being 2,446, and ranging from 2,252 to 2,598; and in each Local Authority Area, across all five years, the minimum proportion for the split between male and female victims was found to be 70% women (30% men); on average 80% of the incidents reported were experienced by women.

Across Lancashire, of the recorded crime types covered by flagging¹¹, assault was found to consistently be the highest reported offence, averaging 72% of incidents across the five years, and ranging from 70% to 74%. Reported incidents of criminal damage were also fairly consistent across the five years, with an average of 12.5% per year, ranging from 14% to 11%. Harassment, however, was found to decrease substantially year-on-year over the five year period from a high of 9% in 2005/06 (557 incidents) to a low of zero in 2009/10, whilst reported incidents of public order rose substantially over the five year period, from a low of less than 1% in 2005/06 (46 incidents) to a high of 12% by 2009/10 (750 incidents). The majority of other recordable offences (firearms, drugs, burglary dwelling, burglary non-dwelling, child abuse, theft, fraud/forgery, robbery, arson and kidnapping) each comprised less than 1% of the reported incidents in each of the five years.

To compare reported incident rates by Local Authority Area within Lancashire, the data was converted into a rate per 1,000 of the population for each authority¹². Blackpool was found to have significantly higher rates of all domestic violence reported incidents compared to other districts in Lancashire, averaging 7.4 per 1,000

¹¹ public order, firearms, drugs, assault, sexual offences, burglary dwelling, burglary non-dwelling, child abuse, theft, criminal damage, other notifiable crime, fraud/forgery, robbery, arson, kidnapping, theft of vehicle/UTMV, theft from vehicle, vehicle interference and harassment

¹² Population size data comes from the MADE in Lancashire site and is based on 2009 figures

compared to the lowest rate of 1.1 per 1,000 for the Ribble Valley. Most authorities averaged around 2-4 incidents per 1,000 of the population per year, with the exception of Preston, having an average annual rate of 6.1 incidents per 1,000 of the population.

Exploratory analysis linking police reported incidents to factors representing economic inequality also showed promise. Although the police data does not record any economic factors at an individual level, because of the nested nature of the official administrative geography in England and Wales, it was relatively easy to link this police data to economic factors recorded at area levels (using data from the MADE website). For example, Blackpool is ranked the twelfth most deprived local authority out of 354 authorities in England and was found to have the highest incident rate of domestic violence in Lancashire. By contrast, the Ribble Valley, found to have the lowest incident rate of reported domestic violence in Lancashire, is ranked 302 out of 354. At the ward level this pattern appeared to be repeated. Taking Blackpool as an example, wards with higher deprivation scores were associated with higher average annual incident rates of domestic violence. Bloomfield ward has both the highest deprivation score of any Blackpool ward (74.16) and the highest incident rate of reported domestic violence (20.5 per 1,000 of the population). Similarly, other wards with high multiple deprivation scores¹³, such as Brunswick, Claremont, Park and Talbot (51.72; 63.05; 56.40; and 50.98 respectively) also have among the highest incident rates of reported domestic

¹³ Index of Multiple Deprivation is made up from seven other indices, each weighted to indicate its significance; employment deprivation (22.5%); income deprivation (22.5%); education, skills & training deprivation (14.5%); health deprivation & disability (14.5%); barriers to housing and services (9.3%); crime (9.3%); living environment (9.3%).

violence per 1,000 of the population (10.1; 14.3; 10.0; and 12.5 respectively). By comparison, wards with low multiple deprivation scores, such as Norbreck, Martin, and Bispham (14.43, 21.21 and 22.78 respectively), had the lowest average annual incident rates of reported domestic violence per 1,000 of the population (1.2, 4.2 and 2.7 respectively).

From the exercise to obtain domestic violence flagged reported incident data and the findings of the exploratory analysis of the dataset from Lancashire Constabulary, it was concluded that the data was accessible and of a high enough quality to extend the request for reported incidents with a domestic violence qualifier to all PFAs in England and Wales. This was done via a Freedom of Information (Fol) Act¹⁴ request. Individual police force websites were searched for contact details for the Fol officer or other appropriate contact person and then a Fol request was emailed to all police forces in England and Wales (see figure 3.1 below).

¹⁴ Under the Freedom of Information (Fol) Act 2000, public authorities are obliged to publish certain information about their activities and members of the public are entitled to request information from public authorities. The Act covers any recorded information that is held by a public authority in England, Wales and Northern Ireland, and by UK-wide public authorities based in Scotland: http://www.ico.gov.uk/for_organisations/freedom_of_information/guide/act.aspx

Figure 3.1: Email request under the FoI Act 2000 made to every police force in England and Wales for their reported incident data with a domestic violence flag

Dear

Under the terms of the FoI Act, I would like to request the following information from Police:

The number of domestic violence qualified reported incidents (rather than recorded crimes) between 1 April 2005 - 31 March 2010, broken down by:

- 1) Financial year (1 Apr-31 Mar)
- 2) Gender (where possible under the time constraints imposed by the Act)
- 3) Local Authority District

Many thanks
Jude Towers

Email signature

Whilst data was returned from thirty-eight PFAs (out of 42), accessing the requested data was more straightforward in some cases than others. For example, some police forces were able to reply straight away with the requested data, evidently having kept comprehensive records of reported incidents with a domestic violence qualifier flag, whilst for others, fulfilling the request took a considerable period of time. The police forces which did not supply data, replied to say that the requested data would take too long to compile under the terms of the FoI Act¹⁵. The format of the data returned differed significantly across PFAs as well. In some cases the data was disaggregated by all the requested subdivisions and included additional information, for example the crime code of each incident, and was supplied in an Excel spreadsheet which made evaluating the data relatively easy. In other cases, the data

¹⁵ There is a time limit set by the Act in order to ensure requests are not too onerous on the resources of the public body: any request which would take longer to fulfil than that designated time can be refused.

was not disaggregated by any of the requested subdivisions except financial year, and was presented as a few lines within the body of the email reply.

The data which was received from the individual police forces was collated in SPSS and subject to some exploratory analysis to determine its quality and usefulness in operationalising the research agenda of this thesis.

The number of reported incidents with a domestic violence flag was found to differ substantially across PFAs and across time, and for some PFAs, the number of reported incidents which had been collated by that particular police force also differed substantially across the five year period. For example, the total number of incidents disaggregated by police force area in year one (2005) ranged from 80 to 52,980; and in year five (2010) ranged from 153 to 120,759. In 2005, eleven PFAs did not have any data on domestic violence reported incidents, although every police force which responded to the FoI request had data by 2010 (table 3.1). For those PFAs which had returned data for both 2005 and 2010, the difference between these two time periods showed no consistent pattern. For example, the number of reported incidents had decreased between 2005 and 2010 in five PFAs, with recorded decreases of between 49% and 3%. In the other twenty-two PFAs where the number of reported incidents had increased between 2005 and 2010, the percentage increase ranged from 3 to 1,888 (table 3.1).

It was also the case that a substantial number of police forces supplied their data with the caveat that due to internal counting changes over time the data could not be robustly compared from year to year. There is additionally no statutory obligation or counting frame for flagging domestic violence incidents, so it was also noted by a

number of police forces that comparing across PFAs could similarly not be considered robust.

Given the huge range in reported incidents both within PFAs over time and across PFAs in the same time period (even allowing for differences in population size) and the caveats attached to a substantial number of responses regarding the comparability of data, the conclusion from this exercise in accessing and exploring reported incident data was that the quality of this data source was not adequate to progress the research agenda of this thesis. In addition, the finding that almost half of the PFAs were unable to supply reported domestic violence incidents disaggregated by the sex of the victim further supports this conclusion. This effectively prevents the interrogation of intimate partner violence against *women* for half the national population.

It is worthy of note though, that there does appear to be an improvement in the flagging of domestic violence incidents by most police forces over time: this is a data source which may be of value for future research. However, unless flagging of domestic violence data becomes statutory, as a national data source, this data is likely to continue to be plagued by comparison problems if each PFA is able to implement its own counting procedures without regard to those of other PFAs.

Table 3.1: Results of the exploratory analysis on PFAs in England and Wales (N=38)

PFA code	No. of reported incidents in 2005	No. of reported incidents in 2010	% increase / decrease by 2010	Victim sex available
1	3,931	2,005	-49	Yes
2	7,133	9,148	+28	Yes
3	0	8,848	-	No
4	14,701	15,675	+7	Yes
5	0	12,639	-	No
6	25,714	27,762	+8	No
7	0	11,762	-	No
8	80	153	+91	Yes
9	1,756	11,702	+566	Yes
10	3,283	2,328	-29	Yes
11	5,992	6,971	+16	Yes
12	4,767	9,080	+90	No
13	4,974	5,625	+13	Yes
14	4,500	5,272	+17	Yes
15	0	19,482	-	Yes
16	52,980	120,759	+128	Yes
17	0	26,272	-	Yes
18	8,495	14,502	+71	Yes
19	0	5,611	-	No
20	5,253	6,709	+28	No
21	0	922	-	Yes
22	6,093	6,250	+3	Yes
23	9,535	10,607	+11	No
24	367	7,296	+1,888	Yes
25	7,935	10,389	+31	Yes
26	0	20,140	-	Yes
27	22,979	27,792	+21	No
28	17,128	30,764	+80	Yes
29	12,696	12,339	-3	No
30	34,857	27,789	-20	Yes
31	8,560	11,437	+34	No
32	10,632	15,883	+49	No
33	0	8,650	-	No
34	5,571	7,816	+40	No
35	0	10,861	-	No
36	10,428	14,879	+43	No
37	6,636	5,694	-14	Yes
38	0	27,704	-	Yes

Surveys

The second data source type which could be utilised to progress the research agenda in this thesis is survey data. There are two main types of survey: community or specialist surveys, and large-scale social surveys.

Community surveys of intimate partner (and other forms of) violence against women have typically been specifically developed for a particular research thesis or research agenda and/or have collected data from either relatively small samples in specific geographical areas, or from specialist sites such as refuge or other specialist violence against women services: see for example, Radford's study of domestic violence in Wandsworth, London (Radford, 1987); Hanmer and Saunders 'Well-founded Fear' survey on violence against women in Leeds (Hanmer and Saunders, 1984); or Mooney's North London domestic violence survey (Mooney, 2000). This survey method was particularly favoured by a number of feminist researchers, especially in the early development of the violence against women research agenda. It enabled the incorporation into the design of the survey features which aim specifically to address some of the problems of eliciting accurate information from women about their experiences of gendered violence. For example community surveys on violence against women would often use specially recruited and trained female interviewers and/or have enhanced privacy and security for respondents, including offering interview venues away from the home. Considerable effort was also put into finding the most effective question wording, question structures and survey delivery mechanisms for engaging women. The utility of such features in enabling women to disclose their experiences of gendered violence has been comprehensively

demonstrated, both in the specialist violence against women survey methodology literature (see for example: Krebs, Lindquist, Warner, Fisher, Martin and Childers, 2011; Cook, Gidycz, Koss and Murphy, 2011; Parkhill and Koss, 2005; Ellsberg, Heise, Peña, Agurto and Winkvist, 2001; Schwartz, 2000; Bachman and Saltzman, 1995) and, to some extent, in the related wider survey methodology research literature (see for example: Fowler, 1993; Couper and Rowe, 1996; Turner, Kui, Rogers, Lindberg, Pleck and Sonenstein, 1998; and Brittingham, Towangeau and Keay, 1998). The lessons learned from such community and specialist surveys have been influential in developing more recent and larger-scale surveys.

Over the past several decades, therefore, community surveys on intimate partner (and other forms of) violence against women have contributed a wealth of new knowledge, both to the substantive topic and on ways of engaging women to share their experiences. However, the small-scale and typically unrepresentative sampling designs of such surveys mean they are not a suitable data source for operationalising the research agenda in this thesis, one aim of which is to explicate the associations between women's economic inequality and intimate partner violence for a national population of women. One reason for this is so that the findings are pertinent to the whole population, but also so that any differences between associations at the level of a national population and those at the level of specific sub-populations, for which there is already a considerable evidence-base (impoverished women), (see section *2.4 Literature Review*) can be revealed.

The alternative survey type is the large-scale social survey. This typically differs from community surveys in a number of ways, most obviously the size and

representativeness of the sampling frame. Most large-scale social surveys have substantially higher numbers of respondents than community surveys, and employ a sampling frame which is representative of a large population base, for example the population of a country. In doing so, this sampling frame has to include a proportionate range of respondents who mirror the socio-demographic and economic make-up of that larger population. The sampling design is specifically engineered to enable analysis findings to be extrapolated to the level of that larger, unobserved, population. This makes large-scale social surveys very expensive to run so that most are commissioned by government rather than being specifically designed for particular research agendas. This also means that large-scale social surveys are typically wide-ranging in the topics they cover, rather than concentrating on a specific topic.

There have been a number of 'violence against women' large-scale social surveys in individual countries, such as: Canada, the U.S., Australia, New Zealand, Finland and Sweden; and, a smaller number of cross-national surveys such as the International Violence Against Women Survey (IVAWS) and the World Health Organisation Multi-country study. However, there has been no such large-scale survey to date conducted in the UK, or including the UK.

In contrast, data on intimate partner violence has been obtained in the UK by incorporating questions or modules within surveys with other frames, specifically within crime surveys. The British Crime Survey (BCS) in England and Wales (renamed the Crime Survey for England and Wales in April 2012) is the exemplar of this approach. The BCS is an annual crime victimisation survey which includes a number

of questions about domestic and sexual violence in the main face-to-face questionnaire, but, additionally includes a dedicated computer assisted self-complete module on domestic violence, sexual assault and stalking at the end of the survey.

In addition to utilising a representative sampling frame, large-scale social surveys also typically collect relatively detailed information about a respondent's social, economic and demographic characteristics, which can be linked to their disclosed experiences of violence.

The large-scale social survey thus is better able to address the research agenda of this thesis, by enabling the findings to be extrapolated to the national population and by enabling the linkage of respondent's socio-economic and demographic characteristics to their disclosures of violence.

There is one considerable limitation however with large-scale social survey data (and it is one also typically found with community and specialist surveys) and that is the almost exclusive deployment of a cross-sectional survey design. In cross-sectional design a new sample of respondents is selected at each iteration of the survey and thus, although general trend analysis is possible, longitudinal analysis - which would enable changes in specific women's economic inequality and their experiences of intimate partner violence over time to be matched - cannot be captured. In order to do this, a panel, rather than cross-sectional design would be required. A panel design interviews the same usually randomly selected (as opposed to a cohort study which selects respondents premised on some common characteristic (attrition notwithstanding)) set of respondents a number of times over a set time period, thus

enabling the order of change to be established. For example whether a woman's employment status changed and then her experience of intimate partner violence, or whether her experience of intimate partner violence changed and then her employment status. Carefully constructed causal hypotheses (which also account for the impact of other potential changes in a woman's circumstances) can thus be tested. The availability of such panel data is extremely restricted; there is no such panel data available for women in England and Wales, although there have been a small number of panel surveys run in the U.S. (see for example: Testa, VanZile-Tamsen and Livingstone, 2007 whose survey on women's vulnerability to sexual victimisation by intimate and non-intimate male perpetrators used the same panel of women over three waves, each 12 months apart; and Kilpatrick, Acierno, Resnick, Saunders and Best, 1997 whose panel survey looking at the associations between the physical and sexual abuse of women and substance abuse used a nationally representative sample population across three waves for two years). This is pertinent for understanding that it is the *associations* between women's economic inequality and intimate partner violence which are interrogated in this thesis.

There are three large-scale crime surveys in the UK covering England and Wales, Scotland, and Northern Ireland. However, the British Crime Survey (renamed the Crime Survey for England and Wales in 2012) has the best developed self-complete module on domestic violence, sexual assault and stalking and covers a greater proportion of the population of the UK compared to the other two.

The British Crime Survey (BCS) utilises a nationally representative sampling design, has a dedicated module designed to collect information from respondents on

intimate partner (and other forms of) violence against women and enables the economic and demographic characteristics of women to be linked to their disclosed experiences of intimate partner violence.

The BCS is an annual and long-running crime victimisation survey, which, since 2004, has annually deployed a specialist 'domestic violence, sexual assault and stalking' self-complete module at the end of the survey¹⁶. It is the BCS then that is identified in this thesis as the data source most able to address the aims of the research agenda of this thesis.

At time of writing, seven sweeps of the BCS with the dedicated domestic violence, sexual assault and stalking module have been run. The next task is the selection of the most appropriate sweep of the BCS for addressing this research agenda. This process is discussed in the following section.

¹⁶ There was a 'one-off' version of the domestic violence, sexual assault and stalking module run in 2001. From 2004, this special module has been deployed annually.

3.3 The British Crime Survey: 2008/09 sweep

The 2008/09 sweep of the BCS is identified as the most appropriate for the analysis of the substantive research questions (for a summary of the reasons see table 3.2).

This is not the latest sweep which was available at the time the operationalisation of the research agenda was progressing; this was the 2010/11 sweep. From the seven sweeps available, three were identified, obtained and assessed for their suitability: 2008/09; 2009/10; and 2010/11 (see section 4.2 of *Methodology* for access requirements and note that the access requirements detailed here for the 2008/09 sweep also apply to the 2009/10 and 2010/11 sweeps). These three sweeps were selected as they share the same complex sampling design and increased sample size (see section 4.5 in *Methodology*). An increased sample size and new sampling design was introduced in 2008/09 in order to increase the sample size to a minimum of 1,000 respondents per Police Force Area (increasing the sample by around 11,000 respondents compared to previous sweeps: Home Office, 2009: 2)¹⁷. This was done to enable the findings from the BCS to be used to assess police force performance against the National Performance Indicator targets.

The domestic violence, sexual assault and stalking self-complete module has been delivered as part of the BCS in every sweep (since 2004, plus the original deployment in 2001), but the focus of the module now toggles between partner violence and sexual assault on a year-by-year basis. The 2008/09 and 2010/11 sweeps focused on partner violence, whilst the 2009/10 sweep focused on sexual assault (although all sweeps collect prevalence data for domestic violence, sexual assault and stalking to

¹⁷ Note that the sample size of the BCS (now the CSEW) is to be reduced after 2010/11.

enable annual trend analysis). For the purposes of the research agenda in this thesis then, the 2009/10 sweep contained far less information on intimate partner violence than either the 2008/09 or 2010/11 sweeps. The 2009/10 sweep was discounted at this stage.

This left two possible sweeps of the BCS available to use as the data source for analysis (2008/09 or 2010/11). Exploratory analysis on the two sweeps confirmed that the range of intimate partner violence measures available was the same in both.

However, in exploring the 2008/09 and 2010/11 sweeps of the BCS, four major differences were revealed. The first was that the domestic violence, sexual assault and stalking module in the 2010/11 sweep was subject to a major research initiative with the piloting of an alternative construction of measurement questions. The 2010/11 module was deployed using a split-sample method so that half the respondents were randomly allocated to the usual question format and the other half were allocated to the new question format (see Home Office, 2012a and 2012b). The dataset available to researchers contains only those responses from respondents allocated to the usual question format and not the responses of those respondents allocated to the trial format: this effectively cuts the sample size to the domestic violence, sexual assault and stalking model in half. Given the typically low disclosure rate for intimate partner violence to the BCS under normal circumstances, effectively reducing the sample size by half has a considerable impact. In particular because the operationalisation of the research agenda in this thesis requires the disaggregation of female respondents to the self-complete module into smaller sub-groups, the half sample size in the BCS 2010/11 is extremely problematic.

The second difference was that exploratory analysis of the 2010/11 sweep revealed a number of unexpected results which were out of line with those typically found in other sweeps. For example, the number of female respondents who have never lived with their violent partner has been slowly increasing, rising from 25% in 2001 (Walby and Allen, 2004) to 29% by 2008/09, but the proportion increases dramatically between 2008/09 and 2010/11 to 60%. It may be the case that changes in the UK political economic climate between 2008 (when the UK officially moved into recession) and 2010/11 (with a change of government and the introduction of 'austerity politics') have significantly impacted on this particular structural aspect of women's relationships, or it could be a product of the methodological differences in the 2010/11 survey, predominately the impact of the split sample design. Unfortunately, without further sweeps of the data it was not possible to interrogate this further. It did, however, call into question the reliability of the 2010/11 sweep compared to the 2008/09 sweep.

Third, only the 2008/09 sweep contained a question which enables women's relationship status at point of survey to be identified. Part of the research agenda in this thesis was to bring together analysis of the risk of intimate partner violence in association with women's economic inequality and the impact of women's economic inequality at various different stages of intimate partner violence. For example remaining in a violent relationship or exiting from a recently violent relationship. The 2008/09 sweep of the survey includes a question, asked only of those respondents who have disclosed intimate partner violence in the past 12 months – as to what the relationship status to their most recently violent partner is at point of survey. Respondents have the choice of three states: exited recently violent relationship;

remain in recently violent relationship; or exited for a time but have now returned to recently violent relationship. This question (or any equivalent question which would enable the analysis of this part of the research agenda) was not asked in the 2010/11 sweep.

Finally, the exploratory analysis of the two sweeps also revealed that the questions in the 2008/09 sweep more effectively operationalised the concept of women's economic inequality than those in the 2010/11 sweep; in particular through the personal earnings variable. In the 2008/09 sweep the personal earnings of the respondent are recorded, whereas in the 2010/11 sweep the personal earnings of the 'respondent (and partner)' are recorded and the earnings of these two (respondent and partner) cannot be disaggregated one from the other. Whilst better than no measure at all, the personal earnings measure in the 2008/09 sweep is significantly limited. It counts only earned income and therefore includes only those women in employment at point of survey. There is no measure in the 2008/09 sweep of the BCS which identifies and/or counts women's incomes from alternative sources such as social security, benefit receipts, pensions, maintenance payments, etc. The BCS 2010/11 asks women whether they have any income from a list of possible sources including, but not limited to, employment earnings. However, the amount of income or the proportion each source contributes to women's total income is not recorded. Knowing the level of earned income for women then is considered to be a higher priority for the purposes of the research agenda in this thesis, thus the 2008/09 sweep is again considered more appropriate than the 2010/11 sweep.

As a result of these four factors, the 2008/09 sweep of the BCS was identified as the most appropriate data source for this thesis.

Table 3.2: Matching the research agenda to the most appropriate sweep of the BCS

Thesis research agenda requirements	2008/09 sweep	2009/10 sweep	2010/11 sweep
Focus on intimate partner violence	√	X	√
Sample size and survey responses unaffected by experimental methodology	√		X
Questions of association between economic inequality and intimate partner violence at different stages of women’s relationships can be explored	√		X
Economic factors can be disaggregated for female respondents	√		X

Note that all frequency tables reporting results for the BCS 2008/09 in the remainder of this chapter are computed in SPSS using the complex sample design menu utilising the Home Office complex sample design plan file. The unweighted base is reported alongside the estimated percentage for the national population and its associated standard error (SE) estimate. See Chapter 4 sections 4.5 *Complex sample design* and 4.7 *Analysis methods*.

3.4 Measures of intimate partner violence: BCS 2008/09

There is no commonly accepted or commonly deployed definition of intimate partner violence (see *Literature Review* section 2.2). A definition of intimate partner violence, as an expression of violence against women, was set out for this thesis in chapter 2 (section 2.2). The scope of the definition is broad, encompassing sexual violence and psychological abuse, as well as physical violence, but its emphasis is on gender equality. Intimate partners are defined as cohabiting or non-cohabiting, current or ex-spouse, *de facto* spouse, boyfriend, or dating partner.

Whilst there are a number of measures available in the BCS 2008/09, only three can meet the requirements of the definitional framework for the inclusion of physical, sexual and psychological acts by intimate partners¹⁸ and they are all located within the domestic violence, sexual assault and stalking self-complete module¹⁹. Two of these are prevalence measures, and one is an incident measure.

The two prevalence measures include any respondent who discloses one or more of twenty-five types of domestic violence, sexual assault or stalking, including physical, psychological, sexual, threatening and economic abuse acts, by a current or ex-intimate partner (including a dating partner) (table 3.3). One of these prevalence measures however, a lifetime measure, is less suitable for use in this analysis compared to the alternative prevalence measure which is a 'recent' measure, intimate partner violence within the past 12 months (of date of survey). There is a

¹⁸ The other measures either only partially meet the wide definition, or include perpetrators who are not intimate partners, such as other family members, acquaintances or strangers.

¹⁹ In the face-to-face questionnaire there is a question on force or violence by any household member, but this does not include sexual or psychological acts and includes perpetrators other than intimate partners. There is also a question on sexual violence, but again this is a narrow definition and includes more than just intimate partner perpetrators.

need to link up socio-economic and demographic data about a respondent with their experiences of intimate partner violence for the purposes of analysis. The collection of data on socio-economic and demographic data and experience of intimate partner violence should be as concomitant as possible. Socio-economic and demographic data about the respondent is collected for the point in time at which they participate in the survey. The measure of intimate partner violence within the past 12 months is more concomitant with this data than the measure of intimate partner violence which could have occurred at any time during the respondents 'lifetime'. Lifetime is determined as from 16 years to the point the respondent participates in the survey. The lifetime prevalence measure is thus disregarded, leaving the recent intimate partner violence prevalence measure or the incident measure.

There is a great deal of support across the literature for incident based measures of intimate partner violence. Using a measure which estimates the incident rate as opposed to the prevalence rate has been argued to be important as a more accurate representation of the repetitive or serial nature of intimate partner violence against women (Walby and Myhill, 2001). It has also been found that the asymmetrical nature of intimate partner violence is rendered visible when robust measures of incidents are utilised because of women's repeated and multiple victimizations (Hegarty and Roberts, 1998). Further, it has also been argued that the impacts of such violence on women can be better understood through incident measures (Stark, 2007). This is reflected in some of the specialist survey methodology developments. For example, the latest version of the Sexual Experiences Survey (SES: Koss, Abbey, Campbell, Cook, Norris, Testa, Ullman, West and White, 2007) has dispensed with the 'yes/no' initial response options (prevalence measurement) and now relies solely

on a frequency assessment ('how many times') which allows an overall victim score to be devised from the survey results.

In the BCS 2008/09 domestic violence, sexual assault and stalking self-complete module, the incident measure is categorical and, unlike the screener questions for the prevalence-based measure which are addressed to the whole sample participating in the self-complete module, only respondents who have already disclosed one or more incidents of intimate partner violence (N=763: see table 3.4) are asked how many times they have experienced such violence in the past 12 months. The available categories for respondents to select as the number of incidents of intimate partner violence they have experienced increase in width as the possible number of incidents increases. The final two categories are open ended and, at least in the case of the final category, open to subjective interpretation, the categories being: one; two; three to five; six to twenty; twenty-one to forty-nine; fifty or more; and 'too many to count'. Plus there are two invalid/non-response²⁰ categories available ('don't know / can't remember' and 'refused to answer').

When the number of respondents per category is explored (table 3.5(a)) with invalid/non-responses removed prior to analysis²¹, the total number of respondents is only 449 out of 763. If the analysis is re-run including missing respondents (missing because they have returned invalid/non-responses of 'don't know / can't remember'

²⁰ Invalid/non-responses are defined and discussed for the BCS 2008/09 in *Methodology* (chapter 4: section 4.4)

²¹ Complete case analysis is the method utilised in this thesis for dealing with 'missing data', where invalid/non-responses are removed prior to analysis. There are two possible invalid responses for each question on the BCS 2008/09 'don't know / can't remember' and 'refused to answer'. The strategy for dealing with missing data in this thesis is discussed in chapter 4.0 (*Methodology*): section 4.4.

or 'refused to answer') then it can be seen that nearly half (42%) the respondents eligible to participate in this question do not provide a valid response (table 3.5(b)).

This makes the use of the incident measure extremely problematic. Almost half of respondents who have already disclosed one or more incidents of intimate partner violence to the self-complete module will not or cannot disclose the number of incidents of intimate partner violence they have experienced in the last 12 months to the question in its current format. This raises serious concerns about how well this measure could represent women's experiences of intimate partner violence. Secondly, if this incident measure were to be used in the substantive analysis then almost half of the respondents from the prevalence measure would potentially be lost as 'missing'. It is moreover interesting to note that in its annual published estimates of intimate partner violence from the domestic violence, sexual assault and stalking modules of the BCS, the Home Office does not publish an incident estimate based on this measure.

Given this problem, the incident measure is (reluctantly) rejected and the recent intimate partner violence prevalence measure is selected as the most appropriate for analysis in this thesis.

Table 3.3(a): Individual acts making up the composite measure of IPV used in analysis

Behaviour set	Individual act description
Domestic violence	Prevented from having fair share of the household money
	Stopped from seeing friends and relatives
	Repeatedly belittled to the extent of feeling worthless
	Frightened by threats of being hurt or someone close being hurt
	Pushed / help down / slapped
	Kicked / bitten or hit with a fist or something else or having something thrown at them
	Choked or attempted strangulation
	Threatened with a weapon
	Threats to kill
	Attacked with a weapon
Sexual assault	Had some other kind of force or violence used against them
	Indecent exposure
	Unwanted sexual touching
	Sexual threats
	Penetration of vagina and/or anus with penis when not consented to
	Penetration of vagina and/or anus with object (including fingers) when not consented to
	Penetration of mouth with penis when not consented to
	Attempted penetration of vagina and/or anus with penis when not consented to but did not succeed
	Attempted penetration of vagina and/or anus with object (including fingers) when not consented to but did not succeed
	Attempted penetration of mouth with penis when not consented to but did not succeed
Stalking	Sent unwanted letters, emails, text messages or cards that were either obscene or threatening
	Made a number of obscene, threatening, nuisance or silent phone calls
	Waited / loitered outside home or workplace
	Followed and watched
	Deliberately interfered with or damaged personal property

Table 3.3(b): Prevalence of DV, sexual assault and/or stalking across the sample population

	Percentage of total sample population (N=12,693)	Percentage of sample population disclosing intimate partner violence (N=760)
Domestic violence	5.0	84.8
Sexual assault	0.5	8.8
Stalking ²²	1.7	28.3

Table 3.4: Estimated prevalence rate of IPV in the sample population

	No. in the sample	Estimated percentage of national working-age population	SE
Recent IPV	763	5.2	(0.3)
No recent IPV	12,157	94.8	(0.3)
Total	12,920	100.0	-

Table 3.5(a): Estimated percentage of the national working-age population per incident category for the analysis sample population

	No. in the sample	Estimated percentage of the national working-age population	SE
One	145	37.1	(4.3)
Two	71	16.7	(2.3)
3-5	99	19.2	(2.3)
6-20	75	16.6	(2.6)
21-49	20	4.8	(1.0)
50 or more	5	0.6	(0.3)
Too many to count	34	6.0	(1.4)
Total	449	100.0	-

²² In law, stalking requires two or more acts: it is counted here as one or more acts in order to be comparable with the prevalence rates of domestic violence and sexual assault

Table 3.5(b): Estimated percentage of the national working-age population per incident category with missing respondents

	No. in the sample	Estimated percentage of the national working-age population	SE
One	145	21.4	(2.2)
Two	71	9.6	(1.4)
3-5	99	11.1	(1.3)
6-20	75	9.6	(1.5)
21-49	20	2.2	(0.6)
50 or more	5	0.3	(0.2)
Too many to count	34	4.5	(0.8)
Missing: don't know/can't remember	88	14.2	(1.7)
Missing: refused to answer	226	29.1	(2.2)
Total	763	100.0	-

How well can the prevalence measure ‘recent intimate partner violence’ address the research questions?

There are a number of issues with the measurement of intimate partner violence which potentially impact on the ability of the selected prevalence measure in this thesis to address the research questions to their full extent. In particular the ability to accurately differentiate those women who have or have not experienced recent intimate partner violence is of concern.

The measurement of intimate partner violence is complex and contested. What is more, whilst the development of the theorisation, defining and framing of intimate partner violence continues apace, the measurement of intimate partner violence is failing to keep up. A widening gap is developing between the ‘state of the art’ in theoretical knowledge and the ability of measurement instruments to accurately test and/or represent these new understandings.

This is clearly seen in the on-going debates over the conflict tactic scale's (CTS) ability as a measurement instrument to accurately represent and 'count' women's experience of intimate partner violence. Yet, it still dominates (albeit in various modified forms) surveys concerned with the collection of data on intimate partner violence (Jaquier, Johnson and Fisher, 2011: 40). The key debate here hinges on the increasingly theorised centrality of intimate partner violence against women as a course of conduct²³ versus the CTS measurement of individual acts.

In its recent prevalence measure the BCS 2008/09 deploys a modified version of the CTS within the domestic violence, sexual assault and stalking self-complete module, which 'counts' individual acts of intimate partner violence.

The Conflict Tactic Scale

The CTS scale is premised on ascertaining whether respondents have any experience, within a predefined time period, of one or more of a number of specific 'acts'. In the BCS 2008/09, these acts include physical violence, sexual violence, psychological abuse and stalking behaviours. There is also a 'harms' scale, which asks respondents which, if any, of the listed harms they have experienced as a consequence of (in this case) intimate partner violence (see table 3.6).

²³ See *Literature Review* section 2.2 for a more detailed account of the theoretical definitional framings of intimate partner violence.

Table 3.6: Harms sustained by women from IPV in the past 12 months

N=763	Estimated percentage (population)	SE
Mental / emotional problems	34.4	(2.4)
Minor bruising / black eye	20.9	(1.7)
Stopped trusting people / difficulties in relationships	15.2	(1.7)
Scratches	14.5	(1.5)
Severe bruising / bleeding from cuts	6.5	(0.9)
Other (non-physical)	4.3	(1.1)
Other physical injuries	2.2	(0.4)
Tried to kill self	2.1	(0.5)
Internal injuries / broken bones or teeth	1.6	(0.5)
Fell pregnant	0.8	(0.3)
Contracted a disease	0.7	(0.3)

The CTS was developed by Straus and colleagues at New Hampshire University in the United States and first deployed by Straus in 1973 in the National Family Violence Survey. The CTS was designed to measure intra-family conflict and the tactics families use to settle conflicts of interest. Originally, the CTS was designed to test the ‘catharsis theory’ of violent control (see Straus and Gelles, 1999). Catharsis theories (also called ‘hydraulic models’ or ‘ventilation theories’) assume that all human beings have built into their nature a greater or lesser tendency towards aggression which cannot be suppressed. According to these theories, if we attempt to repress this deep biologically based motivation, it will only result in a more destructive explosion of the innate aggressive drive at some later point in time.

The CTS was premised on the assumption that conflict is an inevitable part of all human associations including those within the family. The violence ‘problem’ is an inadequate or unsatisfactory mode of managing and resolving the conflicts which are

inherent within the family (Straus, 1999a: 45). The original CTS included three scales to measure intra-family conflict:

- i) Reasoning scale: rational discussion, argument and reasoning.
- ii) Verbal aggression scale: use of verbal and nonverbal acts which symbolically harm (or threaten).
- iii) Physical aggression or violence scale: use of physical force.

However, the original survey work using the CTS concentrated almost exclusively on the physical aggression or violence scale. In reporting the findings from the National Family Violence Survey, Straus highlights the fact that they largely limit their focus to the physical aggression or violence scale for both theoretical and practical reasons (Straus, 1999b: 76). A theoretical assumption was made that the antecedents and consequences of one form of maltreatment are likely to be different to the antecedents and consequences of others despite there being common elements across the forms. For comparative analysis therefore, the research concentrated on one form of intra-family conflict (physical aggression). Methodologically, it was argued, one form was selected to ensure sufficient depth could be achieved within a limited interview time allocation. (Straus, 1999a: 33).

While this emphasis on the physical aggression scale has been of importance in the debate over the ability of the CTS to adequately measure intimate partner violence against women, the debate is not limited to this. The findings from the initial deployment of the CTS, which were of unprecedented symmetry in the use of violence in marriages, suggested that wives were as violent toward their husbands as husbands were toward their wives, and are at the core of the debate. As Dobash,

Dobash, Wilson and Daly (1992) pointed out these findings were completely at odds with those of other research on marital / intimate partner / domestic violence and the official records of the police, divorce proceedings, court records, shelter populations, and other public and health services, all of which suggested an asymmetrical dynamic with women overwhelmingly the victim/survivors of male violence. Dobash et al (1992) also critiqued the theory upon which the original CTS was developed, arguing that it fails to explore the characteristic features of the 'family' as distinct from other social groups and that the particular domains within which the agenda of husbands and wives conflict are not explicated. They argued that this effectively obscures the distinctiveness of violence against wives which occurs within particular contexts of perceived entitlement and institutionalised power asymmetry.

Dobash et al (1992) concluded that the original CTS provided neither a valid nor a reliable account of marital violence. Although Straus has argued that the CTS was not designed to measure violence against women, nor was it designed to test theories premised on gendered inequality (Straus, 1999a: 33).

In 1996 a modified version of the CTS was developed which addressed a number of the criticisms levelled at the original version and its capacity to provide a valid and accurate account of intimate partner violence. This included the development of a sexual violence scale, and the inclusion of an injury scale. Analysis utilising these modified versions of the CTS produces findings which are considerably more gender asymmetrical. See tables 3.7(a) and 3.7(b) for the gendered findings for recent intimate partner violence in the BCS 2008/09. These show that for the working-age

population, an estimated 5.2% of women compared to an estimated 3% of men experience intimate partner violence in the past 12 months; and that the odds of women experiencing intimate partner violence are significantly higher than those of men (1.8 times higher).

Despite its dominance in the field, use of the CTS remains extremely contentious. Criticisms include that it offers too limited a set of items and is especially deficient in naming specific coercive and hurtful behaviours reportedly used by men against women in intimate partnerships (Lloyd, 1997). It has also been repeatedly criticised for failing to take account of the motivation for actions; i.e. distinguishing between actions taken in self-defence compared to those designed to intimidate or injure, and for failing to take into account cumulative effects and the context in which these actions occur (see for example Stark, 2007).

There have been attempts to construct alternative measurement instruments such as the Sexual Experiences Survey (Koss et al, 2007) and the WEB scale (Women's Experiences of Battering) (Smith, Smith and Earp, 1999). The WEB scale was developed using data from focus group sessions with women who had experienced intimate partner violence who were asked 'what must be subjectively apprehended about an individual experience in order to classify it as one of battering?' and 'what must be subjectively apprehended about an individual woman in order to classify her as battered?' The data showed physical assaults to be outcrops from an underlying condition of continuous abuse and psychological vulnerability that occasionally broke through the physical-assault threshold. The data was used to develop a ten-point WEB scale which included items such as 'he makes me feel unsafe even in my own

home'; 'I feel owned and controlled by him'; and 'he makes me feel like I have no control over my life, no power, no protection'. However, there has been no widespread uptake of these alternative scales in large-scale social surveys seeking to elicit knowledge on intimate partner violence against women.

A newly emerging criticism of the typically deployed items in a CTS type scale, such as that deployed in the BCS 2008/09, is the need to extend it to include other forms of intimate partner violence which are more likely to be experienced by women in minority groups. For example, Bhuyan, Mell, Senturia, Sullivan and Shiu-Thornton (2005: 904) caution against the measurement regimes which universalise women's experiences of intimate partner violence and thus can reproduce class and race hegemonies. They call for 'culturally-specific' acts, such as acid throwing, to be included. Harne and Radford (2008) argue that cultural context shapes the violent acts women experience. These therefore need to be represented in measurement regimes in order to capture the full range of women's experiences.

The ability of the CTS to adequately 'count' and represent women's experiences of intimate partner violence is clearly still an issue of considerable debate. However the CTS remains the most commonly deployed counting instrument in large-scale social surveys seeking to elicit knowledge on intimate partner violence, and thus in practical terms the use of measures premised on the CTS is largely unavoidable. While successive modifications to the CTS have improved its ability to elicit information from women on their experiences of intimate partner violence, the lack of context and inability to locate women's experiences within on-going gendered power relations is increasingly problematic.

Accurate recall

There is additionally a concern with measurement instruments in large-scale social survey data sources such as the BCS 2008/09 about question content and structure. [Note that issues such as the sampling frame design and differential non-response are addressed in the following chapter (*Methodology*: section 4.4)].

Question content and structure

Research across a broad range of ‘sensitive’ subjects, including intimate partner violence, finds that multiple behaviourally specific questions are associated with greater disclosure by study participants (Crowell and Burgess, 1996). The early Sexual Experiences Surveys (SES) (for details about the original construction and latest revisions to the SES see: Koss et al, 2007) are credited with innovating the use of non-judgemental specific language and the avoidance of legal terms in order to help respondents identify and recall experiences that constitute forms of unwanted sexual experiences. Many of the features of the SES (early and later versions) are now typically incorporated into measurement instruments for both victim/survivors and for perpetrators: this is the case with the BCS 2008/09. For example, the BCS does not ask respondents whether they have been ‘raped’, a term which is subjectively understood and highly stigmatised, rather it describes the behavioural aspects of rape in a number of distinct questions (see table 3.3(a)).

However, the use of screener questions in the BCS 2008/09 is more problematic. Given that evidence suggests greater disclosure of sensitive subjects occurs when respondents are repeatedly, and in different ways, asked about their experiences of violence over the whole course of the survey (see for example: Harne and Radford,

2008; Ellsberg et al, 2001; Hegarty and Roberts, 1998) the use of screener questions is problematic. Respondents (to the BCS 2008/09) are asked a series of screener questions about acts of domestic violence, sexual assault or stalking in the past 12 months or during their lifetime. Those respondents who answer 'yes' to any screener question are then asked a series of more detailed questions; those who answer 'no' move onto the next set of screener questions. However, those who answer 'don't know / can't remember' or 'refuse' to answer are also directed to the next set of screener questions – they are not directed through the more detailed set of questions which follow the screeners and are therefore not given multiple opportunities to respond to questions about their experiences of intimate partner violence across the whole course of the survey. This is likely to mean some proportion of 'missing' respondents should be in the group of 'yes' respondents and therefore included in the intimate partner violence measure, but this proportion is not currently estimated.

For the purposes of the analysis in this thesis in terms of practicality there is no data source with an alternative measure available which could be used to meet the aims of the research agenda. It is however, arguably the case that the BCS 2008/09 measurement scales are sufficiently well developed to enable a robust delineation between women who have and those who have not experienced intimate partner violence in the past 12 months in order that the economic and demographic characteristics of these women can be compared.

Any Partner Abuse Last Year (AnyPALY) in the BCS 2008/09

The measurement of intimate partner violence through large-scale social surveys is theoretically and methodologically problematic because it requires the operationalisation of extremely complex social relations and their interactions into relatively simple processes which are quantifiable. Whilst the major site of work, and contestation, currently resides in the debates around the ability of measurement regimes to accurately estimate the level and frequency of intimate partner (and other forms of) violence against women *as women experience it* the ability to robustly delineate between women who have experienced and those with no experience of intimate partner violence is also crucial for analysis in fields like this one. There is, however, still no 'gold standard' measure (Jaquier, Johnson and Fisher, 2011: 24).

The measure of intimate partner violence identified from the BCS 2008/09 to be utilised in the analysis in this thesis is by no means this elusive 'gold standard'. It does however have a number of features which make it reasonable to argue that its ability to delineate between women experiencing recent intimate partner violence and those with no experience of recent intimate partner violence is reasonably robust: it includes women experiencing a wide spectrum of physical, sexual and psychological violence, it is conducted under private and confidential conditions, and the question wording has been carefully tested, is termed through behaviourally specific language and does not use stigmatised or specialist terminology.

Table 3.7 (a): Estimates for 16-59 year old, ever partnered hetero/bisexual women and men experiencing IPV in the past 12 months

	Total no. in sample	Estimated percentage of national working-age population	SE	Estimated number in national working-age population ('000)	SE ('000)
Women	12,920	5.2	(0.3)	651	(35)
Men	10,715	3.0	(0.2)	366	(30)

Table 3.7 (b): Relationship between sex and IPV²⁴

	OR (exp(β))	SE (β)	Sig.	Odds of IPV compared to men
Intercept	.030	.083		
Women	1.794	.101	<.001 ***	1.8 times greater
Men (ref cat)	-	-	-	
McFadden R ² =.009: AUC = .579				

²⁴ Single-level binary logistic regression analysis is used to estimate the OR for the relationship between sex and IPV: for a full explanation of the use of single-level binary logistic regression analysis in this thesis see Chapter 4: section 4.7 *Analysis methods*

3.5 Limitations: Measurement

Whilst the BCS 2008/09 represents the best source of data available for addressing the research agenda and for analysing the substantive research questions of this thesis, there remain a number of limitations. These limitations impact on the ability of this data source and measure to fully address the question of economic inequality and intimate partner violence against women. The four key limitations for this thesis are briefly discussed in this section.

The first of these is the recognition that the modified conflict tactic scale (CTS) as a measurement instrument of intimate partner violence against women remains highly contested and controversial. In particular it does not adequately capture the patterning of intimate partner violence over time, or effectively operationalise the continuum of violence either within violent relationships or within violent incidents. Both of these criticisms are of increasing theoretical centrality. This calls into question the ability of the CTS to delineate between those women who have or have not experienced recent intimate partner violence in order for these two groups to be compared in relation to their economic profiles.

The second limitation is the lack of a robust incident measure of intimate partner violence against women.

The third is the inadequacy of the respondent income measure in the BCS 2008/09. It is an improvement on that in other large-scale surveys including the BCS 2010/11 because it enables the respondent's income to be clearly disaggregated from that of her household. However, the failure to include alternative sources of income as well as that earned from employment is particularly problematic for questions concerned

with women's economic inequality. Women in the UK, (see for example TUC, 2008), primarily because of the disproportionate level of care responsibilities which they bear but also because of issues such as the gendered pay gap and a greater likelihood to be located in low paid, part-time employment, rely more heavily on income from social security and welfare than men. In order to fully explore the importance of personal income in association with intimate partner violence against women, better measures are required which encompass the full range of income sources for women.

Finally, the use of screener questions which re-direct 'don't know / can't remember' and 'refuse to answer' respondents away from a series of more detailed questions and on to the next set of screener questions is problematic. It is likely to mean that a proportion of 'no' intimate partner violence responses should be 'yes', but this proportion is unknown for the BCS 2008/09.

Note that the outcomes from this process of critically analysing the available data sources and measures of intimate partner violence available, specifically the limitations identified with the British Crime Survey, have been fed back to the UK Home Office via participation in a number of consultations (Towers, Walby and Francis, 2012; Francis, Walby and Towers, 2011).

3.6 Conclusions

This chapter has addressed the complex and contested issues of the measurement of intimate partner violence in order to identify the most appropriate measure for use in analysis in this thesis, which can both meet the requirements of the research agenda and address the research questions.

A number of possible sources of data were explored, and large-scale social survey data was identified as that best able to meet the aims of the research agenda. The BCS was identified as the most appropriate large-scale social survey dataset. However, the selection of the most appropriate sweep was shown to be a complex process in and of itself. There were strong reasons for the selection of the 2008/09 sweep, although this is not the most recent sweep available, and a small amount of (prevalence) data on alternative sources of income (available in the 2010/11 sweep) was sacrificed in order to analyse the level of women's earned income in association with intimate partner violence. This also demonstrates the level of difference across sweeps of the same annual survey. The two key features of the BCS 2008/09 sweep required to meet the aims of the research agenda of this thesis: the ability to disaggregate women by relationships status at point of survey (exited or remaining), and the ability to disaggregate women's earned income from their household income, were not available two years later in the 2010/11 sweep.

In the following chapter (chapter 4: *Methodology*), the operationalisation of the research agenda through the use of the BCS 2008/09 is detailed. Access to and the construction of the BCS 2008/09 are discussed; the construction of the analysis sample is explored; the strategy for dealing with 'missing data', through the sampling

frame of the BCS itself, through the sampling frame of the domestic violence, sexual assault and stalking self-complete module, and from individual questions, is set out; and the methods utilised to account for the impact of the BCS 2008/09 complex sampling design on analysis findings are described. Finally, the quantitative methods used in the analysis of the substantive research questions are laid out.

Additionally, at the end of chapter 4 a number of further limitations on the ability of the BCS 2008/09 to fully explore the research questions in this thesis are set out.

Chapter 4: Methodology

4.1 Introduction

This chapter and the previous one (*Measurement*) address the methodological and measurement issues which need to be addressed before the thesis question: *how is economic inequality associated with intimate partner violence against women* can be examined.

In the previous chapter (*Measurement*) the most appropriate data source for the operationalisation of the thesis question was identified: the British Crime Survey 2008/09. The most appropriate measure of intimate partner violence was also selected. This is the widely defined prevalence measure of intimate partner violence against women in the past 12 months from the domestic violence, sexual assault and stalking self-complete module.

This chapter now focuses on the operationalisation of the BCS 2008/09 in detail. In section 4.2 access to, and the construction of, the BCS 2008/09 is discussed; section 4.3 constructs the analysis sample to be used in this thesis, demonstrating how, and why, this is disaggregated from the total sample population of the survey; missing data, and the strategies used to deal with its impact, are explored in section 4.4; the construction and effects of the BCS 2008/09 complex sample design and the strategies for dealing with this in the analysis are considered in section 4.5; the operationalisation of the concept of economic inequality through the use of factors representing women's direct and indirect access to economic resources in the BCS 2008/09 are detailed in section 4.6; and the methods used for analysis (frequency

tables, correlations and tests of independence, and single- and multi-level binary logistic regression) are laid out in section 4.7. A number of limitations from the operationalisation of the BCS 2008/09 are laid out in section 4.8.

In the *Literature Review* in chapter 2, the thesis question: *how is economic inequality associated with intimate partner violence against women* was posited. In evaluating the current literature, four key gaps or limitations were identified: these were used to set the broad research agenda through which the thesis question is examined (chapter 2: section 2.7). A set of research questions is additionally laid out in this section (section 2.7); these enable the key aspects of the thesis question to be identified and focused on in turn. This chapter, along with the previous one (*Measurement*), in addressing the methodological and measurement issues, concludes by setting out a series of testable hypotheses linked to each of the research questions. This enables the operationalisation of both the research questions and the overarching thesis question through analysis of the British Crime Survey 2008/09.

Analysis of the BCS 2008/09 is then undertaken to test the hypotheses set out at the end of this chapter: the results of the analysis are presented in the following chapter, chapter 5: *Findings*. Those empirical analysis findings are then related to the research questions in chapter 6 (*Discussion*). Chapter 7 then concludes by drawing from the empirical findings and subsequent discussion of them, the key conclusions to the thesis question: *how is economic inequality associated with intimate partner violence against women?*

4.2 The British Crime Survey 2008/09

The British Crime Survey 2008/09 (hereafter referred to as the BCS) (re-named the *Crime Survey for England and Wales* in April 2012) is a crime victimisation survey conducted annually in England and Wales, which seeks to extract information from a sample of adults (aged 16 years and over) on their experiences of being a victim of crime and on their opinions about the criminal justice system²⁵. The main questionnaire, which includes demographic and socio-economic information about the respondent and their household, as well as questions designed to measure the respondent's criminal victimisation in the previous year, is conducted face-to-face, with the interviewer reading aloud the question and the respondent choosing one of a set of pre-defined answers. In addition, the BCS includes a number of 'self-complete' modules on sensitive subjects such as interpersonal violence (domestic violence, sexual assault and stalking), drug use and drinking behaviour. For these modules, respondents read the questions directly from a laptop computer and enter their own responses; the interviewer does not see the response unless the respondent has specifically asked for their help.

Households are pre-selected for participation according to the sampling design (see section 4.5) and sent a letter to inform them that they will be visited by an interviewer and asked to participate in the survey. The letter explains how the process works, including issues of confidentiality, and a little about how the survey results are used. A trained interviewer visits the selected household and at the door establishes how many eligible adults (permanent residents over the age of 16 years)

²⁵ In the 2010/11 sweep of the BCS a module was introduced to examine the victimisation of 10-15year olds but this was not available in 2008/09 and does not include questions on intimate partner violence.

reside in the household: one adult from those eligible to participate within the sampled household is then selected at random using the Kish grid method (Kish, 1949). Once selected no substitutions are allowed. If the selected adult is present the interviewer will seek to obtain their consent to conduct the survey with them. Alternatively the interviewer may have to return to the selected household several times in order to secure an interview. The selected respondent can refuse to participate or the interviewer may fail to contact them. Overall the response rate for the BCS 2008/09 was 76% once ineligible addresses, households where no one was contactable and refusals had been accounted for (Home Office, 2009: 2).

The BCS is commissioned by the UK Home Office and to date²⁶ has been analysed by Home Office statisticians who publish findings annually in a series of statistical bulletins, two of which contain annual estimates of the level and frequency of forms of violence against women: the *Crime in England and Wales: Findings from the British Crime Survey and Police Recorded Crimes* series; and (since 2005) the *Crime in England and Wales Supplementary Volume II: Homicides, Firearm Offences and Intimate Violence* series. In addition, the Home Office has commissioned special reports on particular sweeps, modules, or technical aspects of the BCS. For example, Walby and Allen's 2004 report on the 'domestic violence, sexual assault and stalking' module of the 2001 BCS; Myhill and Allen's 2002 report on the prevalence of rape and sexual assault of women; and Mirrlees-Black's 1999 study on domestic violence.

Data from the BCS is made available for research purposes in a number of separate datasets, which have different access requirements. The separate datasets then need

²⁶ The British Crime Survey transfers from the Home Office to the Office for National Statistics in April 2012.

to be merged manually into a single dataset for analysis purposes. Data from the BCS main questionnaire, which contains socio-economic and demographic data about respondents and their households, can be accessed via the ESDS (Economic and Social Data Service) website (<http://www.esds.ac.uk/findingData/bcrsTitles.asp>). In order to download the main dataset it is necessary to be registered with the ESDS: any member of a UK academic institution can register for free. The data can then be downloaded (once the terms and conditions for use have been read and agreed to) and there are no time limits on its use for a particular project. For the purposes of this thesis the data was downloaded into SPSS version 19.0 for *Windows*.

Data from the BCS self-complete module on domestic violence, sexual assault and stalking is only available on license by agreement of the UK Home Office. A formal application for the self-complete module data was successfully made for the purposes of this thesis and the data was subsequently downloaded into SPSS 19.0 for *Windows*. The license period covers the use of the data for two years, but an extension can be applied for (and was in October 2012).

A further special license dataset, the small area geographic, was also applied for and successfully obtained. This enables respondents to be located within smaller official administrative geographical areas, such as Lower Super Output Areas (LSOAs)²⁷, than would be possible using the main dataset which can only be disaggregated to the level of Police Force Area or Government Office Region. This dataset was also downloaded in SPSS 19.0 for *Windows*. Again the license period covers two years, but an extension can be applied for.

²⁷ LSOAs are part of a nested administrative geography for England and Wales. LSOAs, otherwise known as 'neighbourhoods' consist of around 400 households.

The two special license datasets require compliance with government best practice in the storage and use of confidential data. The research for this thesis was conducted in compliance with these requirements (see the ESDS *Guide to Good Practice: Micro data handling and security*: <http://www.esds.ac.uk/news/microDataHandlingandSecurity.pdf>).

Finally, the Home Office was contacted directly and asked to provide a dataset which contained their sample design variables in order to ensure the complex sampling design of the BCS could be taken account of in statistical analysis (see below section 4.5 for details). This was kindly provided directly by the Home Office, also in SPSS.

Across each of the four separate datasets, individual respondents are identifiable by the same unique code. The four separate datasets are merged into one working dataset in SPSS 19.0 for *Windows* using this unique code to sort and merge.

4.3 The analysis sample

The BCS 2008/09 dataset contains 46,286 respondents aged 16 years and over (there is no upper age limit for respondents to the main questionnaire), which is an increased sample size compared to previous sweeps of the survey. In 2008/09 a new sampling procedure was introduced in order that the findings of the BCS could be used to assess police force performance against Public Service Agreement targets. This required a minimum of 1,000 respondents per Police Force Area in England and Wales. In order to achieve this, a highly complex sampling design (discussed in section 4.5) was implemented which utilised a multi-staged stratified random sample with partial clustering design. This enabled both the required sample size per Police Force Area to be achieved whilst ensuring the survey was as cost effective as possible to implement.

Of the 46,286 respondents interviewed 55% (n=25,445) were female. The thesis question is specifically concerned with women's economic inequality and intimate partner violence against women and so for the substantive analysis, the responses of female respondents only are used. For the purposes of this thesis then the female respondents are disaggregated from the male respondents prior to the start of any analysis. This sample is further disaggregated, both because of the structure of the BCS and in order to obtain the most appropriate sample of female respondents on which to conduct the analysis: this step-by-step process is demonstrated in table 4.1. The final analysis sample is comprised of 12,920 female respondents aged 16-59 years who have been in one or more intimate partnerships since the age of 16 years almost definitely with a male partner.

Table 4.1: Disaggregation of the sampling frame for analysis

Total Sample Size of BCS 2008/09	46,286
Number of male respondents not included: ineligibility by sex	20,841
Number of female respondents not included: ineligibility to participate in the self-complete module by age (aged 60 years or over)	9,948
Number of female respondents not included: requiring interviewer help to participate	1,911
Number of female respondents never partnered (since the age of 16years)	93
Number of female respondents not included: self-identified sexuality which cannot support an assumption of a male perpetrator (lesbian n=125; data missing on sexuality n=448)	573
Base weight of female respondents for analysis	12,920

Data on the measure of intimate partner violence used in this thesis is contained in the self-complete module on 'domestic violence, sexual assault and stalking'. The construction of the self-complete module is such that not every female respondent from the main questionnaire sample is eligible to participate: only those respondents aged 16-59 years²⁸ are eligible. This means 9,948 female respondents who are included in the sample for the main face-to-face questionnaire are ineligible to participate because they are aged 60 years or above (note that there is no upper age limit for respondents participating in the main questionnaire). Of those female respondents eligible to participate in the self-complete module, some may refuse to do so or may be excluded from doing so because they require help to self-complete the module²⁹: in 2008/09 no female respondents refused to participate, but 1,911

²⁸ Part of the 2008/09 sweep included a trial which raised the age of participants to the self-complete module to 69years. After six months the impact of this was reviewed and the age limit returned to 59 years. This was because the 60-69 year old respondents required longer to complete the self-complete modules and were more likely to ask for interviewer help. The Home Office recommends all analysis on the 2008/09 BCS self-complete modules is limited to those respondents aged 16-59 years. Bolling, Grant and Donovan, 2009: 40.

²⁹ The technical literature on the BCS 2008/09 indicates that 'although respondents were encouraged to use the computer themselves [for the self-completion modules], if they did not want to use it for some reason, interviewers were allowed to administer the modules provided that no-one else was

required interviewer help and thus were ineligible to participate according to the BCS rubric³⁰.

The protocol in the literature for sampling women in relation to their experiences of intimate partner violence is to include only those women who have ever been in an intimate partnership (in early studies this was restricted to ever married women). This results in a further 93 female respondents being excluded from the sampling frame because they report having *never* been in an intimate partnership up to the point in time at which they participated in the survey.

One of the research questions in this thesis concerns intra-household economic inequality between a woman and her male partner in association with intimate partner violence (question eleven: chapter 2, section 2.7). Of the sample of women ever partnered since the age of 16 years who participated in the self-complete module, 95.8% (n=12,920) identify themselves as straight or bisexual, 1% (n=125) as gay and 3.2% (n=448) of respondents have data missing on their sexuality. Only those women self-identifying as straight or bisexual are included in the sample in order for the assumption of a male perpetrator to be robust.³¹

The number of female respondents for analysis then is: 12,920. These are women aged 16-59 years who participated in the self-complete module of the BCS 2008/09 on domestic violence, sexual assault and stalking and have been in at least one

present in the room. Where the self-completion part of the survey was administered by the interviewer the domestic violence, sexual assault and stalking modules were not completed, since these questions were considered too sensitive to be read out by the interviewer' (Bolling, Grant and Donovan 2009: 76).

³⁰ See above

³¹ Note: this is not to suggest that women in lesbian relationships do not experience intimate partner violence

intimate partnership since the age of sixteen, almost definitely with a male partner. From here on this subsample of female respondents is referred to as 'the sample' or as 'the respondents'.

Of the 12,920 female respondents in the analysis sample 763 disclose intimate partner violence in the past 12 months. Of these 763 female respondents, 554 report having exited their most recently violent relationship by point of survey; 132 female respondents report remaining in their most recently violent relationship at point of survey. In all cases these are adequate base weights for analysis.

However, it is at this stage it becomes apparent that this analysis sample cannot be utilised to consider intra-household effects of economic inequality between women and their male partners. The construction of the BCS 2008/09 enables the collection of data on the economic resources of a respondent and (where different to the respondent) the Household Reference Person (HRP). In order to analyse intra-household economic inequality and its association with intimate partner violence through the BCS a number of criteria have to be met. Female respondents must have experienced intimate partner violence once or more in the past 12 months and remain in that recently violent relationship at point of survey, they must be living in the same household as their violent partner, and their partner must be the designated HRP in order that socio-economic data is available for him, as well as the respondent. There are only ten such partnerships identifiable in the BCS 2008/09. This is an inadequate number on which to base quantitative analysis.

This means that the interconnections between women's economic inequality and intimate partner violence within the household cannot be examined as part of the

thesis question: *how is economic inequality associated with intimate partner violence against women*. Being unable to compare the inter- and intra-household effects of economic inequality and intimate partner violence limits the extent to which the thesis question can be addressed.

Note that: because of the age restriction in the self-complete module (16-59 years) only women of working-age are included in the analysis: from this point forward, the analysis findings then refer to women of working-age in the sample or national population.

Extrapolating to the national working-age population of women in England and Wales

The BCS sampling frame is designed to enable analysis findings to be extrapolated to the general population of England and Wales. The methods used to achieve this which take account of the complex sampling design of the survey are described later in this chapter (section 4.5). Leaving aside accounting for the complex sampling design, here it is noted that statistical analysis of the BCS is designed to produce findings from a sample which can be generalised to a non-observed wider population (women in England and Wales) by producing estimated parameters with an associated level of error variance. Where parameter estimates for the population are given the standard error of that estimate is reported alongside in parentheses.

The analysis sample of 12,920 female respondents (as constructed by the disaggregation of the full dataset) is extrapolated to an estimated 12,560,000 (170,000) women in England and Wales.

Note that all frequency tables reporting results for the BCS 2008/09 in the remainder of this chapter are computed in SPSS using the complex sample design menu utilising the Home Office complex sample design plan file. The unweighted base is reported alongside the estimated percentage for the national population and its associated standard error (SE) estimate. See Chapter 4 sections 4.5 *Complex sample design* and 4.7 *Analysis methods*.

4.4 Missing data

Missing data plagues analysts of survey datasets. Data can be missing at one or more stages of the survey and analysis process and can make a substantial difference to the findings and conclusions drawn from survey data.

Attempts to minimise missing data in surveys, particularly large-scale social surveys, have concentrated on improving survey design in order to elicit the maximum rate of ‘accurate’ responses from the sampled population, for example through improved wording of questions, or the recruitment and training of specialist interviewers (see *Measurement* section 3.4 for a fuller discussion of this). These approaches are resource intensive. Given increasing resource constraints, particularly Government funding, statistical techniques to deal with missing data after the collection stage, for example capture-recapture and zero-inflated count techniques, are receiving increasing attention. These may prove to be fruitful avenues for future exploration and analysis of survey data but currently they are still largely experimental and are not further discussed in this thesis.

In the BCS ‘missing data’ can be identified at three key stages: in the sampling frame of the survey; in the sampling frame of the self-complete module on domestic violence, sexual assault and stalking; and in responses to individual questions.

BCS sampling frame

The BCS, like most large-scale social surveys in the UK, relies on generating a sampling frame of respondents by selection from official registers of residential households. This means that all BCS respondents are adults (aged 16 years and over)

who are permanent members of a residential address in England or Wales³². In most cases this may be a reasonable and practical sampling frame to deploy when the intention is to generalise the findings from data analysis to the national population. However in the deployment of this sampling frame the BCS misses a number of important sub-populations of women, including: women in institutional accommodations such as prisons, mental health institutions, student accommodation, or army barracks; homeless women; and women staying temporarily with friends or family, for example having recently fled a violent household. There is some evidence that these sub-populations of women are likely to experience intimate partner violence at higher rates than women in the general population. For example estimates have been given of 50% of women in prison (HM Government, 2010: 26; Bromley Briefings, 2009; ICM survey for Smart Justice, 2007); between a third and 60% of homeless women (Kushel, Evans, Perry, Robertson and Moss, 2003; Estes and Weiner, 2001; Faludi, 1993: 8); and rates of domestic violence five times higher among military families than civilian families (www.refusingtokill.net). In addition, the sampling frame excludes women in refuge or other temporary 'safe' housing, all of whom have experienced intimate partner (or other forms of) violence against women.

The impact of these missing sub-populations is not accounted for by the BCS. Estimates of intimate partner violence from the BCS data are only applicable to women in the national working-age population as defined by location within a permanent residential household rather than to *all* women in England and Wales.

³² Eligible adults must conform to the following criteria: the address must be their only residence and they must have resided there at least six out of the past twelve months (Bolling, Grant and Donovan, 2009: 21)

The prevalence estimates of intimate partner violence for women in this population will be lower than those which would be generated if these other sub-populations of women were included within the sampling frame. Similarly, associations found between economic inequality and intimate partner violence in this thesis are only applicable to women in the 'national working-age population' and not to all women in England and Wales.

Moving on to the sample population itself (adults in permanent residence at a residential address), not every individual selected will complete a survey. For example it may not be possible to contact some individuals and others may refuse to participate. The likelihood of an individual refusing to participate is not random. There are certain demographic and geographical characteristics which make refusal more likely by some individuals than others: this is known as 'differential non-response'. Home Office analysis of differential non-response for the BCS identified three key factors which are likely to be correlated with higher refusal rates: age; gender; and urban or rural location, with young men living in single adult households being the most likely to refuse to participate (Bolling, Grant and Donovan, 2009: 100).

Differential non-response has been accounted for in the calculation of an individual level statistical weight which is available within the dataset and is part of the construction of the Home Office complex sample design plan file (see section 4.5). This gives the responses of, for example, those young men in single adult households who do participate, more weight than other types of respondents to compensate for

the fact that there will be fewer of them in the sampled population than there should be.

Domestic violence, sexual assault and stalking self-complete module sampling frame

Note that single-level binary logistic regression analysis is used in a number of models, the results of which are presented in this section: for a full explanation of the use of single-level binary logistic regression analysis in this thesis see section 4.7 later in this chapter - *Analysis methods*.

The sampling frame for the domestic violence, sexual assault and stalking self-complete module is not the same as that of the main questionnaire, nor is it the same as that of the other self-complete module in the 2008/09 sweep on drug use. Inclusion in the sampling frame of the domestic violence, sexual assault and stalking self-complete module is determined by two criteria: age; and the ability to complete the module unaided.

Only respondents aged 16-59 years are eligible to participate in the module. The Home Office argue that this age restriction is premised on the cost of survey administration and 'survey burden', with older respondents taking longer and requiring more help to complete these modules (Bolling, et al, 2009: 40). That there is some evidence suggesting older women are less likely to experience intimate partner violence than younger women (see for example Lloyd, 1997) has helped to uphold this convention. This convention is also found in other large-scale social surveys, for example, the International Violence Against Women Survey restricts the

sampling frame to respondents aged 18-69 years (Johnson, Ollus and Nevala, 2008), although others do not, for example, violence against women surveys in the U.S. and Canada have no upper age limit restriction.

Analysis of the BCS main questionnaire (on which there is no age restriction, but for which the face-to-face method, not the self-complete method, is used) finds that an estimated 0.3% (0.1) of women aged 60 years or over experienced force or violence by a household member in the past 12 months (domestic violence) compared to an estimated 0.4% (0.1) of women aged 16-59 years. This is an estimated 10,800 (5,000) women aged 60 years or over and an estimated 57,900 (10,000) women aged 16-59 years in England and Wales. However, whilst an estimated 0.4% of 16-59 year olds disclosed domestic violence to the face-to-face questionnaire, an estimated 6.7% (0.3) of the same group of respondents³³ disclose domestic violence (non-sexual) to the self-complete module. It is likely that a considerable proportion of this increase is due to the increased privacy and confidentiality of the self-complete method compared to the face-to-face method (Percy and Mayhew, 1997; Brittingham, Towangeau and Ward, 1998; and Couper and Rowe, 1996) and because of the question construction and breadth of the definition. For example, the face-to-face questionnaire asks respondents just one question which covers all household members as potential perpetrators, plus uses a narrow definition of 'violence' in restricting the range of potential acts respondents could have experienced to 'force' or 'violence'. By contrast, the self-complete module asks respondents separately

³³ Thirty-nine respondents in the analysis dataset disclose domestic violence to the face-to-face questionnaire; 33 of these also disclose to the self-complete module, i.e. 85% of respondents disclosing face-to-face also disclose on the self-complete (plus 919 additional respondents who do not disclose to the face-to-face).

about their experiences of intimate partner violence and then about their experiences of violence from other household members. The self-complete module also utilises a wide definition of domestic violence, asking respondents to choose from a list of eleven different acts they have experienced in the past 12 months, including economic and psychological abuse, threats and physical (non-sexual) violence (see table 3.3(a) in *Measurement*).

The odds of experiencing domestic violence, as disclosed to the face-to-face questionnaire, for these two groups of women (16-59 years or 60 years and over) are not found to be significantly different from each other (table 4.2). However, if women's age is considered as a continuous variable, rather than women being consolidated into two groups, then the odds of domestic violence reduce significantly as women get older (for every one year increase in age, the odds of experiencing domestic violence go down by 3%: table 4.3).

The result of this exclusion of older women from the self-complete module has two consequences. The first is that it is likely that a higher prevalence rate of intimate partner violence would be found if this group of respondents were to participate in the self-complete module. This is backed up by evidence from specialist studies focused on older women which found between 30% and 70% of violence against elderly women to have been perpetrated by their intimate partner (see for example: Lundy and Grossman, 2004; Teaster, 2002; and Moulton, Rovi, Furniss and Lasser, 1999). The second directly relates to the research agenda of this thesis, which is that older women are highly likely to have differential access to economic resources, particularly the source of those resources (for example pensions rather than

earnings) compared to younger women and therefore inclusion of older women in the population may have resulted in different findings between economic inequality and intimate partner violence.

Table 4.2: Relationship between age grouped and DV

	OR (exp(β))	SE (β)	Sig.	Odds of DV compared to women aged 16- 59 years
Intercept	.003	.506		-
Women 16-59 yrs	1.558	.526	.399	
Women 60yrs or over (ref cat)	-	-	-	
McFadden R ² =.002: AUC = .578				

Table 4.3: Relationship between age and DV

	OR (exp(β))	SE (β)	Sig.	Odds of DV for every one year increase in age
Intercept	.014	.538		-
Age	.967	.014	.016 *	3% lower
McFadden R ² =.022: AUC = .658				

Secondly, and unlike the other self-complete module of the BCS, respondents requiring interviewer help to participate in the domestic violence, sexual assault and stalking self-complete module are excluded from it (Bolling, et al, 2009: 40). Twelve percent of eligible female respondents required interviewer help to complete the module and were thus excluded, meaning they did not have the opportunity to respond to *any* of the questions in this module (n=1,911).

The Home Office, in its technical documentation (Bolling, et al, 2009), provides a breakdown of the characteristics of missing respondents from the self-complete modules of the BCS 2008/09, but this includes the ‘use of illegal drugs’ module as well as the ‘domestic violence, sexual assault and stalking’ module. Home Office

analysis found that older respondents; Black and Minority Ethnic (BME) respondents; and respondents in routine/manual occupations were more likely to need help with the self-complete modules compared to younger respondents, White respondents, and respondents in higher managerial, administrative and professional occupations. The most common reason for needing help was recorded as 'dislike of computers' (43%); language and literacy problems were a reason for 10% of respondents needing help; and a disability (including eyesight problems) was a reason for 9% of respondents needing help (Bolling, et al, 2009: 75-80).

Analysis of just the domestic violence, sexual assault and stalking self-complete module respondents and non-respondents (needed help to participate) also finds that the odds of being excluded because of requiring interviewer help to participate are significantly higher for older women compared to younger women (4% higher for every year increase in age); for non-White women compared to White women (almost double); and for women in routine/manual occupations compared to women in higher managerial and professional occupations (almost triple) (tables 4.4, 4.5 and 4.6 respectively).

Currently any bias inferred by this non-random sampling effect is not addressed by either the weighting regime of the BCS or through the application of the complex sampling design plan. Therefore it is not taken into account in the estimation of parameters or their variance estimators.

Table 4.4: Relationship between age and exclusion from self-complete module

	OR (exp(β))	SE (β)	Sig.		Odds of exclusion for every one year increase in age
Intercept	.027	.126			-
Age	1.041	.003	<.001	***	4% higher
McFadden R^2 = .032: AUC = .607					

Table 4.5: Relationship between ethnicity and exclusion from the self-complete module

	OR (exp(β))	SE (β)	Sig.		Odds of exclusion compared to White women
Intercept	.117	.040			-
Non-White women	1.948	.099	<.001	***	1.9 times greater
White women	-				
McFadden R^2 = .008: AUC = .528					

Table 4.6: Relationship between socio-economic class and exclusion from self-complete module

	OR (exp(β))	SE (β)	Sig.		Odds of exclusion compared to women in higher managerial, administrative & professional occupations
Intercept	.073	.072			
Routine/manual	2.869	.081	<.001	***	2.9 times greater
Intermediate	1.683	.100	<.001	***	1.7 times greater
Higher managerial, admin, prof (ref cat)	-	-			
McFadden R^2 = .028: AUC = .622					

Missing data from individual questions

As well as 'whole respondents' being missing, data can be missing from individual questions if respondents provide 'invalid' responses to some questions but not to others. The survey structure provides a number of 'valid' and 'invalid' responses to each question a respondent is asked. For every question there are two 'invalid'

responses: 'don't know / can't remember' and 'refused to answer'. When an invalid response is recorded data for that specific question is usually deemed to be 'missing'. Missing data from individual questions is particularly problematic where large numbers of respondents, or respondents with particular shared characteristics, do not provide a valid response. This can result in too little data to consider the findings robust or it can skew the findings toward the responses of the particular groups who do participate.

The analysis in this thesis adopts one of the most common³⁴, (but very simplistic), approaches to dealing with this type of missing data which is to remove invalid responses from the dataset prior to each round of analysis. This is the complete case analysis method.

The complete case analysis method deletes cases only from those statistical analyses that require the information. For example, if a respondent is missing information on variable A, the respondent's data could still be used to calculate other correlations, such as the one between variables B and C. The alternative commonly used method of a similar approach is list-wise deletion. In this method cases with missing data on any variable are excluded from all the analyses. Compared to list-wise deletion complete case analysis preserves more information for use in the analyses, but it does not provide a consistent base-weight. Therefore to note that the sample base-weight for individual analyses will differ (Tsikriktsis, 2005; Roth, 1994; Kim and Curry, 1977). Table 4.7 details the number and proportion of invalid responses for the

³⁴ The Home Office, in their analysis of the BCS employ the pair-wise deletion method (British Crime Survey Users Guide 2008/09: 13)

measure of intimate partner violence, economic factors and demographic variables utilised in the analysis.

The use of complete case analysis is a relatively simplistic approach to missing data. There are more complex approaches, such as imputation, which attempt to minimise the impact of missing data on analysis findings by analysing the responses there are and filling in (or imputing) the missing data with what analysis suggests is the most probable response. However, potentially more sophisticated approaches such as imputation methods rely on missing data being demonstrably missing at random (MAR) or missing completely at random (MCAR) with an ignorable missingness mechanism (Allison, 2002; Little and Rubin, 2002). In what circumstances missingness in large-scale social survey datasets can meet these missingness assumptions is an important, but statistically complex, piece of work which has yet to be comprehensively undertaken. It is not one that is attempted in this thesis.

Table 4.7: Quantifying the missing data from individual factors used in analysis

	Number of missing respondents	Percentage of full analysis dataset
Intimate partner violence in the past 12months	Composite measure supplied by the Home Office: data missing across the twenty-five components of this measure are not uniform.	
Earned income	1,354	10.5
Employment status	23	0.2
Social class (NS-SEC)	840	6.5
Household income	2,151	16.6
Housing tenure type	36	0.3
Official poverty status	Measure created from data from three BCS variables: number of adults in the household, number of children in the household, and household income.	
Neighbourhood income deprivation	1,046	10.1
Neighbourhood employment deprivation	1,046	10.1
Service provision	Variable created from Map of Gaps thesis (Coy, Kelly and Foord, 2009) at the Local Authority Area level – no missing data	
Age	0	0.0
Highest educational qualification	306	2.4
Children in household	0	0.0
Ethnicity (binary: White or non-White)	2	<.01
Single/two or more adult household	0	0.0

4.5 Complex sample design

What is a complex sample design and why does it matter?

A complex sample design is one which renders incorrect the two key properties of a simple random sample design: firstly that each individual in the population is independent of every other individual in the population, and secondly that all members of the population of interest have an equal chance of being selected as part of the sample. These two properties are commonly referred to as IID (independent and identically distributed). Statistical modelling techniques such as regression analysis operate on the assumption that the sample population being interrogated is IID: where these assumptions are violated, for example when a sampling design is complex, rather than a simple random one, parameter estimates and variance estimates of those parameters produced by statistical models are likely to be incorrect.

Any textbook on survey design will highlight the importance of selecting respondents using a simple random sample design to ensure that individuals selected from within that population are independent and identically distributed. When the population is subject to stratification³⁵ and/or clustering³⁶, the two main methods utilised in a complex sampling design, these assumptions no longer hold. Take for example clustering. A geographically dispersed population can be expensive to survey; by

³⁵ Stratification in sampling is the process of dividing members of the population into homogeneous subgroups before sampling. The strata should be mutually exclusive and every person in the population must be assigned to one (and only one) stratum. The main objective of stratification is to improve precision.

³⁶ Clustering is the process in which the population is split into smaller groups (cluster) where each cluster is a miniature representation of the whole population. Again clusters are mutually exclusive and cover everyone in the population. The main objective of clustering is to reduce costs by increasing sampling efficiency.

placing groups of individuals within clusters which mirror the whole population but are within specific geographical areas, a sample can be taken from some but not all clusters. Cost savings can be made because an interviewer for example has to only travel within a cluster and not across the site of the whole population. However, now, there are a number of respondents for whom the probability of being selected is zero and thus the assumption of the sample being identically distributed across the population is no longer valid. Secondly, within a cluster two individuals may also be more alike than two individuals located at random across the population, even when key characteristics have been matched across the clusters so that the population within each cluster attempts to mirror that of the whole population. For example if clusters are premised on households, then the socio-economic and demographic characteristics of two households can be the same, but, even so, two individuals within the same household will typically be more alike than two individuals randomly located in households across the whole population. In this case the assumption of independence is no longer valid either.

So complex sampling designs which utilise stratification and/or clustering violate the assumptions under which statistical models operate because the sample is no longer IID. The main effect of this concerns the estimates of variance produced by a statistical model. Analytical modelling methods such as binary logistic regression produce estimates for the unobserved population from the information gathered about the observed sample (based on the assumption that the distribution of the sample within the population is IID). Failing to account for the fact that this assumption has been violated can result in an over- or under-estimation of the variance between the observed data and the results predicted by the model.

This particularly matters when the findings are used for hypothesis testing because this requires the use of the parameter estimate along with its standard error to calculate a test statistic which is compared to a distribution, such as the Normal or chi-square, in order to ascertain the p-value (probability-value or Significance)(see equation (2)). The null hypothesis states that the coefficients in the regression equation take the value zero. Put more simply, the p-value is used to test whether the null hypothesis (that any differences observed in the data are due to chance) can be rejected.

If the complex sampling design causes the standard errors of parameter estimates to be under-estimated (i.e. it produces standard error estimates which are too small), then it may lead to the rejection of the null hypothesis when in fact, differences observed in the data *are* due to chance and not to any ‘real’ effect. The complex sampling design of the BCS 2008/09, compared to a simple random sample, causes the under-estimation of standard errors of parameter estimates. Therefore analysis which does not account for this could potentially cause the rejection of the null hypothesis, when in fact it should not be rejected.

Accounting for the complex sampling design in analysis of the BCS 2008/09

The sampling design of the BCS is a complex one incorporating both stratification and clustering in order to achieve the required sample size of 1,000 respondents per Police Force Area in the most cost effective way. Full details of the complex sample design can be found in Bolling, Grant and Donovan (2009), but in essence it includes three different clustering strategies based on population density within Police Force Areas (PFAs):

1. In the most densely populated parts of a given PFA an un-clustered sample of addresses is taken – stratum A.
2. In the medium population density parts of a given PFA a two-stage design is implemented: first sampling middle super output areas (MSOAs) as the primary sampling unit (PSU), then selecting 32 addresses within each PSU – stratum B.
3. In low population density parts of a given PFA, a three-stage design is implemented: sampling MSOAs, then selecting two lower super output areas (LSOAs) within each sampled MSOA (the PSU); 16 addresses from each PSU are then selected – stratum C.

Plus, the sampling design also includes differential stratification by PFA.

The bulk of analysis in this thesis is conducted in SPSS 19.0 for *Windows* unless stated as being conducted in *MLwiN 2.2*³⁷. The complex sample design is accounted for in the analysis using SPSS by the Home Office complex sample design plan file. This is the ‘gold standard’ as the design plan was created by Home Office statisticians specifically for use with the 2008/09 survey data. The plan file was provided for use in this thesis in response to a direct request from the author. The Home Office complex design plan file takes account of the effects of the clustering and stratification from the sampling design, as well as the effects of differential non-response (see section 4.4). Analysis is run through the SPSS complex sampling menu which incorporates the plan file. All results are given at the level of the national

³⁷ *MLwiN* is a piece of software developed at Bristol University which is specifically designed to analyse multilevel data (Centre for Multilevel Modelling: <http://www.bristol.ac.uk/cmm/software/MLwiN/>). Data from SPSS can be ‘read into’ *MLwiN*.

working-age population, not the sample population, and thus parameter estimates are generated with an accompanying error variance estimator (standard error).

All frequency estimates, correlations, and single-level binary logistic regression modelling is conducted in SPSS 19.0 through the complex design menu utilising the Home Office complex sample design plan file.

The complex design menu of SPSS 19.0, however, cannot be used to specify hierarchical models with a binary dependent variable. These models have to be specified using alternative software: *MLwiN* 2.2 is used. The Home Office design plan file cannot be used in *MLwiN* 2.2, so the complex sample design has to be accounted for in alternative ways: two are used in this thesis. The first is the ‘design-based approach’, which specifies the design variables directly into the model to account for the effects of clustering (*psuid*³⁸) and stratification (*fin_stra2*³⁹) on the variance estimates. The second uses the ‘design effect approach’. The Home Office provides a number of design effect estimates for specific variables available within the dataset. However, a design effect estimation is not provided for any of the measures of intimate partner violence in the BCS 2008/09. Instead, a design effect estimate of 1.2 for use in analysis with any BCS 2008/09 variable is provided (Home Office, 2009: 9). To note though, that neither of these methods account for differential non-response. Very simply, the model-based approach argues that including the design variables in the specification of a model results in non-biased error estimates (see for example: Crockett 2011; Rafferty 2011; Fienberg 2009; Sterba 2009; Snijders and Bosker 1999;

³⁸ The *psuid* variable is the Primary Sampling Unit variable: these are Middle Super Output Areas in the BCS 2008/09.

³⁹ Stratification is done in the BCS 2008/09 using Police Force Areas (PFAs).

and Pfeffermann et al 1998). Snijders and Bosker (2011), for example, argue that if the predictor variables in the model are represented differently in the sample than their distribution in the population, it does not necessarily follow that there must be bias in the estimators (standard errors) of the parameters, but rather that the parameters are biased *only* if the distribution of the residuals is affected by the complex sampling design: i.e. if the design is 'informative'. The design of the BCS 2008/09 is 'informative' and causes an under-estimation of error variance.

In this approach then, it is argued that a correctly specified model will produce residuals which are independent of the sampling design, but that a model can only be considered to be correctly specified when the design variables for any stratification and/or clustering are explicitly included in the specification of the model (rather than accounted for through the inclusion of weight variables for example). Proponents of this method argue that when a model is fully (correctly) specified, including the design variables, then the residuals in the model are independent of the sampling design. The sampling design can then be considered 'non-informative', and so the estimators (standard errors) of the parameters will not be biased; i.e. the error variance estimates will be of the correct magnitude.

The design variables need to be specified in the model as a random effect. This allows fluctuation over all units in the population and means that the unit observed depends on chance: this is known as 'exchangeability'. Exchangeability refers to the fact that any unit in the population could have taken the place of any observed unit in the sample; to note that it is the residuals (error terms) associated with these units which are assumed to be exchangeable (Snijders 2005: 664).

There are two design variables for the BCS 2008/09, one for clustering (psuid) and one for stratification (fin_stra2). A direct request was made to the Home Office to provide these two variables for use in this thesis. The Home Office provided the variables in SPSS, which were then merged into the analysis dataset. In specifying models in *MLwiN*⁴⁰, where the Home Office complex sample design plan file cannot be used and the model-based approach is instead used to account for the effects of the complex design, 'psuid' and 'fin_stra2' are specified directly into the models as random effects.

The second method used to take account of the effects of the complex sampling design is the 'design-effect/design-factor' method. This is a statistical measure designed to provide a figure by which standard errors generated under the assumption of a simple random sample are multiplied in order to correct the standard error size for the effects of the complex sampling design. The Design Effect can be considered to be the ratio of the design-based variance of an estimate θ (from a complex sample) to the variance of an estimate θ from a simple random sample of the same size.

$$\text{Design Effect} = \text{Var} (\theta_{\text{design}}) / \text{Var} (\theta_{\text{srs}}) \quad (1)$$

The square root of the Design Effect gives the Design Factor (Deft): this brings the calculation back to the same scale as standard errors. The Home Office technical manual on the BCS 2008/09 provides a specific design factor for a number of the more commonly analysed variables; as stated above, none of the self-complete module measures of intimate partner violence are allocated a specific design factor

⁴⁰ Data can be 'read into' MLwiN from SPSS

in the technical manual. However, a design factor of 1.2 is given in the technical manual for use with any variable which has not been designated a specific design factor of its own (although it is referred to as the design effect in the Home Office manual even after being scaled) (Home Office, 2009: 9).

In specifying models in *MLwiN* using the design effect method, the design variables are not specified in the model, but the error variance estimates of the parameter estimates are obtained by multiplying by 1.2, and the Wald test statistic calculated using the new standard error estimates and the parameter estimate (see figure (2)). The Wald test statistic is then compared to the chi-square distribution at 1 degree of freedom using Excel to find the p-value (significance).

$$Wald\ test\ statistic = \left(\frac{parameter\ estimate}{SE\ of\ parameter\ estimate} \right)^2 \quad (2)$$

Note that the design-based and design effect methods used to account for the complex sample design in *MLwiN* are less robust than the use of the Home Office design plan file. As the effect of the informative sampling design in the BCS 2008/09 is the under-estimation of error variance, extra caution is taken in identifying significant relationships in the *MLwiN* models. Thus findings from models specified in *MLwiN* take a cut-point of significance at the 1% level rather than the 5% level (i.e. there is a one percent or less probability that the associations observed in the data are due to chance).

4.6 Operationalising economic inequality through the BCS 2008/09

This thesis is concerned with economic inequality and intimate partner violence against women. In order to analysis this association, the concept of economic inequality needs to be operationalised. Economic inequality is the disparity in the distribution of, and access to, economic resources within a population. The concept is operationalised in this thesis by using nine individual factors to represent a range of different economic resources. These nine factors are organised into three types by their unit of analysis:

Own/individual

- Women's current employment status
- Women's earned income
- Women's socio-economic class

Household

- Household income
- Housing tenure type
- Household poverty status

Neighbourhood

- Level of neighbourhood income deprivation
- Level of neighbourhood employment deprivation
- Specialist violence against women service provision

In referring to economic resources this is a two-way definition which equally refers to women's lack of economic resources. For example, a high level of earned income suggests greater economic resources than a low earned income; residing in social rented housing suggests a lack of economic resources compared to residing in owner/occupier housing. Women with less economic resources can be considered to be poorer than those women with more economic resources. The factors utilised are summarised in table 4.8.

Table 4.8: Factors representing economic resources

Economic resource factor	Categories	Notes
Women's current employment status	Unemployed Economically inactive Employed	All respondents are classified within one of these three categories.
Women's earned income	WI: Economically inactive (£0) WI: Unemployed (£0) WI: Low (£1-£9,999) £10,000-£19,999 WI: Above average (£20,000 or more)	In the original BCS variable only those respondents in employment are included, with unemployed and economically inactive women categorised as 'missing'. A new variable is constructed which includes all economically inactive and unemployed women, allocating them an earned income of £0 at point of survey
Women's socio-economic class	Class I: Never worked & long-term unemployed Class II: Semi-routine & routine occupations Class III: Lower supervisory and technical occupations Class IV: Small employers and own account workers Class V: Intermediate occupations Class VI: Higher managerial, administrative & professional occupations	The NS-SEC six category system of socio-economic class. Respondent is classified based on their current or last occupation. For the purposes of analysis the class order is reversed in this thesis in order that women in every other class can be compared to higher managerial, administrative & professional women
Household income	Low HH (less than £10,000 per annum) HH: £10,000-£29,999 Above average HH (£30,000 or more per annum)	This includes income from all adult members of a household
Housing tenure type	Social rented housing Private rented housing Owner/occupier housing	

Household poverty status	At or below the poverty threshold Above the poverty threshold	Constructed for the purposes of this analysis from data on household income and household structure and the 60% median household thresholds for official poverty status
Neighbourhood income deprivation	10% most income deprived LSOAs All other LSOAs	Original measure in the dataset is deciles: the categories have been re-constructed to create a binary variable for the purposes of analysis here. English and Welsh deprivation indices differ slightly in their construction: the English index is utilised in the analysis reducing the sample size (N=11,874)
Neighbourhood employment deprivation	10% most employment deprived LSOAs All other LSOAs	As above for neighbourhood income deprivation
Specialist violence against women service provision	One or more services Zero services	Data supplied at the level of the Local Authority Area by the Map of Gaps team (Coy, Kelly and Foord, 2009). Data is read into the BCS 2008/09 dataset using the Excel 'lookup' function.

In addition, there are a number of demographic characteristics of women which are significantly correlated with the factors representing economic resources, i.e. these demographic characteristics have a significant relationship with the economic resource factors irrespective of whether those economic resources are significantly associated with intimate partner violence for working-age women in England and Wales: the effect of these needs to be accounted for. These demographic characteristics are: age; highest level of education; children in the household; and ethnicity. The detail of these demographic factors are summarised in table 4.9.

Table 4.9: Factors representing demographic characteristics

Demographic factor	Categories	Notes
Age	Between 16 – 59 years	
Highest level of education	None GCSEs A/AS-levels Degree or diploma	
Children in household	Yes No	Children under the age of 16 years resident in the household
Ethnicity	Non-white White	The number of non-White respondents in the analysis sample is too small to enable robust disaggregation across multiple ethnicities

Tables 4.10(a) to 4.10(d) demonstrate the significant correlations between each of the demographic characteristics (age; highest level of education; children in the household; and ethnicity) with each of the nine factors representing economic resources (current employment status; earned income; socio-economic class; household income; housing tenure; household poverty status; neighbourhood income and employment deprivation; and specialist violence against women service provision). Tests of independence are computed in SPSS and run through the complex design menu utilising the Home Office complex sample design plan file. Independence is tested at the level of the national working-age population. Findings are reported for the chi-square statistic; the adjusted F statistic (which is a second order variant of the Rao-Scott chi-square statistic); the two-degrees of freedom; and the p-value (significance). The p-value is based on the adjusted F and its degrees of freedom.

For example, table 4.10(a) shows that the relationship between age and current employment status; earned income; socio-economic class; household income;

housing tenure; household poverty status; and neighbourhood income deprivation is highly significant ($p<.001$), that the relationship between age and neighbourhood employment deprivation is still significant ($p=0.047$) but less so than for the above, but that there is no relationship between age and specialist service provision in this population. Table 4.10(b) shows that there is also a highly significant relationship between the same economic resource factors mentioned above and highest level of education; however, in this case there is also a highly significant relationship between highest level of education and neighbourhood employment deprivation ($p<.001$) and between highest level of education and specialist service provision ($p=.006$).

Table 4.10(a): Test of independence: age * economic resource factors

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	933.459	6.550	51.759	116095	<.001	***
Earned income	2071.70	7.084	90.798	203660	<.001	***
Socio-economic class	1059.271	2.969	100.060	224435	<.001	***
Household income	492.374	2.421	74.043	166079	<.001	***
Housing tenure type	2192.447	15.304	53.560	120134	<.001	***
Household poverty status	242.399	3.478	33.065	74165	<.001	***
LSOA income deprivation	173.286	2.243	22.646	50795	.001	***
LSOA employment deprivation	105.572	1.483	28.241	63344	.047	*
Service provision	120.690	1.361	35.024	78558	.075	

Table 4.10(b): Test of independence: highest level of education (none; GCSE; A/AS-Level; Degree/diploma) * economic resource factors

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	637.646	52.542	5.691	12764	<.001	***
Earned income	1969.435	81.401	11.222	25170	<.001	***
Socio-economic class	2950.550	106.420	13.202	29612	<.001	***
Household income	1389.161	93.182	8.655	19414	<.001	***
Housing tenure type	963.438	76.471	5.605	12572	<.001	***
Household poverty status	503.175	113.663	2.931	6575	<.001	***
LSOA income deprivation	220.791	32.164	2.615	5867	<.001	***
LSOA employment deprivation	290.312	53.489	2.973	6668	<.001	***
Service provision	29.016	3.240	2.926	6562	.006	**

Table 4.10(c): Test of independence: children in the household (children or no children) * economic resource factors

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	207.952	49.004	1.992	4468	<.001	***
Earned income	491.026	63.837	3.893	8731	<.001	***
Socio-economic class	155.099	17.745	3.799	10765	<.001	***
Household income	126.457	25.619	2.959	6637	<.001	***
Housing tenure type	225.168	53.192	1.966	4410	<.001	***
Household poverty status	410.453	263.134	1.000	2243	<.001	***
LSOA income deprivation	40.708	13.955	1.000	2243	<.001	***
LSOA employment deprivation	24.030	13.164	1.000	2243	<.001	***
Service provision	3.012	1.390	1.000	2243	.239	

Table 4.10(d): Test of independence: ethnicity (non-White or White) * economic resource factors

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	45.566	9.563	1.921	4308	<.001	***
Earned income	53.927	5.476	3.797	8517	<.001	***
Socio-economic class	173.861	15.812	3.638	10402	<.001	***
Household income	80.120	11.041	2.809	6302	<.001	***
Housing tenure type	109.812	25.586	1.901	4267	<.001	***
Household poverty status	43.133	27.541	1.000	2243	<.001	***
LSOA income deprivation	313.121	153.106	1.000	2243	<.001	***
LSOA employment deprivation	3.417	1.691	1.000	2243	.194	
Service provision	79.071	19.479	1.000	2243	<.001	***

Women's own/individual economic resources

Women's current employment status in the BCS is sub-divided across three categories: unemployed; economically inactive; and employed. An estimated two-thirds of women are employed and over 20% are economically inactive, leaving just under 3% categorised as unemployed (table 4.11). The figures between women's earned income and employment status are not exactly the same because of the different quantities of missing data. Women's earned income has a much higher percentage of missing data compared to employment status (10.5% and 0.2% of the sample respectively) (table 4.7).

Women's Earned income is constructed in the BCS as personal earnings and includes only those respondents in employment at point of survey. For the purposes of analysis in this thesis, the BCS variable is re-constructed to also include unemployed and economically inactive respondents positioned as having an earned income of £0 at point of survey. In addition, the number of categories is reduced to enable comparison between low (less than £10,000 per annum), below average (£10-£19,999 per annum) and above average (£20,000 or more per annum) earned incomes in association with intimate partner violence (this has been done by previous studies, see Walby and Allen, 2004) (table 4.12).

Note that in 2008 the median hourly earnings for women were £10.91: assuming a 38hour working week and 52 week working year, this is an annual median income of £21,560 (Office for National Statistics: www.ons.gov.uk/ons/); therefore above average earnings are set at £20,000 or more per annum.

Women's socio-economic class is the official National Statistics Socio-economic Classification System (NS-SEC)⁴¹. NS-SEC can be deployed as a nine, six or three category variable: the six category form is used in this analysis. Respondents are automatically allocated to a category based on their current or last occupation (Office for National Statistics, 2010).

The analysis in this thesis utilises the six class system. For the purposes of analysis the ordering of the classes is reversed so that higher managerial, administrative and professional occupations are the reference category and the odds of intimate partner

⁴¹ See: <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html>

violence for women located in any other class can be compared to women located in this class (class VI for analysis purposes):

- Class I: Never worked and long-term unemployed
- Class II: Semi-routine and routine occupations
- Class III: Lower supervisory and technical occupations
- Class IV: Small employers and own account workers
- Class V: Intermediate occupations
- Class VI: Higher managerial, administrative and professional occupations

The largest proportion of women located in any one class is the 40% of women located in class VI, followed by 27% of women located in the first employed class (semi-routine and routine occupations) (table 4.13).

Table 4.11: Distribution of the population by current employment status

N=12,897	Estimated % (nat. population)	SE
Unemployed	2.7	(0.2)
Economically inactive	22.5	(0.5)
Employed	73.8	(0.5)
Total	100.0	-

Table 4.12: Distribution of the population by earned income

N=11,566	Estimated % (nat. population)	SE
PE: £0 (economically inactive)	25.3	(0.6)
PE: £0 (unemployed)	3.0	(0.2)
PE: £1-£9,999 (low)	19.9	(0.5)
PE: £10,000-£19,999 (below average)	23.2	(0.6)
PE: £20,000 or more (above average)	27.6	(0.6)
Total	100.0	-

Table 4.13: Distribution of the population by socio-economic class

N=12,080

	Estimated % (nat. population)	SE
Class I: Never worked & long-term unemployed	2.6	(0.2)
Class II: Semi-routine & routine occupations	26.8	(0.5)
Class III: Lower supervisory & technical occupations	5.8	(0.3)
Class IV: Small employers & own account workers	5.6	(0.3)
Class V: Intermediate occupations	19.1	(0.5)
Class VI: Higher managerial, administrative & professional occupations	40.2	(0.6)
Total	100.0	-

Household economic resources

Household income in the BCS is calculated from the incomes of all adults in the household. The variable, for the purposes of analysis in this thesis, has been re-constructed into three categories to enable analysis to compare the associations with intimate partner violence for low household incomes (less than £10,000 per annum); below average household incomes (£10-£29,999 per annum); and above average household incomes (£30,000 or more per annum). This approach has been implemented in previous studies (see Walby and Allen, 2004) (table 4.14).

Note that the national average household income (for all households) in 2008 was approximately £30,000 (Office for National Statistics: www.ons.gov.uk/ons/).

Household income is also found to be significantly correlated to the number of adults in the household (table 4.15): 85% of working-age women in the national population are located in households with two or more adults (table 4.16).

Housing tenure type in the BCS is divided into three categories: social rented (council and housing association); private rented; and owner/occupier. Two-thirds of women are located in owner/occupier housing.

Household poverty status is a factor constructed and added to the BCS for the purposes of this thesis. The most commonly utilised measure of poverty status is an income-based one which considers the household, rather than the individual's income. In the UK a household is officially deemed to be in poverty if its income is 60% or less of the average (median) British household income in that year. In 2008/09, the 60% threshold was worth: £119 per week for single adult households with no dependent children; £206 per week for a couple with no dependent children; £202 per week for single adult households with two dependent children under 14; and £288 per week for a couple with two dependent children under 14 years. These income levels are measured after income tax, council tax and housing costs have been deducted, where housing costs include rents, mortgage interest (but not the repayment of principal), buildings insurance and water charges. They therefore represent what the household has available to spend on everything else it needs, from food and heating to travel and entertainment. In 2008/09, an estimated 13½ million people in the UK were living in households below the 60% median income threshold. This is around a fifth (22%) of the population (The Poverty Site: www.poverty.org.uk/).

In the analysis population the estimated 10% of women in households at or below the poverty threshold is lower than the national estimate of 22%. This is in part due to the way the factor has been constructed and in part due to the exclusion of some key groups of poor women, particularly single female pensioners. There is also a relatively high rate of missing data from the household income factor which is likely to have an additional impact (table 4.7).

The household poverty status factor was constructed using data from several BCS variables including household income, number of adults in the household (single or couple) and the number of children in the household (children or no children). The sample was initially sub-divided into four groups to represent those for which different weekly threshold incomes are officially given: single adult households with and without children and households with two or more adults, with and without children. Each group was then split into those with a household income at or below the threshold for that group and those with a household income above that threshold. This resulted in four groups each of which was split in two for those respondents in households at or below the poverty threshold and those in households above the poverty threshold (table 4.18). A single variable was then created by amalgamating these four groups into a single group whose respondents were split into two categories (households at or below the poverty threshold and households above the poverty threshold) (table 4.19).

Table 4.20 shows that whilst 10% of the total analysis population are located in households at or below the poverty threshold, this is not evenly distributed across the four household types. For example, over 40% of single adult (female-headed) households with children are located at or below the poverty threshold, compared to less than 5% of households with an adult couple but no children.

Table 4.14: Distribution of the population by household income

N=12,080	Estimated % (nat. population)	SE
HH: less than £10,000 (low)	10.3	(0.4)
HH: £10,000-£29,999	32.7	(0.6)
HH: £30,000 or more (above average)	57.0	(0.7)
Total	100.0	-

Table 4.15: Test of independence⁴²: Household income * single or two or more adult household

Chi-square	Adjusted F.	df1	df2	Sig.
1717.637	649.265	1.875	4205	<.001

Table 4.16: Distribution of the population by number of adults in the household

N=12,920	Estimated % (nat. population)	SE
Two or more adult household	85.5	(0.4)
Single adult household	13.5	(0.4)
Total	100.0	-

Table 4.17: Distribution of the population by housing tenure

N=12,884	Estimated % (nat. population)	SE
Social rented	13.2	(0.5)
Private rented	19.4	(0.6)
Owner/occupier	66.3	(0.7)
Total	100.0	-

Table 4.18: Constructing the poverty threshold

	Official threshold (weekly - £)	Official threshold (annual - £)	BCS 2008/09 household income bands (at or below threshold)
Single adult – no children	119	6,188	£4,999 or less
Single adult - children	202	10,504	£9,999 or less
Couple – no children	206	10,712	£9,999 or less
Couple - children	288	14,976	£14,999 or less

⁴² The test of independence is carried out in SPSS using the complex design plan so that the results can be extrapolated to the general population. The test statistic is the adjusted F which is a variant of the second-order Rao-Scott adjusted chi-square statistic. Significance is based on the adjusted F and its degrees of freedom.

Table 4.19: Distribution of the population by household poverty status

N=12,080	Estimated % (nat. population)	SE
At or below poverty threshold	9.6	(0.4)
Above poverty threshold	90.4	(0.4)
Total	100.0	-

Table 4.20: Estimated number and frequency of respondent households at or below the poverty threshold by each of the four groups

	No. in the sample (N=10,769)	Estimated % (nat. population)	SE
Single adult – no children (£4,999 or <)	175	12.2	(1.3)
Single adult – children (£9,999 or <)	645	42.9	(1.5)
Couple – no children (£9,999 or <)	134	3.7	(0.6)
Couple – children (£14,999 or <)	357	13.4	(0.8)
Total (households at or below the poverty threshold)	1,311	9.6	(0.4)

Neighbourhood economic resources

Neighbourhood income deprivation and *neighbourhood employment deprivation* factors are part of the BCS 2008/09 dataset. They allocate each respondent to a decile ranging from most deprived to least deprived based on the income or employment characteristics of their 'neighbourhood'. Here neighbourhood is defined as the Lower Super Output Area (LSOA).

LSOAs are part of the official administrative geography of the UK. There are 32,844 LSOAs in England and 1,909 in Wales. Each LSOA contains around 400 households⁴³. Deprivation indices in England and Wales differ slightly in their construction (Payne and Abel, 2012) and thus the whole sample cannot be analysed together. The English

⁴³ See: <http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/census/super-output-areas--soas-/index.html>

variable is used in the analysis. This reduces the analysis sample size to 11,874 (from 12,920).

The original factor in the BCS 2008/09 dataset for both LSOA income and employment deprivation was divided into ten categories (deciles). For the purposes of analysis in this thesis, the two neighbourhood deprivation factors are reconstructed into two category factors: the 10% of most income / employment deprived LSOAs and all other LSOAs (tables 4.21 and 4.22).

Specialist violence against women service provision: a factor was constructed and added to the dataset for the purposes of this thesis. The data was supplied by the Map of Gaps (Coy, Kelly and Foord, 2009) project team. The factor is constructed to divide the sample population into those who are located in a Local Authority Area with one or more specialist violence against women services (n=8,778) and those located in a Local Authority Area with no specialist violence against women services (n=4,142) (table 4.23). The number of violence against women services in any one Local Authority ranges from zero to sixteen and includes: Black, Minority Ethnic and Refugee specialist services; domestic violence services; female genital mutilation (FGM) services; perpetrator programmes; prostitution and sexual exploitation services; Rape Crisis Centres; Sexual Assault Referral Centres (SARCs); Specialist Domestic Violence Courts (SDVCs); and sexual violence services. The size of the service (for example the number of staff; size of client base; annual turnover; or number of projects/programmes being delivered) does not impact on the service count: each service, irrespective of its size or complexity, is counted once.

Table 4.21: Distribution of the population by neighbourhood income deprivation

N=11,874	Estimated % (nat. population)	SE
10% most income deprived LSOAs	8.9	(0.5)
Other 90% of LSOAs	91.1	(0.5)
Total	100.0	-

Table 4.22: Distribution of the population by neighbourhood employment deprivation

N=11,874	Estimated % (nat. population)	SE
10% most income deprived LSOAs	8.8	(0.5)
Other 90% of LSOAs	91.2	(0.5)
Total	100.0	-

Table 4.23: Distribution of the population by specialist VAW service provision

N=12,920	Estimated % (nat. population)	SE
One or more VAW services	64.0	(0.8)
Zero VAW services	36.0	(0.8)
Total	100.0	-

Factors representing demographic characteristics of women which significantly correlate with economic resources

As discussed at the beginning of this section, there are a number of factors representing the demographic characteristics of women which are significantly correlated to the factors representing economic resources (see table 4.10(a) to 4.10(d)). These are: age; highest level of education; children in the household; and ethnicity (tables 4.24 to 4.27). As the demographic characteristics of women are significantly correlated with economic resources, for example young children in the household is associated with economic inactivity, they need to be accounted for in models seeking to explicate the effects of economic resources on intimate partner violence. This enables any effects found, after taking account of demographic factors, to be reasonably concluded to be due to economic resources.

The sample age range is restricted to those aged 16-59 years: the estimated mean age for the population (within this constraint) is 37 years (table 4.24).

The highest proportion of the population allocated to any one category of highest level of education is women educated to degree/diploma level (40%) (table 4.25).

Around half (43%) of women have children aged 16 years or younger in the household (table 4.26).

An estimated 10% of the population are 'non-White' (table 4.27)⁴⁴.

Table 4.24: Distribution of the population by age

N=12,920	Estimated % (nat. population)	SE
16-19	9.3	(0.4)
20-24	11.4	(0.5)
25-29	11.8	(0.4)
30-34	10.9	(0.3)
35-39	12.4	(0.4)
40-44	13.3	(0.4)
45-49	11.7	(0.4)
50-54	9.9	(0.3)
55-59	9.4	(0.3)
Total	100.0	-
Mean Age	36.95	(.182)

Table 4.25: Distribution of the population by highest level of education

N=12,614	Estimated % (nat. population)	SE
None	10.5	(0.4)
GCSEs	29.6	(0.5)
A/AS-level	18.5	(0.5)
Degree/diploma	41.4	(0.7)
Total	100.0	-

⁴⁴ It is possible to refine the ethnicity of women more precisely than the binary categories of 'White' and 'non-White', but the number of non-White respondents in the analysis dataset is small (n=941), so when this is further sub-divided into a broader range of ethnicities, the unweighted base numbers for analysis become too small to generate robust and meaningful results.

Table 4.26: Distribution of the population by children in the household

N=12,920

	Estimated % (nat. population)	SE
No children in HH	56.7	(0.6)
Children in HH	43.3	(0.6)
Total	100.0	-

Table 4.27: Distribution of the population by ethnicity

N=12,918

	Estimated % (nat. population)	SE
Non-White	10.1	(0.6)
White	89.9	(0.6)
Total	100.0	-

4.7 Analysis methods

Frequency tables

Frequency tables are computed in SPSS using the complex design menu utilising the Home Office complex sample design plan file. The unweighted base is reported alongside the estimated percentage for the national working-age population and its associated standard error (SE) estimate.

Correlations / Test of independence

Tests of independence between groups are computed in SPSS and run through the complex design menu utilising the Home Office complex sample design plan file. Independence is then tested at the national working-age population level. Findings are reported for the chi-square statistic; the adjusted F statistic (which is a second order variant of the Rao-Scott chi-square statistic); the two sets of degrees of freedom; and the p-value (significance). The p-value is based on the adjusted F and its degrees of freedom.

The level of significance for the rejection of the null hypothesis is additionally indicated at three levels using the 'star' convention: * ≤ 0.050 ; ** ≤ 0.010 ; *** ≤ 0.001

Binary logistic regression analysis (single-level and multilevel)

Binary logistic regression analysis is a quantitative method used to predict the probability of a binary outcome. The analysis in this thesis utilises a composite measure of intimate partner violence which has a binary outcome (the dependent variable). Female respondents are asked whether they have experienced one or

more of twenty-five acts of domestic violence, sexual assault or stalking by a current or ex-intimate partner (including dating partner) in the past 12 months. This composite measure used in the analysis allocates the respondents in the sample population to one of two categories: 0=no intimate partner violence in the past 12 months or 1=one or more incidents of intimate partner violence in the past 12 months. These are the results for the observed population. However, the observed population is a very small proportion of the total population of working-age women in England and Wales (around 0.1%). Being able to extrapolate the findings for the sample population to the national working-age population of women in England and Wales is the goal.

The ability to draw analytic inferences from sample data is based largely on R.A. Fisher's (1956) development of the inferential framework which relies on modelling to mimic random sampling even when empirical random sampling has not been carried out. Fisher recognised that the observed y-values (for example experienced intimate partner violence or not) of sampled data are not meaningfully related to unobserved cases in the sampling frame nor to unobserved cases in a wider population. However, he showed that by imposing a distribution assumption through a statistical model, observed y-values could be considered as realisations of a random variable, so that those observed y-values become meaningfully related to the unobserved cases in both the sampling frame and to unobserved cases in an infinite population. This enables the findings from an observed population to be extrapolated to a wider, but unobserved, population.

This method relies on the assumption that observed data is IID (independent and identically distributed) i.e. that it is derived from a simple random sample. The IID assumption is used by the model to calculate the size of the variance (usually the standard error) between the observed data and the results it predicts. When this assumption is violated, the estimation of the error variance can be affected (as when a complex sample design is used: see section 4.5 in this chapter).

Leaving aside the issue of complex sampling design, the binary logistic regression method is used in this thesis to predict one of the binary outcomes against the other (experienced intimate partner violence against no experience of intimate partner violence (the reference category)) in a way which can be extrapolated to a wider unobserved population (working-age women in England and Wales) beyond the observed sample population. Binary regression modelling, in this thesis, is used to predict the likelihood of intimate partner violence for women in association with a number of factors representing economic resources, by specifying them in the models as explanatory variables. The model uses this data to help make the prediction of which individuals will be located in group 1 (intimate partner violence) as opposed to group 0 (no intimate partner violence). Logistic regression gives each explanatory variable a coefficient ' β ' which measures its independent contribution to variations in the dependent variable.

In the analysis for this thesis, an interrogation of economic resources observed at the neighbourhood, (rather than the individual) level⁴⁵ is also undertaken.

Neighbourhood income and neighbourhood employment deprivation are observed

⁴⁵ Although individuals can be theoretically conceived of as nested within households, in the structure of the BCS 2008/09 household variables and individual variables are at the same level because only one respondent per household is interviewed.

at the Lower Super Output Area (LSOA) level and specialist violence against women service provision is observed at the Local Authority Area (LAA) level. Multilevel binary logistic regression models are able to test for the effects of this hierarchy in the data, i.e. testing whether intimate partner violence differs significantly across LSOAs or LAAs. If significant effects are found, specifying a multilevel, rather than a single level, regression model takes explicit account of this hierarchical structure rather than ignoring it, which can impact on the accuracy of the parameter and error variance estimates. For a discussion of the development and operation of multilevel models see: Rasbash, Steele, Browne and Goldstein (2009): Hox (2002): Bickel (2007) and Snijders and Bosker (1999).

There are a number of link functions which can be used with binary logistic regression models (logit, probit and complementary log-log, for example). The logit link function is the most popular, partly because it can perform better when the data is highly skewed between the 0 and 1 categories, but mostly because the exponentiated coefficients from logit models can be interpreted as odds ratios (OR). The logit link function is used in all regression analysis and the β coefficients are exponentiated and reported as OR.

Logit(p) is the log (to base e) of the likelihood ratio that the dependent variable is 1.

$$\text{logit}(p) = \log_e[p / (1 - p)] = \ln[p / (1 - p)] \quad (3)$$

Although p can only range from 0 to 1, the $\text{logit}(p)$ scale can range from negative infinity to positive infinity and is symmetrical around the logit of .5 (which is zero).

The binary (0,1) response for the i th unit (women) is denoted by y_i . The probability that $y_i = 1$ is denoted by π_i . The form of the single-level logistic regression equation, with link function logit, and a single explanatory variable, x_i , is:

$$\text{logit}(\pi_i) = \log\left(\frac{\pi_i}{1-\pi_i}\right) = \beta_0 + \beta_1 x_i \quad (4)$$

Note: the specification of the binary logistic regression model does not include a term for the variance of the error distribution. The error is a function of the mean and cannot be estimated separately (Hox, 2002: 105).

The binary logistic regression equation is easily extended to cover multilevel models: for example women in neighbourhoods (LSOAs). The binary response variable becomes y_{ij} which equals 1 if woman i in neighbourhood j experienced intimate partner violence and 0 if she did not. A j subscript is also added to the proportion so that $\pi_{ij} = \Pr(y_{ij} = 1)$. With a single explanatory variable, x_{ij} , measured at the individual (woman) level, the form of the two-level logistic regression equation is:

$$\begin{aligned} \text{logit}(\pi_{ij}) &= \beta_{0j} + \beta_1 x_{ij} \\ \beta_{0j} &= \beta_0 + u_{0j} \end{aligned} \quad (5)$$

The intercept consists of two terms: a fixed component β_0 and a neighbourhood specific component, the random effect u_{0j} . We assume that u_{0j} follows a Normal distribution with mean zero and variance σ_{u0}^2 .

For a concise explanation of logistic regression analysis see Burns and Burns (2008: 568-588). For a more detailed description see Rasbash et al (2009: 117-144).

Estimation methods: Multilevel models in MLwiN

Maximum likelihood estimation is the usual estimation method in regression analysis. However, in binary response multilevel models, maximum likelihood is computationally intensive. For the multilevel binary logistic regression models run in *MLwiN* quasi-likelihood estimation methods are used instead. The procedures use a linearization method based on the Taylor series expansion which transforms a discrete response model to a continuous response model. After applying the linearization, the model is estimated using iterative generalised least squares (IGLS). The transformation to a linear model requires an approximation to be used. There are two types available in *MLwiN*, the marginal quasi-likelihood (MQL) and the predictive quasi-likelihood (PQL). Both methods can include 1st order terms or up to 2nd order terms of the Taylor series expansion (Rasbash et al, 2009: 128). MQL uses the current values of the fixed part of the model only, whereas PQL is an improvement on MQL because it uses the current values of the fixed part plus the residuals (Hox, 2002).

The second order PQL method is generally agreed to provide the best estimates (see for example Hox, 2002: 107; Rasbash et al, 2009: 128), however, it can be a less stable method and suffers from convergence problems. One suggested solution (Rasbash et al, 2009: 127) to this is to begin with first order MQL to obtain starting values for the second order PQL method. This method is used in the multilevel models specified in the analysis in this thesis.

Multilevel models in MLwiN: Variance partition coefficient

This applies to multilevel binary regression models only. The variance partition coefficient (VPC) for a two-level random intercept model, (such as that used to assess whether there is significant variation in intimate partner violence across LSOAs or across LAAs) is the proportion of total residual variance which is attributable to the second level. The method used in this thesis to estimate the level 2 variance assumes there is a continuous unobservable variable y_{ij}^* underlying the binary response y_{ij} (because the logistic model is cast in the form of a linear threshold model), such that $y_{ij} = 1$ if $y_{ij}^* \geq 0$ and $y_{ij} = 0$ if $y_{ij}^* < 0$. The unobserved y_{ij}^* can be considered as the propensity to be in one of the binary response categories as opposed to the other. The model can be written in terms of y_{ij}^* as:

$$y_{ij}^* = \beta_0 + \beta_1 x_{ij} + u_{0j} + e_{ij} \quad (6)$$

where e_{ij} follows a logistic distribution with variance $\pi^2/3 \approx 3.29$. The VPC can be computed as:

$$\sigma_{u0}^2 / (\sigma_{u0}^2 + 3.29) \quad (7)$$

See Rasbash et al, (2009: 132).

Hypothesis testing

Findings derived from models specified in SPSS take a cut-point of significance at the 5% level calculated using the Wald chi-square statistic (i.e. there is a five percent or less probability that the associations observed in the data are due to chance).

The methods used to account for the complex sample design of the BCS 2008/09 in *MLwiN* are less robust than the use of the Home Office design plan. The effect of the informative sampling design is the under-estimation of error variance. Taken together, extra caution is required in identifying significant relationships in the *MLwiN* models, thus findings from models specified in *MLwiN* take a cut-point of significance at the 1% level (also based on the Wald chi-square statistic) (i.e. there is a one percent or less probability that the associations observed in the data are due to chance).

Theory-led model specification

Models which specify multiple explanatory variables to predict intimate partner violence are explored using, what is termed here, 'a theory-led approach to model specification'. The individual as the primary unit of analysis is important in order to ensure that women's unique economic position is not obscured, for example by a focus on the household. This is operationalised in this thesis by retaining in regression models the three economic resource factors which are at the individual unit of analysis (women's current employment status, women's earned income, and women's socio-economic class) no matter whether or not they make a significant contribution to predicting intimate partner violence over and above the effects of other factors specified in the same model.

Factors representing household and neighbourhood economic resources specified in regression models are treated in the more traditional way using the method of manual step-wise deletion (removing the least significant contributors by turn until only significant contributors remain).

Model fit

For binary logistic regression analysis there is no agreed analogous measure for model fit. There are several measures (each with limitations) available: two are reported for each binary logistic regression model: McFadden R^2 and 'Area Under the Curve' (AUC). It is also noted that the aim of modelling the associations between intimate partner violence and economic resource factors is not to predict intimate partner violence *per se*, but rather to explicate significant associations between them, both individually, and in conjunction with each other. Therefore lower model fit statistics are likely compared to those that would be expected if the prediction of intimate partner violence *per se* was the aim.

The R^2 is often given as a fit statistic in linear regression modelling. This is the coefficient of determination, denoted R^2 , and is a number ranging between 0 and 1, used to describe how well a regression line fits a set of data. An R^2 near 1.0 indicates that a regression line fits the data well, while an R^2 closer to 0 indicates a regression line does not fit the data very well. R^2 denotes the proportion of variability in a data set that is accounted for by the statistical model, providing a measure of how well future outcomes are likely to be predicted by the model. It is not possible to produce a true measure of R^2 for non-linear regression models like the binary logistic regression models, but pseudo- R^2 measures are often used in their place to provide a measure of model fit.

The McFadden R^2 is a pseudo- R^2 fit statistic. There are three pseudo R-square statistics produced by SPSS; the Nagelkerke, the Cox and Snell, and the McFadden.

There is little agreement on which provides the best model fit statistic. Burns and Burns (2008: 580) suggest that the Nagelkerke R^2 is normally the more stable, but Allison, (2013) makes a highly convincing argument for selecting the McFadden measure for the single-level regression analysis. He states that as logistic regression is estimated by maximizing the likelihood function, then let L_0 be the value of the likelihood function for a model with no predictors, and let L_M be the likelihood for the model being estimated. McFadden's R^2 is defined as

$$R^2_{McF} = 1 - \ln(L_M) / \ln(L_0) \quad (8)$$

where $\ln(.)$ is the natural logarithm. The rationale for this formula is that $\ln(L_0)$ plays a role analogous to the residual sum of squares in linear regression. Consequently, this formula corresponds to a proportional reduction in “error variance”, unlike the Cox and Snell. In addition, Allison agrees that the McFadden R^2 satisfies almost all of Kvalseth's (1985) eight criteria for a good R^2 .

The AUC statistic is the area under the ‘receiver operating characteristic’ (ROC) curve. The ROC curve is a graphical plot which illustrates the performance of a binary classifier system as its discrimination threshold is varied (Hand and Till, 2001). A ROC curve is constructed by generating several classification tables for cut off values ranging from 0 to 1 and calculating the sensitivity and specificity for each value (Minitab: <http://www.minitab.com/support/documentation/answers/ROCBLR.pdf> accessed February 2013) [a classification table tabulates the number of times the fitted model classifies the responses correctly for each of the two response values]. The classification table is also a measure of model fit, but it is not an appropriate choice for the analysis in this thesis because there are so few ‘1’ responses (intimate

partner violence) compared to '0' responses (no intimate partner violence) in the dataset. Such a highly skewed dataset can result in models which are highly accurate in predicting the '0' responses but relatively poor at predicting the '1' responses (the response we are interested in predicting). However the effect is a very high overall percentage classification statistic which appears as though the model is making very accurate predictions, but which disguises the fact that this is due to the accurate prediction of the '0' responses only.

The AUC then is a better means of assessing a binary logistic regression model's ability to accurately predict, in this case, intimate partner violence.

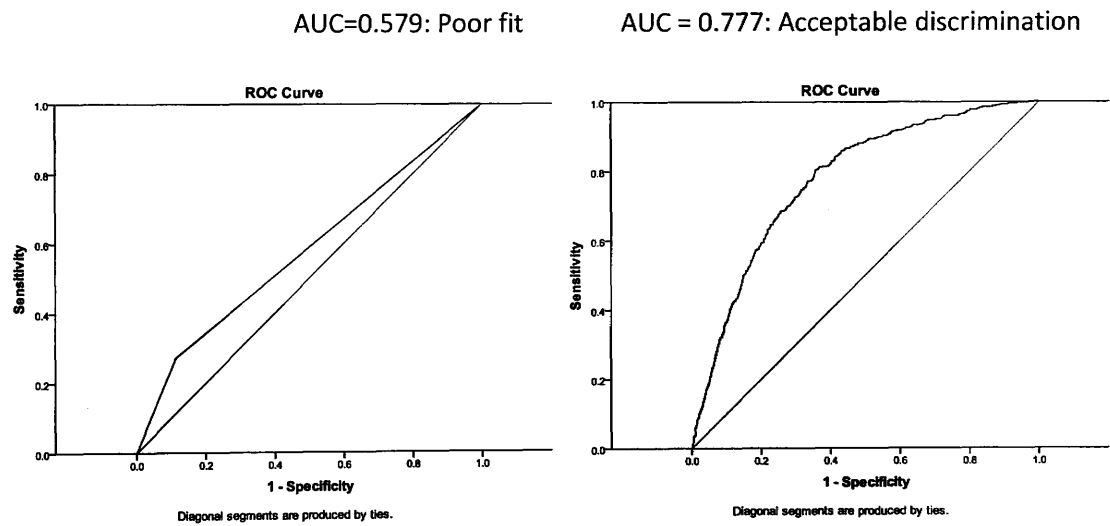
The ROC curve is created by plotting the fraction of true positives out of the positives (sensitivity) against the fraction of false positives out of the negatives (specificity) at various threshold settings (see Hand and Till, 2001; Fawcett, 2005). The area under the ROC curve (AUC for short) is a measure of discrimination: when the predicted probabilities from a model produce a large area under the curve, this suggests that the model is able to accurately predict the value of an observation's response (Minitab) (see Figure 4.1 below as an example).

The AUC statistic ranges from 0.5 to 1.0, and there have been some attempts to subdivide this range into an 'accuracy' scale, or 'rules' for interpretation. For example, Hosmer and Lemeshow (2000) provide some general guidelines for interpreting the AUC value:

Table 4.28: Hosmer and Lemeshow (2000) guide to interpreting AUC values for binary logistic regression models

AUC value	Interpretation
AUC = 0.5	No discrimination (i.e. predictive power is no better than chance)
$0.7 \leq \text{AUC} < 0.8$	Acceptable discrimination
$0.8 \leq \text{AUC} < 0.9$	Excellent discrimination
$\text{AUC} \geq 0.9$	Outstanding discrimination (but extremely rare)

Figure 4.1: Two ROC curves with AUC values: the first with an AUC of 0.579 is a poor fit, the second with an AUC of 0.777 is a much better fit.



4.8 Limitations: Methodology

Whilst the BCS 2008/09 represents the best source of data available for addressing the research agenda and for analysing the research questions, the problems of non-response in particular impact on this thesis. As well as the problems of non-response inherent in the surveying of sensitive subjects, there are a number of additional factors concerned with non-response and 'missingness' which further limit the ability of this study to fully address the thesis question: *how is economic inequality associated with intimate partner violence against women*.

The first of these is the framing of the BCS 2008/09 as a 'crime' survey. Women do not necessarily perceive the violence they experience from an intimate partner to be criminal⁴⁶ and thus may not disclose their experiences to a 'crime' survey⁴⁷. Whilst this remains a concern, however, the use of the BCS 2008/09 self-complete specialist module on domestic violence, sexual assault and stalking renders this less problematic. Whilst not a dedicated 'violence against women' survey such as the Canadian Violence Against Women Survey (VAWS), the US National Violence Against Women Survey (NVAWS) or the International Violence Against Women Survey (IVAWS), the self-complete module, delivered at the end of the main 'crime' survey, has been developed to incorporate many of the features of these dedicated surveys, including increased confidentiality through use of the self-complete method and the careful construction of questions. The selection of the intimate partner violence measure from the data generated through this dedicated self-complete module

⁴⁶ Only 31% of respondents to the BCS 2008/09 would describe the violence they experienced in the past 12 months as 'criminal'.

⁴⁷ Whilst only 31% of respondents describe their experiences as 'criminal', this also means that the other 69% of respondents who did not think their experiences were criminal had still disclosed them to a 'crime' survey.

therefore helps ensure that the best possible estimates from this data source are used in this thesis.

Secondly, restricting the survey sampling frame to adults who are permanent members of a residential household in England and Wales excludes sub-populations of women who are highly likely to experience greater levels and frequencies of intimate partner violence compared to women in the population which is included in the sampling frame. The associations between women's economic inequality and intimate partner violence for these sub-populations may also be significantly different to women in the population surveyed, but this cannot be taken account of or further explored in this study.

Similarly, the non-random missingness of women from the self-complete module on domestic violence, sexual assault and stalking potentially impacts on the associations between economic inequality and intimate partner violence. For example, the exclusion of older women from the BCS self-complete sampling frame speaks to a partitioning agenda operating in the UK which typically allocates studies on older women to the alternative field of 'elder abuse', rather than considering their experiences within the field of intimate partner violence against women. Despite this, a number of studies have found intimate partner violence against older women to be a significant issue. For example, Lundy and Grossman (2004); Toaster (2002) and Moulton, et al (1999) found between 30% and 70% of elder abuse against women was perpetrated by an intimate partner. Adding to this the fact that single female pensioners are found to be amongst the poorest group in the UK (Pantazis and Ruspini, 2006), then this thesis is likely to be missing a key association between

economic inequality and intimate partner violence as a result of the exclusion of this group of older women from the self-complete module sampling frame.

Similarly, Black and Minority Ethnic women are significantly more likely to be missing from the sampling frame because they are more likely to require help to participate compared to White women: Black and Minority Ethnic women have also been found to be poorer than White women in the UK (see for example Moosa with Woodroffe, 2009). Given these facts the differential missingness of Black and Minority Ethnic women from the self-complete module sampling frame is also likely to impact on the associations found between economic inequality and intimate partner violence in this thesis.

Finally, the construction of the BCS cannot enable intra-household effects of economic inequality between women and their male partners to be explored. This means that the interconnections between women's economic inequality and intimate partner violence within the household cannot be examined as part of the thesis question: *how is economic inequality associated with intimate partner violence against women*. Being unable to compare the inter- and intra-household effects of economic inequality and intimate partner violence limits the extent to which the thesis question can be addressed.

4.9 Hypotheses

From the *Literature Review* in chapter 2, the overarching thesis question: *how is economic inequality associated with intimate partner violence against women* is posited. Eleven research questions were set out in order that the key aspects of the thesis question could be identified and focused on in turn (end of chapter 2). However, it is found that the data source and measure utilised for analysis cannot address one of these: that concerned with the association between intra-household economic inequality and intimate partner violence (see section 4.3). This part of the thesis question therefore cannot be examined.

This chapter, and the previous one on *Measurement*, together have set out the operationalisation of the research agenda by identifying the data source and measure of intimate partner violence and by addressing the intricacies of each. This is a necessary and important process before analysis begins. The final part of this process is to set out a series of testable hypotheses, which operationalise each research question for empirical analysis:

1. Is current employment as important as socio-economic class?

H1: Women's current employment status is not significantly associated with intimate partner violence.

H2: Women's socio-economic class is not significantly associated with intimate partner violence.

H3: Socio-economic class is not more significant in its association with intimate partner violence than current employment status

2. Is women's earned income associated with intimate partner violence?

H4: Women's earned income level is not significantly associated with intimate partner violence.

3. Is women's earned income more important than current employment and socio-economic class?

H5: Women's earned income is not more significant in its association with intimate partner violence than current employment status or socio-economic class.

4. Are household economic resources associated with intimate partner violence?

H6: Household income level is not significantly associated with intimate partner violence.

H7: Housing tenure type is not significantly associated with intimate partner violence.

H8: Household poverty status is not significantly associated with intimate partner violence.

H9: No one factor representing economic resources which women access via their household is more significant in its association with intimate partner violence than the other two.

5. Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?

H10: Neighbourhood (LSOA) income deprivation is not significantly associated with intimate partner violence.

H11: Neighbourhood (LSOA) employment deprivation is not significantly associated with intimate partner violence.

6. Is there an association between specialist violence against women service provision and intimate partner violence in the UK?

H12: Neighbourhood (LAA) provision of specialist violence against women services is not significantly associated with intimate partner violence.

7. Are women's employment and income the most important economic resources associated with intimate partner violence?

H13: Women's current employment status, socio-economic class and earned income are not more significant in their association with intimate partner violence than other factors representing economic resources.

8. Is being in a currently violent relationship associated with economic inequality?

H14: Women's economic inequality is not more significant in its association with remaining in relationships that are recently violent compared to relationships with no history of recent violence.

9. Does exiting a violent relationship impact on women's economic inequality?

H15: Women's economic inequality is not more significant in its association with exiting relationships that have been recently violent compared to relationships with no history of recent violence.

10. Is exiting a violent relationship associated with greater economic inequality than remaining?

H16: Women's economic inequality is not significantly greater for those who have exited relationships that are recently violent compared to those who remain in relationships that are recently violent.

4.10 Conclusion

This chapter has set out the operationalisation of the research agenda for this thesis using the British Crime Survey 2008/09. It has described the process of access to and the construction of the BCS 2008/09 and laid out how issues such as missing data and complex sampling design effects are to be dealt with. It has also shown how the concept of economic inequality is operationalised through 'economic resources', being both income and economic assets. The factors representing economic resources, organised individually/directly, via the household or via the neighbourhood, were explored and the characteristics of the sample and national working-age populations in relation to these factors were examined. This chapter also described the quantitative analysis methods to be utilised; how they work and why findings from this analysis can be extrapolated to the national working-age population⁴⁸ of women in England and Wales.

This chapter follows on from the previous one (chapter3: *Measurement*) which explored in depth the complex and contentious issues associated with the measurement of intimate partner violence against women. It explored possible data sources, selecting the BCS as the most appropriate for use in the analysis of the overarching thesis question and the research questions. It considers a number of possible sweeps of the BCS and selected the 2008/09 sweep as the most appropriate for use in the analysis. Finally it explored a number of possible measures of intimate partner violence within the BCS 2008/09, selecting a widely defined prevalence

⁴⁸ It has also defined the 'national working-age population of women in England and Wales' as those who are aged 16-59 years living in permanent residential households: see the section in this chapter on missing data (4.4).

measure of intimate partner violence in the past 12 months as the most appropriate for the analysis in this thesis.

These two chapters (*Measurement* and *Methodology*) together chart the operationalisation of the research agenda in this thesis from beginning to end. A number of measurement and methodological limitations have been identified as part of this process and their potential impact on the analysis findings have been laid out at the end of each chapter.

Finally, a set of testable hypotheses have been set out. The empirical analysis findings presented in the following chapter (chapter 5) relate directly to these hypotheses. The discussion in chapter 6 links the research questions to the empirical evidence presented in chapter 5, before chapter 7 concludes by linking the discussion of the research questions to the thesis question in order to address *how economic inequality is associated with intimate partner violence against women*.

Chapter 5: Findings

5.1 Introduction

Drawn from the *Literature Review* in chapter 2, the overarching thesis question: *how is economic inequality associated with intimate partner violence against women* is posited. In order to identify and focus on the key aspects of the thesis questions, eleven research questions were also set out (end of chapter 2).

Chapter 3 (*Measurement*) systematically addressed the issues of identifying the most appropriate data source and measure of intimate partner violence for this thesis. The British Crime Survey 2008/09 was identified as such. Chapter 3 also identified the most appropriate measure of intimate partner violence, for analysis, available in the BCS 2008/09 which could meet the definition laid out in chapter 2. Chapter 4 (*Methodology*) then went on to examine the BCS 2008/09 in detail, to explain the access criteria and its structure, to set out the analysis sample, and the missing data and complex sample design methods to be utilised. Chapter 4 also described the construction of the factors being used to represent economic resources in the analysis and examined the sample and national working-age population in relation to these. The quantitative methods used for the analysis were laid out at the end of the chapter.

In the process of operationalising the research agenda through addressing the measurement and methodology issues, a number of limitations were highlighted which impact to some degree on this thesis. Despite these limitations, the widely defined prevalence measure of intimate partner violence against women in the past

12 months is shown to be reasonably robust, and the BCS 2008/09 enables women's experiences of intimate partner violence to be linked to a range of factors representing individual, household and neighbourhood economic resources.

At the end of this operationalisation process a series of hypotheses were laid out. The empirical analysis follows these (chapter 4: section 4.9). Each research question is explored empirically through one or more of these hypotheses: a reminder of these is given below before the empirical findings for each are presented in the body of this chapter.

H1: Women's current employment status is not significantly associated with intimate partner violence.

H2: Women's socio-economic class is not significantly associated with intimate partner violence.

H3: Socio-economic class is not more significant in its association with intimate partner violence than current employment status

H4: Women's earned income level is not significantly associated with intimate partner violence.

H5: Women's earned income is not more significant in its association with intimate partner violence than current employment status or socio-economic class.

H6: Household income level is not significantly associated with intimate partner violence.

H7: Housing tenure type is not significantly associated with intimate partner violence.

H8: Household poverty status is not significantly associated with intimate partner violence.

H9: No one factor representing economic resources which women access via their household is more significant in its association with intimate partner violence than the other two

H10: Neighbourhood (LSOA) income deprivation is not significantly associated with intimate partner violence.

H11: Neighbourhood (LSOA) employment deprivation is not significantly associated with intimate partner violence.

H12: Neighbourhood (LAA) provision of specialist violence against women services is not significantly associated with intimate partner violence.

H13: Women's current employment status, socio-economic class and earned income are not more significant in their association with intimate partner violence than other factors representing economic resources.

H14: Women's economic inequality is not more significant in its association with remaining in relationships that are recently violent compared to relationships with no history of recent violence.

H15: Women's economic inequality is not more significant in its association with exiting relationships that have been recently violent compared to relationships with no history of recent violence.

H16: Women's economic inequality is not significantly greater for those who have exited relationships that are recently violent compared to those who remain in relationships that are recently violent.

Economic inequality, the disparity in distribution of and access to income and economic assets, is operationalised in this thesis using the concept of economic resources. Economic resources, including both income and other economic assets, are represented in the analysis by a number of factors, such as women's earned income, housing tenure, and level of neighbourhood income deprivation. These factors are organised into three types: those which are women's own/individual economic resources; household economic resources; and neighbourhood economic resources. The type of economic resource is an intrinsic part of the analysis in this thesis. It enables an exploration of the relative importance of both individual resources and the unit of analysis of resource.

Individual:

- Women's current employment status
- Women's earned income
- Women's socio-economic class

Household:

1. Household income

2. Housing tenure
3. Household poverty status

Neighbourhood:

1. Level of neighbourhood income deprivation
2. Level of neighbourhood employment deprivation
3. Specialist violence against women service provision

A brief reminder of the technical details of the analysis data and methods is given before the chapter focuses on presenting the empirical findings for each of the hypotheses.

5.2 Operationalising economic inequality and intimate partner violence against women

Data: All analysis is conducted on data from the British Crime Survey 2008/09. The analysis dataset includes variables from the main questionnaire, the domestic violence, sexual assault and stalking computer assisted self-complete module, the small area geographic variables and the complex sample design variables. The analysis dataset is referred to in the rest of this chapter as the BCS or the BCS 2008/09. Note that the BCS is restricted to the population of England and Wales and, in April 2012, was re-named the *Crime Survey for England and Wales* (CSEW).

The measure of intimate partner violence used in the analysis is taken from the domestic violence, sexual assault and stalking module of the BCS. It is a widely defined prevalence measure of recent (in the past 12 months) intimate partner violence against women (see *Measurement* section 3.4). The term ‘*violence*’, as in intimate partner violence, or violent relationship then refers to the wide prevalence definition and includes physical, sexual and psychological acts, threats and behaviours; the definition of violence in this thesis is not confined to physical violence.

Analysis is conducted in SPSS 19.0 for *Windows* unless stated as being conducted in *MLwiN* 2.2. Missing data is dealt with using the complete case method (see *Methodology* section 4.4). The complex sample design is accounted for in the analysis using SPSS by the Home Office complex sample design plan file and in the

analysis conducted in *MLwiN*, through the use of design-based and design-effect methods (see *Methodology* section 4.5).

Model specification: A ‘theory-led approach to model specification’ has been adopted in this thesis to replicate both the central positioning currently afforded to women’s own/individual economic resources and to focus on the individual unit of analysis. This is operationalised through the retention in models of those factors representing women’s own/individual economic resources (employment status; earned income; and socio-economic class) irrespective of whether they are significantly associated with intimate partner violence over and above the effects of the other factors specified in models (see *Methodology* section 4.7).

Significance testing: Findings derived from models specified in *SPSS* take a cut-point of significance at the 5% level calculated using the Wald chi-square statistic ($p \leq 0.050$). The methods used to account for the complex sample design in *MLwiN* are less robust than the use of the Home Office design plan. The effect of the informative sampling design of the BCS 2008/09 is the under-estimation of error variance (see *Methodology* section 4.5). Extra caution is therefore taken in rejecting the null hypothesis using *MLwiN*. Findings from models specified in *MLwiN* take a cut-point of significance at the 1% level ($p \leq 0.010$).

Demographics: There are four demographic characteristics of women which are significantly correlated with all nine factors representing economic resources: highest level of education; children in the household; ethnicity; age (see *Methodology* section 4.6). This correlation needs to be accounted for in model specifications. These characteristics are specified in the models which seek to

compare the relative significance of all the economic factors in association with intimate partner violence.

Populations: The presentation of findings refers to three different ‘populations’ of women: sample, national working-age and control. The *sample population* consists of female respondents aged 16-59 years who participated in the BCS 2008/09 domestic violence, sexual assault and stalking module and who have been in at least one intimate partnership since the age of 16 years, almost definitely with a male partner. The *national working-age population* is the estimated number of women who are permanent members of a residential address in England or Wales aged 16 -59 years and who have been in at least one heterosexual or bisexual intimate partnership since the age of 16 years. The *control population* is the estimated number of women who are permanent members of a residential address in England or Wales aged 16 - 59 years who have been in at least one heterosexual or bisexual intimate partnership since the age of 16 years and have *no* experience of intimate partner violence in the past 12 months.

5.3 Is current employment status as important as occupational status?

Current employment status in the BCS includes three possible states: unemployed, economically inactive and employed. Occupational status is represented by socio-economic class, which records women's current or last occupational class.

The association of each with intimate partner violence is first explored individually through data presented in two tables; the first shows the distribution of those women in the population who disclose intimate partner violence across the categories of the factor. The second presents the findings for a binary logistic regression model showing the odds of women in each category of the economic factor disclosing intimate partner violence compared to a designated reference category. Where the odds of women in one category disclosing are significantly different to those of women in the reference category, the size effect is additionally given.

H1: Women's current employment status is not significantly associated with intimate partner violence.

This hypothesis can be rejected: women's current employment status is found to be significantly associated with intimate partner violence. The odds of intimate partner violence for women who are unemployed or economically inactive are significantly higher than those of women who are employed.

The vast majority (an estimated 75%) of women in the national working-age population are employed. However the highest proportion of women in any one

employment category, disclosing intimate partner violence are unemployed: an estimated 10% of unemployed women experienced intimate partner violence (table 5.1).

This distribution across the categories is reflected in the findings from the binary logistic regression model (table 5.2) with the odds of intimate partner violence for unemployed women being 2.3 times higher than those of employed women. The odds of intimate partner violence for economically inactive women are 1.4 times higher than those of employed women.

In addition, the odds of intimate partner violence for unemployed women are also significantly higher than those of economically inactive women (1.6 times higher) (table 5.2(b)).

Table 5.1: Estimated percentage of women disclosing IPV by employment status

	Number in sample	Estimated % (nat. population)	SE
Unemployed	362	10.1	(1.3)
Economically inactive	2,905	6.5	(0.5)
Employed	9,630	4.6	(0.3)
Total (N)	12,897	-	-

Table 5.2(a): Relationship between employment status and IPV

	OR (exp(β))	SE (β)	Sig.	Odds of IPV compared to employed women
Intercept	.048	.068		-
Unemployed	2.326	.208	<.001 ***	2.3 times greater
Economically inactive	1.444	.111	.001 ***	1.4 times greater
Employed (ref cat)	-	-	-	-
McFadden R^2 = .006: AUC = .565				

Table 5.2(b): Relationship between unemployment and IPV

	OR (exp(β))	SE (β)	Sig.	Odds of IPV compared to economically inactive women
Intercept	.069	.089		
Unemployed	1.611	.216	.028 *	1.6 times greater
Economically inactive (ref cat)	-	-	-	
McFadden R^2 =.003: AUC = .522				

H2: Women's socio-economic class is not significantly associated with intimate partner violence.

This hypothesis can be rejected: women in lower socio-economic classes are found to have significantly higher odds of intimate partner violence compared to women in the highest socio-economic class.

Socio-economic class, in the BCS 2008/09, is allocated on the basis of the National Statistics Socio-economic Classification System⁴⁹. This is an occupation-based system which allocates a respondent to a particular class based on their current or last occupation (Office for National Statistics, 2010). For example, table 5.3(b) demonstrates that those who are currently unemployed or economically inactive are distributed across all six socio-economic classes because of their prior occupation (including never worked and long-term unemployed). The analysis in this thesis utilises the six class system. For the purposes of analysis the ordering of the classes is reversed in order that higher managerial, administrative and professional occupations are the reference category and the odds of intimate partner violence for

⁴⁹ See: <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html>).

women located in any other class can be compared to women located in this class (class VI for analysis purposes):

- Class I: Never worked and long-term unemployed
- Class II: Semi-routine and routine occupations
- Class III: Lower supervisory and technical occupations
- Class IV: Small employers and own account workers
- Class V: Intermediate occupations
- Class VI: Higher managerial, administrative and professional occupations

The largest group of women are allocated to the 'higher managerial, administrative and professional occupations' class (class VI) (n=4,793). The highest proportion of women experiencing intimate partner violence are located in the 'never worked and long-term unemployed' class (class I) (8.9%), followed by the next two lowest occupational classes: semi-routine and routine occupations (6.1%) and lower supervisory and technical occupations (6.9%) (table 5.3(a)). Women located in any of these three classes are significantly more likely to disclose intimate partner violence than women located in the higher managerial, administrative and professional occupations class (table 5.4).

Table 5.3 (a): Estimated percentage of women disclosing IPV by socio-economic class

	Number in sample	Estimated % (nat. population)	SE
Class I: Never worked & long-term unemployed	296	8.9	(2.0)
Class II: Semi-routine & routine occupations	3,346	6.1	(0.5)
Class III: Lower supervisory & technical occupations	714	6.9	(1.1)
Class IV: Small employers & own account workers	711	4.0	(0.6)
Class V: Intermediate occupations	2,220	4.5	(0.6)
Class VI: Higher managerial, administrative & professional occupations	4,793	4.1	(0.4)
Total (N)	12,080	-	-

Table 5.3(b): Estimated percentage of unemployed and economically inactive women by socio-economic class

<i>Previous occupation</i>	<i>Unemployed at point of survey</i>		<i>Economically inactive at point of survey</i>	
	Estimated % (nat. population)	SE	Estimated % (nat. population)	SE
Class I	13.1	(2.2)	11.4	(0.8)
Class II	40.5	(2.3)	39.3	(1.2)
Class III	4.9	(1.4)	5.4	(0.6)
Class IV	0.8	(0.3)	3.5	(0.4)
Class V	19.8	(2.1)	14.9	(1.0)
Class VI	20.9	(2.2)	25.5	(1.1)
Total (N)	353	-	2,430	-

Table 5.4: Relationship between socio-economic class and IPV

	OR (exp(β))	SE (β)	Sig.	Odds of IPV compared to management / professional women
Intercept	.042	.103		-
Class I	2.308	.297	.005 **	2.3 times greater
Class II	1.519	.135	.002 **	1.5 times greater
Class III	1.741	.215	.010 **	1.7 times greater
Class IV	.990	.224	.996	
Class V	1.113	.176	.543	
Class VI (ref cat)	-	-	-	-
McFadden R^2 = .007: AUC = .570				

H3: Socio-economic class is not more significant in its association with intimate partner violence than current employment status

There is no evidence to reject this hypothesis: whilst a number of socio-economic classes are found to be significantly associated with intimate partner violence over and above the effects of current employment status, current employment status is also significantly associated with intimate partner violence over and above the effects of socio-economic class. This suggests they are both significant in women’s experience of intimate partner violence (table 5.5).

Table 5.5: Relationship between employment status, socio-economic class and IPV

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to ref cat.
Intercept	.039	.109			
Unemployed	2.260	.210	<.001	***	2.3 times greater
Economically inactive	1.411	.109	.002	**	1.4 times greater
Employed (ref cat)	-	-	-		
Class I	1.703	.307	.083		
Class II	1.420	.135	.009	**	1.4 times greater
Class III	1.724	.216	.012	*	1.7 times greater
Class IV	1.023	.225	.920		
Class V	1.104	.177	.576		
Class VI (ref cat)	-	-	-		
McFadden R ² =.012: AUC = .592					

5.4 Is women's earned income associated with intimate partner violence?

H4: Women's earned income level is not significantly associated with intimate partner violence.

There is no evidence to reject this hypothesis when women's earned income is constructed to include only earned income greater than £0 by including only women in employment at point of survey. However, when women who are unemployed or economically inactive, and thus have an earned income of £0 at point of survey are included there is evidence to reject this hypothesis.

Whilst women who have any level of earned income are not found to have significantly different odds of experiencing intimate partner violence (table 5.7), having no earned income is associated with significantly higher odds of intimate partner violence compared to even low levels of earned income (table 5.9(b)).

The BCS 2008/09 does not provide data on women's personal income, which could include income from benefit receipts, interest from savings, private pensions, or student grants, as well as from employment: it only includes earned income from employment. Thus, women's income (earned), as constructed in the BCS 2008/09, is not an accurate representation of women's income in its full sense, and so this factor only represents women's 'earned income'.

The findings for women's earned income are given here for low (less than £10,000 per annum); below average (£10-£9,999 per annum); and above average (£20,000 or

more per annum) earned incomes⁵⁰. The findings are presented for both employed women with some level of earned income (tables 5.6 and 5.7) and for all women, i.e. those with any level of earned income and those with £0 earned income at point of survey) (tables 5.8 and 5.9 (a) and 5.9(b)).

The largest group of women in both cases are located in the above average earned income category, but the highest proportion of women experiencing intimate partner violence are located in the low earned income (table 5.6) and unemployed categories respectively (table 5.8).

For women with any level of earned income, the odds of intimate partner violence are not significantly different, i.e. women's earned income is not significantly associated with intimate partner violence (table 5.7). However, when economically inactive and unemployed women are added to the analysis, having an earned income of £0 makes a significant difference to the odds of experiencing intimate partner violence. Both unemployed and economically inactive women have significantly higher odds of intimate partner violence than women with above average earned income (table 5.9(a)).

In addition, unemployed women with an earned income of £0 are also significantly more likely to experience intimate partner violence than women with a low earned income of less than £10,000 per annum (table 5.9(b)). However, the odds of intimate partner violence for economically inactive women with an earned income of £0 are

⁵⁰ In 2008 the median hourly earnings for women was £10.91: assuming a 38hour working week and 52 week working year, this is an annual median income of £21,560 (Office for National Statistics: www.ons.gov.uk/ons/; Department for Work and Pensions, 2009).

not significantly different to those of women with a low earned income of £10,000 or less per annum (table 5.9(b)).

Table 5.6: Estimated percentage of women disclosing IPV by earned income

	Number in sample	Estimated % (nat. population)	SE
Low (<£10,000)	2,165	5.4	(0.5)
£10,000-£19,999	2,802	4.1	(0.4)
Above average (£20,000 or more)	3,330	4.5	(0.5)
Total (N)	8,297	-	-

Table 5.7: Relationship between women's earned income and IPV

	OR (exp(β))	SE (β)	Sig.	Odds of IPV compared to women earning £20k or more
Intercept	.047	.120		-
Low (<£10,000)	1.231	.159	.191	
£10,000-£19,999	.912	.155	.550	
Above average (£20,000 or more) (ref cat)	-	-	-	-
McFadden R^2 = .002; AUC = .513				

Table 5.8: Estimated percentage of women disclosing IPV by earned income including women designated as economically inactive or unemployed at point of survey

	Number in sample	Estimated % (nat. population)	SE
Economically inactive (£0)	2,907	6.6	(0.5)
Unemployed (£0)	362	10.1	(1.3)
Low (£1-£9,999)	2,165	5.4	(0.5)
£10,000-£19,999	2,802	4.1	(0.4)
Above average (£20,000 or more)	3,330	4.5	(0.5)
Total (N)	11,566	-	-

Table 5.9 (a): Relationship between women's earned income and IPV including women designated as economically inactive or unemployed at point of survey: ref cat is above average earned income

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to women earning £20k or more
Intercept	.047	.120			-
Economically inactive (£0)	1.511	.149	.006 **		1.5 times greater
Unemployed (£0)	2.394	.234	<.001 ***		2.4 times greater
Low (£1-£9,999)	1.231	.159	.191		
£10,000-£19,999	.912	.155	.551		
Above average (£20,000 or more) (ref cat)	-	-	-		-
McFadden R^2 =.007: AUC = .571					

Table 5.9(b): Relationship between women's earned income and IPV including women designated as economically inactive or unemployed at point of survey: ref cat is low earned income

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to women earning £1-£9,999
Intercept	.058	.112			
Economically inactive (£0)	1.228	.144	.155		
(Unemployed (£0)	1.945	.225	.003 **		1.9 times greater
Low (£1-£9,999) (ref cat)	-	-	-		
£10,000-£19,999	.741	.151	.047 *		24% lower
Above average (£20,000 or more)	.813	.159	.191		
McFadden R^2 =.007: AUC = .571					

Women in single adult households have a measure of both their earned income and their household income level. A comparison of these two demonstrates these measures are not necessarily the same, for example, employed and economically inactive women with £0 earned income are located across all the categories of household income level from low (less than £10,000 per annum) to above average

(£30,000 or more per annum) (table 5.10). Therefore household income includes additional sources other than just earned income. Women in single households then can be used to assess whether additional income from other sources is significantly associated with intimate partner violence.

The household income level is found to be highly significant in association with intimate partner violence for women in single adult households, even after women's earned income has been accounted for (table 5.11). Women in low income households, and below average income households, are found to have significantly higher odds of intimate partner violence than those of women in households with above average incomes.

Table 5.10: Estimated percentage of women in single adult households in each earned income category by distribution across household income level categories

<i>Household income</i>	<i>Estimated % (nat. population) personal income</i>				
	Economic inactive	Un-employed	£1-£9,999	£10k-£19,999	£20k or more
£1-£9,999	70.1	79.9	78.3	-	-
£10k-£19,999	22.0	11.7	17.2	93.8	-
£20-£29,999	5.2	17.2	2.0	4.2	49.5
£30k or more	2.7	4.2	2.5	2.0	50.5
Total (N)	831	144	371	738	1,047

Table 5.11: Relationship between women’s earned income (WI), household income (HH) and IPV for single adult households

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to ref cat
Intercept	.039	.125			
Low HH <£10,000)	3.499	.188	<.001	***	3.5 times greater
HH: £10k-£29,999	2.006	.156	<.001	***	2.0 times greater
Above average HH (£30,000 or more) (ref cat)	-	-	-		
WI: Economically inactive (£0)	.963	.188	.841		
WI: Unemployed (£0)	1.412	.288	.231		
WI: Low (£1- £9,999)	.690	.200	.064		
WI: £10,000- £19,999	.787	.166	.150		
WI: Above average (£20,000 or more (ref act)	-	-	-		
McFadden R ² =.029: AUC = .659					

5.5 Is women's earned income more important than current employment status and socio-economic class?

H5: Women's earned income is not more significant in its association with intimate partner violence than current employment status or socio-economic class.

This hypothesis can be rejected: not because women's earned income is more significant in its association with intimate partner violence compared to current employment status and socio-economic class, but because it is found to be less significant.

The odds of intimate partner violence are significantly higher for unemployed women compared to employed women, even after accounting for the effects of women's earned income and women's socio-economic class. The odds of intimate partner violence are significantly higher for women in lower socio-economic classes compared to those in the highest socio-economic class, even after accounting for the effects of women's employment status and women's earned income. However, women's earned income is not significantly associated with intimate partner violence over and above the effects of current employment status and socio-economic class (table 5.12).

The model fit AUC statistic of 0.592 falls short of entering Hosmer and Lemeshow's (2000) 'acceptable discrimination' band of 0.7-0.8 (see *Methodology* section 4.7). However, this is not surprising given the small number of explanatory factors being used to predict intimate partner violence in this model (table 5.12). Explanatory factors associated with intimate partner violence extend beyond the economic

domain and therefore the model fit statistics of the models in this thesis are unlikely to achieve high discrimination because only economic resources factors are being considered. The aim of modelling these associations is not to predict intimate partner violence *per se*, but rather to explicate significant associations between economic resource factors and intimate partner violence, both individually, and in conjunction with each other. Therefore lower model fit statistics are likely compared to those that would be expected if the prediction of intimate partner violence *per se* was the aim.

Table 5.12: Relationship between individual economic resources and IPV

	Full Model			Final Model		
	OR (exp(β))	SE (β)	Sig.	OR (exp(β))	SE (β)	Sig.
Intercept	.043	.126		.039	.109	
Unemployed	1.831	.248	.015 *	2.260	.210	<.001 ***
Economically inactive	1.145	.164	.407	1.411	.109	.002 **
Employed (ref cat)	-	-	-	-	-	-
WI: Economically inactive (£0)	-	-	-			
WI: Unemployed (£0)	-	-	-			
WI: Low (£1- £9,999)	.834	.207	.382			
WI: £10,000- £19,999	.744	.173	.088			
WI: Above average (£20,000 or more (ref act)	-	-	-			
Class I	1.914	.313	.038 *	1.703	.307	.083
Class II	1.668	.159	.001 ***	1.420	.135	.009 **
Class III	2.018	.221	.001 ***	1.724	.216	.012 *
Class IV	1.219	.243	.415	1.023	.225	.920
Class V	1.226	.202	.315	1.104	.177	.576
Class VI (ref cat)	-	-	-	-	-	-
McFadden R^2 = .014; AUC = .592				McFadden R^2 = .012; AUC = .592		

5.6 Are household economic resources associated with intimate partner violence?

Household economic resources are operationalised using three factors: household income level; housing tenure; and household poverty status. Each of these factors and its possible association with intimate partner violence is first explored individually (H6 to H8) and then the three factors are explored in conjunction with each other in order to assess whether any are more important in their associations with intimate partner violence than others (H9).

As previously, each factor is explored through data presented in two tables. The first shows the distribution of those women in the population who disclose intimate partner violence across the categories of the economic factor. The second presents the findings for a binary logistic regression model showing the odds of women in each category of the economic factor disclosing intimate partner violence compared to a designated reference category.

H6: Household income level is not significantly associated with intimate partner violence.

This hypothesis can be rejected: the odds of intimate partner violence for women in low income households are significantly higher than those of women in households with above average incomes. The odds of intimate partner violence for women in households with below average incomes are also significantly higher than those of women in households with above average incomes. When the number of adults in the household contributing to the total household income is taken account of, the

odds of intimate partner violence for women in low income households are still found to be significantly higher than those of women in households with above average incomes, as are the odds of intimate partner violence for women in households with below average incomes.

The findings for household income level are presented for low household incomes of £10,000 per annum or less; below average household incomes of £10-£29,999 per annum; and above average household incomes of £30,000 or more per annum⁵¹.

Table 5.13 explores the associations between intimate partner violence and household income across these three categories. The majority of women in any one category is located in the above average household income category (n=5,422). The highest proportion of women experiencing intimate partner violence located within any one category is in low income households (an estimated 10.9% of women in this group experience intimate partner violence).

Table 5.14 shows that the odds of intimate partner violence for women in low income households are 3.5 times higher than those of women in households with above average incomes. The odds of intimate partner violence for women in households with below average incomes of £10-£29,999 per annum are almost double those of women in above average income households.

⁵¹The national average household income (for all households) in 2008 was approximately £30,000 (Office for National Statistics: www.ons.gov.uk/ons/).

Table 5.13: Estimated percentage of women disclosing IPV by household income level

	Number in sample	Estimated % (nat. population)	SE
Low (<£10,000)	1,388	10.9	(1.0)
£10,000-£29,999	3,959	6.2	(0.5)
Above average (£30,000 or more)	5,422	3.4	(0.3)
Total (N)	10,769	-	-

Table 5.14: Relationship between household income and IPV

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to women with household income of £30k or more
Intercept	.035	.103			-
Low (< £10,000)	3.455	.141	<.001	***	3.5 times greater
£10,000-£29,999	1.882	.132	<.001	***	1.9 times greater
Above average (£30,000 or more) (ref cat)	-	-	-		-
McFadden R^2 = .025; AUC = .641					

Household income in the BCS 2008/09 is the sum total of the incomes of every adult in the household. The number of adults in a household is significantly correlated to household income (table 5.15). Therefore in order to explicate the effects of household income in association with intimate partner violence, the number of adults in the household needs to be accounted for. In doing so, this makes the effects of household income comparable across households which contain differing numbers of adults (table 5.16). In all subsequent models which specify household income, the number of adults in the household⁵² is taken account of.

⁵² This is done using the nad2 variable in the BCS 2008/09 which differentiates between single adult and two or more adults (2 or more) households.

Table 5.15: Test of independence: Household income * single or two or more adults household

Chi-square	Adjusted F.	df1	df2	Sig.
1869.929	493.232	2.848	6387	<.001***

Table 5.16: Relationship between household income and IPV accounting for number of adults in the household

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to women in HHs with above average incomes
Intercept	.083	.137			
Low HH (<£10,000)	2.110	.157	<.001	***	2.1 times greater
HH: £10,000- £29,999	1.503	.136	.003	*	1.5 times greater
Above average HH (£30,000 or more) (ref cat)	-	-	-		
Two or more adults	.393	.119	<.001	***	
Single-adult (ref cat)	-	-	-		
McFadden R^2 = .043; AUC = .680					

H7: Housing tenure is not significantly associated with intimate partner violence.

This hypothesis can be rejected: the odds of intimate partner violence for women in social rented or private rented housing are significantly higher than those of women in owner/occupier housing.

The BCS 2008/09 provides data on the housing tenure of each household subdivided into three categories: social renters (local authority and housing association); private renters; and owner/occupiers. Two-thirds of women live in owner/occupier housing, but the highest proportion of women experiencing intimate partner violence reside in social rented housing (9.4%), followed by private rented housing (6.9%) (table

5.17). This distribution is reflected in the findings from the binary logistic regression model which show that the odds of intimate partner violence for women in either social or private rented housing are at least double those of women in owner/occupier housing (table 5.18).

Table 5.17: Estimated percentage of women disclosing IPV by housing tenure

	Number in sample	Estimated % (nat. population)	SE
Social rented	2,028	9.4	(0.9)
Private rented	2,156	6.9	(0.6)
Owner / occupier	8,700	3.7	(0.3)
Total (N)	12,884	-	-

Table 5.18: Relationship between housing tenure and IPV

	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to owner / occupier women
Intercept	.038	.078			-
Social renters	2.728	.131	<.001	***	2.7 times greater
Private renters	1.953	.118	<.001	***	2.0 times greater
Owner / occupiers (ref cat)	-	-	-		-
McFadden R^2 =.022: AUC = .632					

H8: Household poverty status is not significantly associated with intimate partner violence.

This hypothesis can be rejected: the odds of intimate partner violence are significantly higher for women in households at or below the poverty threshold compared to women residing in households above the poverty threshold.

The factor representing household poverty status has been constructed and added to the BCS 2008/09 dataset for the purposes of this analysis. The factor allocates each respondent to one of two categories ('at or below the poverty threshold' or 'above

the poverty threshold’) based on their level of household income and household structure; i.e. the construction of the factor takes account of the number of adults (single or couple) and the number of children under the age of 16years (zero or one or more) in the household (see *Methodology* section 4.6).

Over 80% of women are located in households above the poverty threshold, but the highest proportion of women experiencing intimate partner violence is located in households at or below the poverty threshold (an estimated 11% of women in households at or below the poverty threshold experience intimate partner violence) (table 5.19). The odds of intimate partner violence for women in households at or below the poverty threshold are 2.6 times higher than those for women in households above the poverty threshold (table 5.20).

Table 5.19: Estimated percentage of women disclosing IPV by household poverty status

	Number in sample	Estimated % (nat. population)	SE
At or below	1,312	10.8	(0.9)
Above	9,457	4.5	(0.3)
Total (N)	10,769	-	-

Table 5.20: Relationship between household poverty status and IPV

	OR (exp(β))	SE (β)	Sig.	Odds of IPV compared to women in households above the poverty threshold
Intercept	.047	.068		
At or below	2.588	.115	<.001	2.6 times greater
Above (ref cat)	-	-	-	
McFadden R ² =.014; AUC = .579				

H9: No one factor representing economic resources which women access via their household is more significant in its association with intimate partner violence than the others.

This hypothesis can be rejected: both household income and housing tenure are significantly associated with intimate partner violence, over and above the effects of each other. The odds of intimate partner violence for women in household with low income levels are significantly higher than those of women in households with above average incomes. The odds of intimate partner violence for women in both social rented and private rented housing are significantly higher than those for women in owner/occupier housing.

Household income is a more effective predictor of intimate partner violence than household poverty status. When household poverty status is removed from the model this does not affect the model fit but increases the effect size of residing in households with low income levels (table 5.21).

The final model which includes two household economic resource factors predicts intimate partner violence more accurately than the model which specified women's own/individual economic resource factors (table 5.12). The AUC statistic reaches the Hosmer and Lemeshow (2000) threshold for 'acceptable discrimination' (0.7-0.8) (see *Methodology* section 4.7). For this population therefore household economic resources are highly significant in predicting intimate partner violence.

Table 5.21: Relationship between household economic resources and IPV

	Full Model				Final Model			
	OR (exp(β))	SE (β)	Sig.		OR (exp(β))	SE (β)	Sig.	
Intercept	.071	.140			.070	.139		
Low HH (<£10,000)	1.308	.298	.368		1.532	.195	.029	*
HH: £10-£29,999	1.297	.141	.065		1.307	.140	.055	
Above average HH (£30,000 or more) (ref cat)	-	-	-		-	-	-	
Social rented	1.699	.161	.001	***	1.724	.160	.001	***
Private rented	1.765	.135	<.001	***	1.774	.135	<.001	***
Owner/occupier (ref cat)	-	-	-		-	-	-	
Poverty: at or below	1.224	.230	.380					
Poverty: above (ref cat)	-	-	-					
Two or more adults HH	.409	.122	<.001	***	.411	.120	<.001	***
single-adult HH (ref cat)	-	-	-					
McFadden R^2 = .050: AUC = .704					McFadden R^2 = .050: AUC = .703			

5.7 Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?

Here, neighbourhood economic resources are operationalised using two factors: level of neighbourhood income deprivation; and level of neighbourhood employment deprivation. Each factor, and its possible association with intimate partner violence is explored individually (H10 and H11).

H10: Neighbourhood (LSOA) income deprivation is not significantly associated with intimate partner violence.

This hypothesis can be rejected: the odds of intimate partner violence for women in the most income deprived neighbourhoods are significantly higher than those for women in less income deprived neighbourhoods⁵³.

Although income deprivation is measured at the LSOA, rather than the individual, level, multilevel analysis designed to explore whether intimate partner violence in the BCS 2008/09 differs significantly across LSOAs found no such significant difference (table 5.22⁵⁴). Thus this hierarchical structure in the data can be considered to be ‘superfluous’⁵⁵ (Snijder, 2005) in the analysis of this factor.

A higher proportion of women experiencing intimate partner violence is located in the most income deprived LSOA compared to the proportion experiencing intimate partner violence in any other LSOA (table 5.23). The odds of intimate partner

⁵³ For a description of ‘neighbourhoods’ as LSOAs and the construction of the binary variable for a decile measure see *Methodology* section 4.6

⁵⁴ Analysis carried out using *MLwiN* 2.2

⁵⁵ i.e. does not need to be taken account of in the estimation of the error variance of parameter estimates.

violence for women in the most income deprived LSOA are 1.7 times higher than those of women in any other LSOA (table 5.24).

Table 5.22: Result of two-level random intercept model where the second level is designated as LSOA with chi-square test of significance (1df) for disclosure of IPV

Any recent IPV
$\text{anyIPV}_{ij} \sim \text{Binomial}(\text{denom}_{ij}, \pi_{ij})$
$\text{Logit}(\pi_{ij}) = \beta_{0j} \text{Constant}$
$\beta_{0j} = \beta_0(-2.768(.037)) + u_{0j}$
$[u_{0j}] \sim N(0, \Omega_u): \Omega_u = [\sigma_{u0}^2]$
$[\sigma_{u0}^2] = 0.000(.000)$
$\text{Var}(\text{anyIPV}_{ij} \mid \pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{denom}_{ij}$
<i>Note:</i> ‘denom’ is a constant vector of 1.
Estimate method: 2 nd order Predictive Quasi-Likelihood (PQL)
Chi-square test of sig. $(0.000/.000)^2 = 0 \rightarrow p=1$: no significant difference across LSOAs
Estimated Variance Partition Coefficient (VPC) $= \sigma_{u0}^2/(\sigma_{u0}^2 + 3.29)$
$= 0.000/(0.000 + 3.29)$
$= 0.000 \rightarrow$ level of residual variance attributable to the LSOA level.

Table 5.23: Estimated percentage of women disclosing IPV by neighbourhood income deprivation

	<i>England</i>		
	Number in sample	Estimated % (nat. population)	SE
Most income deprived LSOA	994	7.9	(1.0)
All other LSOAs	10,880	4.9	(0.3)
Total	11,874	-	-

Table 5.24: Relationship between neighbourhood income deprivation and IPV

	<i>England</i>				
	OR (exp(β))	SE (β)	Sig.		Odds of IPV compared to women in all other neighbourhoods
Intercept	.052	.060			-
10% most income deprived LSOAs	1.660	.147	.001	***	1.6 times greater
All other LSOAs (ref cat)	-	-			
McFadden R ² =.003: AUC = .534					

H11: Neighbourhood (LSOA) employment deprivation is not significantly associated with intimate partner violence.

This hypothesis can be rejected: the odds of intimate partner violence for women in the most employment deprived neighbourhoods are significantly higher than those for women in less employment deprived neighbourhoods.

As with neighbourhood income deprivation, neighbourhood here is also defined as Lower Super Output Area (LSOA). The hierarchical structure of the data is also considered superfluous to the analysis because there is no significant difference found in intimate partner violence across LSOAs for this population (see table 5.22 above).

A higher proportion of women experiencing intimate partner violence is located in the most employment deprived LSOA compared to the proportion experiencing intimate partner violence in any other LSOA (table 5.25). The odds of intimate partner violence for women in the most employment deprived LSOAs are 1.3 times higher than those for women in any other LSOA (table 5.26).

Table 5.25: Estimated percentage of women disclosing IPV by neighbourhood employment deprivation

	<i>England</i>		
	Number in sample	Estimated % (nat. population)	SE
Most employment deprived LSOAs	1,131	6.6	(0.7)
All other LSOAs	10,743	5.0	(0.3)
Total (N)	11,874	-	-

Table 5.26: Relationship between neighbourhood employment deprivation and IPV

	OR (exp(β))	SE (β)	<i>England</i> Sig.	Odds of IPV compared to women in all other English neighbourhoods
Intercept	.050	.070		-
10% most employment deprived LSOAs	1.331	.145	.048 *	1.3 times
All other LSOAs (ref cat)	-	-	-	
McFadden R ² =.001: AUC = .524				

5.8 Is there an association between specialist violence against women service provision and intimate partner violence in the UK?

H12: Neighbourhood (LAA) provision of specialist violence against women services is not significantly associated with intimate partner violence.

No evidence is found to reject this hypothesis: there is no evidence of significantly differing odds of intimate partner violence for women living in LAAs with specialist service provision compared to those women living in LAAs without specialist service provision.

A variable which allocates women to one of two categories representing whether or not specialist violence against women service provision is available in the Local Authority Area (LAA) they reside in was constructed ('one or more services available' or 'no service available') and added to the BCS 2008/09 dataset for this analysis (see *Methodology* section 4.6). The data on the number of specialist violence against women services in each Local Authority Area was kindly supplied by the authors of the Map of Gaps project (Coy, Kelly and Foord, 2009).

Service provision is measured at the LAA, rather than the individual, level. Multilevel analysis designed to explore whether intimate partner violence in the BCS 2008/09 differs significantly across LAAs found some evidence of variation (1.2% of the variance in intimate partner violence disclosure could be allocated to differences across LAAs), but no evidence that this variance was statistically significant ($p=0.292$) (table 5.27). Therefore, according to Snijders, (2005) the LAA level can be considered

to be 'superfluous'; i.e. the hierarchical structure of the data does not need to be taken account of in the specification of the model. However, because some level of variance is found between LAAs, two additional sets of models are run in the analysis of this question to check that taking account of the LAA level does not result in different findings (it should not if the level is indeed superfluous).

These two alternative models are run in *MLwiN* 2.2 (specialist multilevel modelling software). As discussed in *Methodology* (section 4.5), the Home Office complex sample design plan cannot be run through *MLwiN*, so the models take account of the complex design of the BCS 2008/09 using a model-based approach and a design effect approach respectively. As these approaches are less robust than the Home Office design plan and do not include correction for differential non-response bias, the statistical significance threshold for hypothesis testing is set at the 1% level instead of the 5% level for these models (see chapter 4: section 4.7).

Two-thirds of women live in a Local Authority Area with one or more specialist violence against women services. The proportion of women experiencing intimate partner violence is marginally higher where there is service provision (5.3% compared to 4.9%) (table 5.28). However, none of the binary logistic regression models (at their designated significance thresholds) find a significant difference in the odds of intimate partner violence between women in areas with service provision compared to those in areas with no service provision (tables 5.29(a) and 5.29(b)).

Table 5.27: Result of two-level random intercept model where the second level is designated as LAA with chi-square test of significance (1df) for disclosure of IPV

Any recent IPV
$\text{anyIPV}_{ij} \sim \text{Binomial}(\text{denom}_{ij}, \pi_{ij})$ $\text{Logit}(\pi_{ij}) = \beta_{0j} \text{Constant}$ $\beta_{0j} = \beta_0(-2.776(.040)) + u_{0j}$ $[u_{0j}] \sim N(0, \Omega_u): \Omega_u = [\sigma_{u0}^2] \quad [\sigma_{u0}^2] = 0.039(.037)$ $\text{Var}(\text{anyIPV}_{ij} \pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{denom}_{ij}$
Note: denom is a constant vector of 1
Estimation method: 2 nd order Predictive Quasi-Likelihood (PQL) Chi-square test of sig. $(0.039/.037)^2 = 1.111 \rightarrow p=.292$: no significant difference across neighbourhoods Estimated VPC = $\sigma_{u0}^2/(\sigma_{u0}^2 + 3.29)$ = $0.039/(0.039 + 3.29)$ = 0.012 – 1.2% of residual variance can be attributed to variance across Local Authorities

Table 5.28: Estimated percentage of women disclosing IPV by service provision (LAA)

	Number in sample	Estimated % (nat. population)	SE
One or more services	8,778	5.3	(0.3)
No services	4,142	4.9	(0.4)
Total (N)	12,920	-	-

Table 5.29(a): Relationship between specialist service provision and IPV: SPSS single-level model

	OR (exp(β))	SE (β)	Sig.
Intercept	.051	.098	
One or more services	1.097	.117	.428
No services (ref cat)	-	-	-

Table 5.29(b): Relationship between specialist service provision and IPV: MLwiN multilevel models

	MLwiN 2-level model (design-based approach)			MLwiN 2-level model (design effect (1.2) approach)		
	OR (exp(β))	SE (β)	Sig.	OR (exp(β))	SE (β)	Sig.
Intercept	.054	.109		.052	.097	
One or more services	1.224	.093	.030	1.255	.112	.043
No services (ref cat)	-	-	-	-	-	-

5.9 Are women's employment and earned income the most important economic resources associated with intimate partner violence?

H13: Women's current employment status, socio-economic class and earned income are not more significant in their association with intimate partner violence than other factors representing economic resources.

This hypothesis can be rejected: however, this is not because the factors representing women's own/individual economic resources are found to be more significant in their association with intimate partner violence, but because they are found to be less significant compared to household economic resources.

Taking account of the demographic characteristics of women which are significantly correlated to those factors representing economic resources does not substantively alter the findings.

The effects of all nine factors are considered in conjunction with each other utilising the theory-led approach to model specification such that current employment status, earned income and socio-economic class are retained even when they do not have a statistically significant association with intimate partner violence over and above the effects of other factors specified. Household income, housing tenure, household poverty status, level of neighbourhood income and employment deprivation, and

service provision are subject to a manual step-wise deletion process where no significant association is found (see *Methodology* section 4.7)⁵⁶.

The final model (table 5.30: final model) finds one factor at the individual level: socio-economic class, to be significant over and above the effects of the other factors specified. Women in socio-economic class III (lower supervisory and technical occupations) are found to have significantly higher odds of intimate partner violence than women in the higher managerial, administrative and professional occupations class. This suggests occupational status, rather than current employment status may be more significant in association with intimate partner violence.

Neither women's current employment status nor women's earned income are significantly associated with intimate partner violence over and above the effects of the other factors specified in the final model.

Two household economic resource factors are found to be significantly associated with intimate partner violence in the final model: household income and housing tenure. The odds of intimate partner violence for women with low household incomes are 1.8 times higher than those for women with above average household incomes. The odds of intimate partner violence for women with below average household incomes are 1.5 times higher than those for women with above average household incomes. The odds of intimate partner violence for women in social rented and private rented housing are 1.7 times higher and double, respectively, those for women in owner/occupier housing.

⁵⁶ The stepwise deletion procedure removed, in order: household poverty status; neighbourhood income deprivation; neighbourhood employment deprivation; and service provision.

No significant association is found between: household poverty status; the level of neighbourhood income and employment deprivation; or specialist service provision and intimate partner violence over and above the effects of the other factors specified. These are sequentially removed in the process of specifying the final model.

The model fit statistics are reasonable, with an AUC of 0.716 reaching Hosmer and Lemeshow's (2000) threshold for acceptable discrimination (table 5.30: final model).

It is also noted that the number of adults in the household is significantly associated to intimate partner violence over and above the effects of the economic resource factors specified.

Table 5.30: Relationship between all economic resources and IPV

	Full Model				Final Model		
	OR (exp(β))	SE (β)	Sig.		OR (exp(β))	SE (β)	Sig.
Intercept	.056	.188			.064	.152	
Unemployed	1.352	.321	.348		1.310	.311	.384
Economically inactive	.886	.203	.552		.880	.196	.514
Employed (ref cat)	-	-	-		-	-	-
WI: Economically inactive (£0)	-	-	-		-	-	-
WI: unemployed (£0)	-	-	-		-	-	-
WI: Low (<£10,000)	.730	.238	.187		.749	.230	.209
WI: £10-£19,999	.781	.183	.177		.773	.179	.151
WI: above average (£20,000 or more) (ref cat)	-	-	-		-	-	-
Class I	.943	.310	.849		.960	.297	.890
Class II	1.113	.191	.574		1.082	.184	.667
Class III	1.607	.244	.052		1.647	.238	.036 *
Class IV	1.141	.260	.612		1.080	.256	.765
Class V	.951	.215	.817		.926	.211	.714
Class VI (ref cat)	-	-	-		-	-	-
Low HH (< £10,000)	1.931	.388	.090		1.784	.257	.025 *
HH: £10-£29,999	1.513	.176	.019 *		1.480	.169	.020 *
Above average HH (£30,000 or more) (ref cat)	-	-	-		-	-	-
Social rented	1.678	.208	.013 *		1.710	.192	.005 **
Private rented	1.922	.153	<.001 ***		1.990	.149	<.001 ***
Owner/occupier (ref cat)	-	-	-		-	-	-
HH at / below poverty	.918	.275	.757				
Above poverty (ref cat)	-	-	-				
Most income deprived LSOA	1.210	.207	.356				
Other LSOAs (ref cat)	-	-	-				
Most employment deprived LSOA	.730	.199	.114				
Other LSOAs (ref cat)	-	-	-				
One or more services	1.206	.139	.177				
No services	-	-	-				
Two or more adults HH	.442	.144	<.001 ***				
single-adult HH (ref cat)	-	-	-				
McFadden R^2 = .062: AUC = .714					McFadden R^2 = .062: AUC = .716		

There are a number of demographic characteristics of women which are significantly correlated with the factors representing economic resources (see *Methodology* section 4.6): the effect of these needs to be accounted for.

When the effects of: age; highest level of education; children in the household; and ethnicity are taken account of, the factors retained in the final model (table 5.31: final model) are the same as those retained before these demographic characteristics were specified (table 5.30: final model).

None of the factors representing demographic characteristics is itself a significant predictor of intimate partner violence over and above the effects of the factors representing economic resources. However the final model has a better AUC fit statistic (from an AUC of 0.716 to an AUC of 0.722) indicating that the inclusion of these factors not only takes account of the correlation between demographics and economic resource factors, but additionally contributes in some way to enabling a more accurate prediction of intimate partner violence. The AUC statistic is now well within Hosmer and Lemeshow (2000) acceptable discrimination category.

It is again noted that number of adults in the household is significantly associated with intimate partner violence over and above the economic resource factors specified.

Table 5.31: Relationship between all economic resources and IPV, taking account of demographic characteristics

	Full Model				Final Model			
	OR (exp(β))	SE (β)	Sig.		OR (exp(β))	SE (β)	Sig.	
Intercept	.068	.398			.081	.345		
Unemployed	1.161	.325	.647		1.126	.314	.706	
Economically inactive	.786	.204	.237		.791	.197	.235	
Employed (ref cat)	-	-	-		-	-	-	
WI: Economically inactive (£0)	-	-	-		-	-	-	
WI: unemployed (£0)	-	-	-		-	-	-	
WI: Low (<£10,000)	.647	.244	.074		.672	.235	.092	
WI: £10-£19,999	.711	.188	.070		.712	.183	.064	
WI: above average (£20,000 or more) (ref cat)	-	-	-		-	-	-	
Class I	.959	.319	.895		.949	.306	.865	
Class II	1.057	.202	.782		1.021	.195	.915	
Class III	1.606	.248	.056		1.641	.242	.040	*
Class IV	1.097	.274	.737		1.049	.269	.859	
Class V	.913	.213	.668		.888	.208	.567	
Class VI (ref cat)	-	-	-		-	-	-	
Low HH (< £10,000)	2.110	.415	.072		1.777	.264	.030	*
HH: £10-£29,999	1.540	.177	.015	*	1.498	.171	.018	*
Above average HH (£30,000 or more) (ref cat)	-	-	-		-	-	-	
Social rented	1.673	.214	.016	*	1.648	.200	.012	*
Private rented	1.799	.182	.001	***	1.627	.176	.001	***
Owner/occupier (ref cat)	-	-	-		-	-	-	
HH at / below poverty	.821	.303	.516					
Above poverty (ref cat)	-	-	-					
Most income deprived LSOA	1.206	.213	.380					
Other LSOAs (ref cat)	-	-	-					
Most employment deprived LSOA	.686	.203	.063					
Other LSOAs (ref cat)	-	-	-					
One or more services	1.243	.140	.121					
No services	-	-	-					
Ed: none	.987	.202	.948		1.003	.192	.989	
Ed: GCSE	1.301	.177	.138		1.320	.172	.106	
Ed: A/AS-Level	1.377	.212	.132		1.345	.208	.155	
ED: Degree/diploma (ref cat)	-	-	-		-	-	-	

Children in HH	1.150	.143	.329		1.130	.136	.370	
No children in HH (ref cat)	-	-	-		-	-	-	
Non-White	.995	.244	.851		1.013	.240	.957	
White (ref cat)	-	-	-		-	-	-	
Two or more adults HH	.453	.153	<.001	***	.446	.146	<.001	***
single-adult HH (ref cat)	-	-	-		-	-	-	
Age	.992	.007	.249		.991	.007	.180	
McFadden R ² =.066: AUC = .720					McFadden R ² =.066: AUC = .722			

5.10 Is being in a violent relationship associated with economic inequality?

The BCS 2008/09 is highly unusual in its inclusion of a variable which enables women's relationship status at the point they complete the survey to be identified and disaggregated from their experiences within intimate partnerships during the past 12 months. The question asks those respondents who have reported recent intimate partner violence whether, at point of survey, they are still with the partner who last abused them or whether they have exited the last recently violent relationship.

Nineteen percent of respondents disclosing intimate partner violence in the past 12 months reported remaining in their most recently violent relationship at point of survey (an estimated 25% of the population) (table 5.32(b)). This means that an estimated 1.2% of the national working-age population of women in England and Wales are currently in violent relationships (table 5.32(a)).

Table 5.32(a): Estimated percentage of women in each of the three categories representing relationship status at point of survey

	Number in sample	Percentage of sample	Estimated % (nat. population)	SE
IPV in past 12 months & exited at point of survey	554	4.3	3.5	(0.2)
IPV in past 12 months & remain at point of survey	132	1.0	1.2	(0.1)
No IPV in past 12 months: control population	12,157	94.7	95.4	(0.2)
Total	12,843	100.0	100.0	-

Table 5.32(b): Estimated percentage of women disclosing IPV by relationship status at point of survey

	Number in sample	Percentage in sample	Estimated % (nat. population)	SE
IPV in past 12 months: exited at point of survey	554	80.8	74.8	(2.5)
IPV in past 12 months: remains at point of survey	132	19.2	25.2	(2.5)
Total	686	100.0	100.0	-

H14: Women’s economic inequality is not more significant in its association with remaining in relationships that are recently violent compared to relationships with no history of recent violence.

There is some evidence to reject this hypothesis: the odds of intimate partner violence are significantly greater for women residing in low income households compared to households with above average incomes and for women residing in social rented housing compared to owner/occupier housing. This suggests that the households in which women remaining in violent relationships reside have fewer economic resources than women in the control population⁵⁷ and thus that economic inequality can be linked to intimate partner violence.

The odds of intimate partner violence for women in households with a low income are almost four times higher than those for women in households with an above average income. The odds of intimate partner violence for women in social rented housing are double those for women in owner/occupier housing (table 5.33).

⁵⁷ The control population consists of those women with no experience of intimate partner violence in the past 12 months. See section 5.1 above.

However, the association between threshold poverty at the household level and remaining in a violent relationship complicates this finding. The odds of intimate partner violence for women in households at or below the poverty threshold are significantly lower than those for women in households above the poverty threshold. This suggests that women in violent relationships are significantly less likely to be residing in officially poor households compared to the control population.

The odds of intimate partner violence for women residing in households at or below the poverty threshold are 65% lower than those for women residing in households above the poverty threshold (table 5.33).

This suggests that a low household income is significantly associated with increased odds of intimate partner violence, whereas an officially 'poor' household is not. Household poverty status is premised on the number of adults and the number of children in a household. The number of adults, but not the number of children, in a household is also found to be significant in predicting intimate partner violence for this population over and above the economic resource factors retained in the model (table 5.33). This may account for some of this effect. The odds of intimate partner violence are 2.5 times higher for women located in households with two or more adults compared with single adult households.

Women's current employment status, women's earned income, and women's socio-economic class are not found to be significantly associated with intimate partner violence in this population of women remaining in violent relationships and those experiencing no recent intimate partner violence. For the population, in addition,

none of the neighbourhood economic resource factors are significantly associated with intimate partner violence, over and above the effects of the other factors.

The AUC model fit statistic (0.673) does not reach Hosmer and Lemeshow's (2000) acceptable discrimination threshold of 0.7, indicating that economic factors are not able to predict intimate partner violence for this sub-population as accurately as they did for the national working-age population which included both women remaining in violent relationships and those who had exited recently violent relationships.

Table 5.33: Relationship between all economic resources and IPV (remains)

	Full Model			⁵⁸ Final Model		
	OR (exp(β))	SE (β)	Sig.	OR (exp(β))	SE (β)	Sig.
Intercept	.002	.933		.003	.830	
Unemployed	1.823	.550	.275	1.788	.539	.281
Economically inactive	.592	.396	.186	.583	.379	.156
Employed (ref cat)	-	-	-	-	-	-
WI: Economically inactive (£0)	-	-	-	-	-	-
WI: unemployed (£0)	-	-	-	-	-	-
WI: Low (<£10,000)	.433	.483	.083	.440	.466	.078
WI: £10-£19,999	1.025	.372	.947	1.009	.358	.980
WI: above average (£20,000 or more) (ref cat)	-	-	-	-	-	-
Class I	.889	.717	.869	.872	.714	.848
Class II	1.677	.403	.199	1.661	.401	.206
Class III	1.217	.544	.718	1.197	.542	.741
Class IV	1.071	.557	.901	1.152	.522	.787
Class V	.812	.431	.629	.788	.428	.577
Class VI (ref cat)	-	-	-	-	-	-
Low HH (< £10,000)	3.765	.578	.022 *	3.669	.574	.024 *
HH: £10-£29,999	1.231	.298	.484	1.146	.296	.645
Above average HH (£30,000 or more) (ref cat)	-	-	-	-	-	-
Social rented	2.080	.367	.046 *	2.190	.355	.027 *
Private rented	1.956	.386	.082	2.029	.383	.065
Owner/occupier (ref cat)	-	-	-	-	-	-
HH at / below poverty	.387	.514	.065	.347	.514	.040 *
Above poverty (ref cat)	-	-	-	-	-	-
Most income deprived LSOA	1.651	.344	.145			
Other LSOAs (ref cat)	-	-	-			
Most employment deprived LSOA	.414	.409	.031 *			
Other LSOAs (ref cat)	-	-	-			
One or more services	1.106	.282	.721			
No services	-	-	-			
Ed: none	.504	.574	.233	.485	.556	.193
Ed: GCSE	1.341	.409	.472	1.287	.402	.530
Ed: A/AS-Level	1.043	.430	.922	1.027	.416	.949
ED: Degree/diploma	-	-	-	-	-	-

⁵⁸ Factors sequentially removed in a manual step-wise deletion: neighbourhood income deprivation; neighbourhood employment deprivation; and service provision.

(ref cat)							
Children in HH	1.537	.259	.097		1.541	.254	.089
No children in HH	-	-	-		-	-	-
(ref cat)							
Non-White	.792	.468	.619		.896	.456	.809
White (ref cat)	-	-	-		-	-	-
Two or more adults	2.627	.298	.001	***	2.489	.288	.002 **
HH							
single-adult HH (ref cat)	-	-	-		-	-	-
Age	1.006	.015	.700		1.005	.015	.743
McFadden R ² =.044: AUC = .674				McFadden R ² =.040: AUC = .673			

Household structure

The findings for the model above (table 5.33) indicate that household structure, in particular the number of adults in the household, may be significant for this population.

An estimated 89% of women in violent relationships live in households with two or more adults, i.e. most women in violent relationships live with their intimate partner. A small proportion (an estimated 11%) do not cohabit with their (violent) intimate partner (table 5.34).

There is a significant difference between these two groups of women (cohabiting and non-cohabiting) on every economic resource factor (except service provision) (table 5.35(a)). For each economic resource a higher proportion of women in single adult households are located in the 'poorest' category, i.e. the lowest income, most deprived neighbourhoods, etc. Non-cohabiting women in single adult households have fewer economic resources than cohabiting women, and can be described as significantly poorer compared to cohabiting women. This is found for every unit of analysis: individual; household; and neighbourhood. For example: 16% of non-

cohabiting women are unemployed compared to 3% of cohabiting women; 75% of non-cohabiting women have earned incomes of less than £10,000 per annum compared to 27% of cohabiting women; 67% of non-cohabiting women reside in households at or below the poverty threshold, compared to 4% of cohabiting women; and 21% of non-cohabiting women reside in the most employment deprived neighbourhoods compared to 5% of cohabiting women (table 5.35(b)).

Some women in violent relationships can therefore be said to experience greater economic inequality than others depending on their household structure (i.e. whether they reside in a single adult household or a household with two or more adults).

Although all of these women are in a violent relationship at point of survey, non-cohabiting women residing in single adult households are almost three times more likely to have split up with, but returned to, the violent relationship compared to cohabiting women (an estimated 30% compared to an estimated 11%).

Remain and single adult households

Compared to women in the national population (working-age), women in non-cohabiting violent relationship who are residing in single adult households are, as a group, younger, less well educated, more likely to have children in the household, and more likely to be White (table 5.36).

If non-cohabiting women in violent relationships residing in single adult households are compared to the control population residing in single adult households, there is some evidence that non-cohabiting women in violent relationships also have fewer

economic resources than this control group. There is a significant difference between these two groups in current employment status, income level (earned and household), and household poverty status (table 5.37(a)). For each of these economic resource factors a higher proportion of women in violent relationships are located in the 'poorest' category. For example: 16% of non-cohabiting women in violent relationships are unemployed compared to 5% of women in this control population; 75% of women in non-cohabiting violent relationships have low earned and household incomes compared to 31% of women in this control population; and 67% of non-cohabiting women in violent relationships live in households at or below the poverty threshold compared to 26% of women in this control population (table 5.37(b))⁵⁹.

Remain and households with two or more adults

For cohabiting women there is some evidence that being in a violent relationship is significantly related to economic inequality. The odds of intimate partner violence for women in social rented housing are 2.8 times higher than those for women in owner/occupier housing, but this is the only significant association between economic resources and intimate partner violence found when cohabiting women in violent relationships are compared to women in the control group who also reside in households with two or more adults. Further cohabiting women in violent relationships are significantly less likely to be residing in households at or below the poverty threshold compared to women in this control population.

⁵⁹ Note that the base weight for this group is N=30: Home Office good practice recommends a base weight minimum of N=50 for regression analysis of BCS variables, hence regression analysis has not been conducted on this group.

However, the AUC model fit statistic is reasonable at 0.723, and fits within Hosmer and Lemeshow's (2000) acceptable discrimination threshold (0.7-0.8). This suggests that there is an association between economic resources and intimate partner violence for cohabiting women in violent relationships but that this may be indirect (table 5.38).

Table 5.34: Distribution of women in violent relationships by number of adults in the household

	Number in sample	Estimated % (national working-age population)	SE
Two or more adults in HH	102	89.0	(1.0)
Single adult HH	30	11.0	(1.0)
Total	132	100.0	-

Table 5.35 (a): Test of independence: number of adult in household (single or two or more) * economic resources for women in violent relationships

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	7.334	11.298	1.983	43	<.001	***
Earned income	10.800	8.973	3.097	65	<.001	***
Socio-economic class	9.412	4.679	4.323	91	.001	***
Household income	44.621	207.960	1.271	27	<.001	***
Housing tenure	10.841	14.491	1.967	41	<.001	***
Household poverty status	48.048	151.759	1.000	21	<.001	***
LSOA income deprivation	3.676	11.807	1.000	21	.002	**
LSOA employment deprivation	4.702	18.428	1.000	21	<.001	***
Service provision	0.175	1.214	1.000	21	.283	

Table 5.35(b): Estimated percentage of women in the 'poorest' category of each economic resource (remains)

	<i>Two or more adult HH</i>			<i>Single adult HH</i>		
	No. in sample	Est. % (pop)	SE	No. in sample	Est. % (pop)	SE
Women's current employment status (unemployed)	102	3.3	(0.1)	4	16.3	(4.2)
Women's earned income (<£10,000)	69	26.6	(2.4)	27	75.3	(1.8)
Women's socio-economic class (I: never worked & long-term unemployed)	89	0.5	(<.1)	29	8.1	(0.2)
Low household income (<£10,000)	91	6.7	(1.3)	27	75.3	(1.8)
Housing tenure type (social rented)	102	15.0	(2.7)	30	47.2	(7.8)
Household poverty status (at or below)	91	3.8	(1.3)	27	67.4	(4.6)
Neighbourhood income deprivation (10% most deprived)	98	6.6	(1.3)	28	21.6	(5.9)
Neighbourhood employment deprivation (10% most deprived)	98	5.1	(0.1)	28	20.7	(5.8)
Service provision (one or more)	102	59.1	(1.3)	30	64.8	(4.8)

Table 5.36: Demographic characteristics of women in non-cohabiting violent relationships and women in the national working-age population

	<i>Remain in single HH (N=30)</i>		<i>National working-age population (N=12,920)</i>	
	Estimated %	SE	Estimated %	SE
Mean age	31.53 years	(1.00)	36.95 years	(0.18)
No qualifications	17.9	(0.5)	10.5	(0.4)
GCSEs	52.0	(5.3)	29.6	(0.5)
A/AS-Levels	6.6	(0.2)	18.5	(0.5)
Degree / diploma	23.5	(5.9)	41.4	(0.7)
Children in HH	52.3	(7.9)	43.3	(0.6)
No children in HH	47.7	(7.9)	56.7	(0.6)
Non-White	6.5	(6.4)	10.1	(0.6)
White	93.5	(6.4)	89.9	(0.6)

Table 5.37(a): Test of independence: IPV or no IPV * economic resources for women in single adult households

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	12.542	4.309	1.996	2375	.014	*
Earned income	20.214	4.897	3.555	4231	.001	***
Socio-economic class	11.980	2.183	4.458	5305	.061	
Household income	22.938	13.653	1.963	2336	<.001	***
Housing tenure	5.057	1.815	1.954	1190	.164	
Household poverty status	23.059	22.021	1.000	1190	<.001	***
LSOA income deprivation	0.617	0.430	1.000	1190	.512	
LSOA employment deprivation	0.494	0.241	1.000	1190	.624	
Service provision	0.071	0.043	1.000	1190	.836	

Table 5.37(b): Estimated percentage of women in the ‘poorest’ category of each economic resource (single adult households)

	<i>IPV and single adult HH</i>			<i>No IPV and single adult HH</i>		
	No. in sample	Est. % (pop)	SE	No. in sample	Est. % (pop)	SE
Women’s current employment status (unemployed)	4	16.3	(4.2)	3,141	4.7	(0.6)
Women’s earned income (<£10,000)	27	75.3	(1.8)	2,846	31.2	(1.2)
Women’s socio-economic class (I: never worked & long-term unemployed)	29	8.1	(0.2)	3,025	4.0	(0.5)
Low household income (<£10,000)	27	75.3	(1.8)	2,846	31.2	(1.2)
Housing tenure type (social rented)	30	47.2	(7.8)	3,141	32.4	(1.0)
Household poverty status (at or below)	27	67.4	(4.6)	2,846	25.6	(1.1)
Neighbourhood income deprivation (10% most deprived)	28	21.6	(5.9)	2,887	16.2	(1.0)
Neighbourhood employment deprivation (10% most deprived)	28	20.7	(5.8)	2,887	15.9	(1.0)
Service provision (one or more)	30	64.8	(4.8)	3,146	67.0	(1.2)

Table 5.38: Relationship between economic resources and IPV (remain and two or more adult household)

	Full Model			⁶⁰ Final Model		
	OR (exp(β))	SE (β)	Sig.	OR (exp(β))	SE (β)	Sig.
Intercept	.004	1.00		.004	.877	
Unemployed	1.677	.694	.457	1.927	.676	.332
Economically inactive	.547	.428	.159	.619	.432	.266
Employed (ref cat)	-	-	-	-	-	-
WI: Economically inactive (£0)	-	-	-	-	-	-
WI: unemployed (£0)	-	-	-	-	-	-
WI: Low (<£10,000)	.391	.514	.068	.471	.468	.108
WI: £10-£19,999	1.033	.387	.933	1.076	.380	.847
WI: above average (£20,000 or more) (ref cat)	-	-	-	-	-	-
Class I	.398	1.10	.404	.404	1.08	.403
Class II	1.820	.428	.162	1.835	.420	.149
Class III	1.299	.577	.650	1.257	.578	.692
Class IV	1.106	.595	.866	1.131	.574	.830
Class V	.854	.460	.731	.826	.453	.672
Class VI (ref cat)	-	-	-	-	-	-
Low HH (< £10,000)	3.357	.784	.123			
HH: £10-£29,999	1.396	.290	.248			
Above average HH (£30,000 or more) (ref cat)	-	-	-			
Social rented	2.449	.416	.031 *	2.836	.401	.009 **
Private rented	2.142	.436	.081	2.370	.453	.057
Owner/occupier (ref cat)	-	-	-	-	-	-
HH at / below poverty	.152	.819	.022 *	.261	.675	.047 *
Above poverty (ref cat)	-	-	-	-	-	-
Most income deprived LSOA	1.288	.459	.581			
Other LSOAs (ref cat)	-	-	-			
Most employment deprived LSOA	.486	.457	.114			
Other LSOAs (ref cat)	-	-	-			
One or more services	1.184	.312	.588			
No services	-	-	-			
Ed: none	.339	.705	.125	.364	.684	.140
Ed: GCSE	1.344	.446	.508	1.362	.435	.478
Ed: A/AS-Level	1.108	.456	.822	1.137	.440	.770

⁶⁰ Factors sequentially removed in a manual step-wise deletion: service provision; neighbourhood income deprivation; neighbourhood employment deprivation; household income level.

ED: Degree/diploma (ref cat)	-	-	-		-	-	-	
Children in HH	1.765	.261	.030	*	1.756	.259	.031	*
No children in HH (ref cat)	-	-	-		-	-	-	
Non-White	1.052	.461	.912		1.165	.462	.740	
White (ref cat)	-	-	-		-	-	-	
Age	1.015	.017	.384		1.015	.017	.368	
McFadden R^2 = .051: AUC = .695					McFadden R^2 = .045: AUC = .723			

5.11 Does exiting a violent relationship impact on women's economic inequality?

H15: Women's economic inequality is not more significant in its association with exiting relationships that have been recently violent compared to relationships with no history of recent violence.

There is some evidence to reject this hypothesis: the odds of intimate partner violence are significantly greater for women residing in households with below average incomes compared to households with above average incomes; and for women residing in social rented and private rented housing compared to owner/occupier housing. This suggests women who have exited recently violent relationships have fewer economic resources compared to women in the control population, and thus can be said to experience greater economic inequality compared to these women.

The odds of intimate partner violence for women in households with a below average income are double those for women in households with an above average income. The odds of intimate partner violence for women in social rented and private rented housing are 1.7 times higher than those for women in owner/occupier housing (table 5.39).

However, this association is complicated. The odds of intimate partner violence for women with below average earned income are significantly lower than those for women with above average earned income. The odds of intimate partner violence for women with low earned incomes, however, are not significantly different to

those for women with above average earned incomes. The odds of intimate partner violence for women with below average earned income are 56% lower than those for women with above average earned incomes (table 5.39).

Similarly, whilst the odds of intimate partner violence are significantly higher for women with below average household incomes, those for women with low household incomes are not found to be significantly different to those for women with above average household incomes.

Neither women's current employment status or women's socio-economic class are found to be significantly associated with intimate partner violence for this population over and above the effects of other factors specified. No neighbourhood economic resource factors are found to be significantly associated with intimate partner violence for this population either.

The AUC model fit statistic is well within Hosmer and Lemeshow's (2000) acceptable discrimination threshold (0.7-0.8) at 0.777 (table 5.39: final model). This suggests that, although clearly complex, there is a relatively strong association between economic resources and intimate partner violence for women who have exited recently violent relationships.

The number of adults in the household is also noted to be significantly associated with intimate partner violence over and above the effects of the economic resource factors specified. Here, the odds of intimate partner violence for women residing in a household with two or more adults are found to be 75% lower than those for women residing in single adult households.

Table 5.39: Relationship between economic resources and IPV (exited)

	Full Model				⁶¹ Final Model			
	OR (exp(β))	SE (β)	Sig.		OR (exp(β))	SE (β)	Sig.	
Intercept	.102	.437			.113	.393		
Unemployed	1.035	.410	.933		1.071	.389	.860	
Economically inactive	.861	.261	.567		.884	.251	.622	
Employed (ref cat)	-	-	-		-	-	-	
WI: Economically inactive (£0)	-	-	-		-	-	-	
WI: unemployed (£0)	-	-	-		-	-	-	
WI: Low (<£10,000)	.787	.302	.428		.831	.289	.521	
WI: £10-£19,999	.426	.246	.001 ***		.437	.240	.001 ***	
WI: above average (£20,000 or more) (ref cat)	-	-	-		-	-	-	
Class I	1.004	.405	.991		.995	.379	.998	
Class II	.935	.262	.797		.883	.249	.618	
Class III	1.652	.327	.125		1.700	.315	.092	
Class IV	1.152	.344	.681		1.053	.340	.879	
Class V	.963	.282	.893		.915	.272	.745	
Class VI (ref cat)	-	-	-		-	-	-	
Low HH (< £10,000)	1.541	.633	.495		1.774	.357	.109	
HH: £10-£29,999	2.055	.220	.001 ***		2.030	.204	.001 ***	
Above average HH (£30,000 or more) (ref cat)	-	-	-		-	-	-	
Social rented	1.829	.268	.024 *		1.713	.538	.035 *	
Private rented	1.733	.225	.015 *		1.724	.545	.012 *	
Owner/occupier (ref cat)	-	-	-		-	-	-	
HH at / below poverty	1.218	.433	.648					
Above poverty (ref cat)	-	-	-					
Most income deprived LSOA	1.052	.267	.849					
Other LSOAs (ref cat)	-	-	-					
Most employment deprived LSOA	.759	.221	.211					
Other LSOAs (ref cat)	-	-	-					
One or more services	1.127	.161	.458					
No services	-	-	-					
Ed: none	.888	.248	.632		.913	.232	.695	

⁶¹ Factors sequentially removed in a manual step-wise deletion: neighbourhood income deprivation; household poverty status; neighbourhood employment deprivation; and service provision.

Ed: GCSE	1.239	.209	.305		1.300	.200	.190	
Ed: A/AS-Level	1.487	.264	.133		1.427	.256	.131	
ED: Degree/diploma (ref cat)	-	-	-		-	-	-	
Children in HH	.907	.164	.351		.932	.155	.651	
No children in HH (ref cat)	-	-	-		-	-	-	
Non-White	.973	.290	.926		1.007	.286	.982	
White (ref cat)	-	-	-		-	-	-	
Two or more adults HH	.250	.202	<.001	***	.251	.183	<.001	***
single-adult HH (ref cat)	-	-	-		-	-	-	
Age	.980	.008	.980		.979	.008	.005	**
McFadden R^2 = .125: AUC = .779					McFadden R^2 = .123: AUC = .777			

Household structure

The findings for the model above (table 5.39) indicate that household structure may also be significant for the association between economic inequality and exiting a recently violent relationship.

An estimated 58% of women who have exited recently violent relationships live in households with two or more adults (including new (non-violent) partners), and an estimated 42% live in single adult households (table 5.40).

Exited and single adult households

There is a significant difference in current employment status; earned income; household income; housing tenure; household poverty status; and level of neighbourhood employment deprivation between the group of women who have exited and reside in single adult households and the group who have exited and reside in households with two or more adults. (table 5.41(a)). The highest proportion of women in the 'poorest' category for each of these economic resource factors

depends on the unit of analysis. For individual economic resources (current employment status and earned income) a higher proportion of exited women in households with two or more adults are located in the poorest category. For the household and neighbourhood economic resources, a higher proportion of exited women in single adult households are located in the poorest categories (table 5.41(b)). This suggests that women with higher earned incomes exit violent relationships and set up their own household whilst simultaneously, single adult households are poorer than those which have two or more adults residing in them.

If exited women residing in single adult households are compared with women in the control population who also reside in single adult households, there is little evidence that exited women have significantly fewer economic resources (i.e. are poorer) than women in this control population.

Only socio-economic class is found to be significantly associated with intimate partner violence for women in single adult households. The odds of intimate partner violence for women in class III (lower supervisory and technical occupations) are 2.4 times higher than those for higher professional, administrative and managerial women (class VI). As expected from these findings, the model fit is not very good: the AUC statistic fails to reach Hosmer and Lemeshow's (2000) acceptable discrimination threshold at 0.649 (table 5.42: final model). Economic inequality is not significantly associated with exiting violent relationships when only women residing in single adult households are considered.

Whilst economic resource factors are not significant, it is noted that children in the household and age are found to be significantly associated with intimate partner

violence over and above the effects of women's current employment status, earned income and socio-economic class. The odds of intimate partner violence for women with children in the household are 1.6 times higher than those for women with no children in the household. The odds of intimate partner violence decrease by 2% for every year older a woman is. Women who have exited violent relationships and reside in single adult households are therefore more likely to have children in the household and to be younger than women in the control population residing in single adult households (table 5.42: final model).

Exited and households with two or more adults

For those women who have exited recently violent relationships and reside in households with two or more adults, there is stronger evidence that they have fewer economic resources (and thus are poorer) than women in the control population who reside in households with two or more adults. This is, however, premised only on household economic resources. No significant difference in the odds of intimate partner violence are found for individual, or neighbourhood, economic resources.

The odds of intimate partner violence for women with below average household incomes are almost double those for women with above average household incomes. The odds of intimate partner violence for women in social rented housing are triple, and in private rented housing are double, those for women in owner/occupier housing (table 5.43: final model).

The AUC model fit statistic is also reasonable at 0.711, fitting within Hosmer and Lemeshow's (2000) acceptable discrimination threshold (0.7-0.8) (table 5.43: final model). This suggests that there may be an association between economic inequality

and exiting recently violent relationships, which is disguised by residence in single adult households because they are, overall, poorer than households with two or more adults residing in them (tables 5.48(a) and 5.48(b)).

Table 5.40: Distribution of women in violent relationships by number of adults in the household

	Number in sample	Estimated % (national working-age population)	SE
Two or more adults in HH	201	57.8	(2.3)
Single adult HH	353	42.2	(2.3)
Total	554	100.0	-

Table 5.41(a): Test of independence: Single or two or more adult household * economic resources for exited women

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	23.521	10.719	1.701	321	<.001	***
Earned income	45.268	9.807	3.303	624	<.001	***
Socio-economic class	7.074	1.267	4.488	848	.279	
Household income	91.284	29.125	1.905	360	<.001	***
Housing tenure	21.251	9.600	1.974	373	<.001	***
Household poverty status	35.782	31.415	1.000	189	<.001	***
LSOA income deprivation	1.505	1.155	1.000	189	.284	
LSOA employment deprivation	10.185	10.115	1.000	189	.002	**
Service provision	1.190	1.037	1.000	189	.310	

Table 5.41(b): Estimated percentage of women in the 'poorest' category of each economic resource (exited)

	<i>Exited and single adult HH</i>			<i>Exited and two or more adult HH</i>		
	No. in sample	Est. % (pop)	SE	No. in sample	Est. % (pop)	SE
Women's current employment status (unemployed)	353	5.7	(0.8)	200	5.9	(0.7)
Women's earned income (<£10,000)	324	38.6	(2.9)	122	47.2	(2.8)
Women's socio-economic class (I: never worked & long-term unemployed)	335	5.3	(1.1)	161	4.2	(0.8)
Low household income (<£10,000)	324	38.6	2.9	141	11.9	(1.6)
Housing tenure type (social rented)	353	39.9	(2.9)	198	23.1	(2.0)
Household poverty status (at or below)	324	36.8	(2.9)	141	12.7	(1.7)
Neighbourhood income deprivation (10% most deprived)	321	17.4	(2.5)	184	13.5	(1.7)
Neighbourhood employment deprivation (10% most deprived)	321	18.4	(2.3)	184	8.8	(1.2)
Service provision (one or more)	353	70.1	(1.8)	201	65.7	(1.9)

Table 5.42: Relationship between all economic resources and IPV (exited and single adult household)

	Full Model			⁶² Final Model		
	OR (exp(β))	SE (β)	Sig.	OR (exp(β))	SE (β)	Sig.
Intercept	.098	.548		.133	.358	
Unemployed	.625	.567	.407	.877	.434	.762
Economically inactive	1.344	.362	.414	1.245	.317	.488
Employed (ref cat)	-	-	-	-	-	-
WI: Economically inactive (£0)	-	-	-	-	-	-
WI: unemployed (£0)	-	-	-	-	-	-
WI: Low (<£10,000)	.815	.415	.623	.750	.382	.451
WI: £10-£19,999	.677	.365	.286	.763	.309	.383
WI: above average (£20,000 or more) (ref cat)	-	-	-	-	-	-
Class I	1.012	.428	.978	.882	.383	.743
Class II	1.243	.296	.462	1.319	.263	.292
Class III	2.388	.323	.007 **	2.125	.315	.017 *
Class IV	1.326	.401	.482	1.309	.386	.486
Class V	1.754	.329	.088	1.754	.347	.106
Class VI (ref cat)	-	-	-	-	-	-
Low HH (< £10,000)	.433	.713	.241			
HH: £10-£29,999	1.704	.329	.106			
Above average HH (£30,000 or more) (ref cat)	-	-	-			
Social rented	.900	.360	.771			
Private rented	1.110	.271	.700			
Owner/occupier (ref cat)	-	-	-			
HH at / below poverty	3.462	.671	.065			
Above poverty (ref cat)	-	-	-			
Most income deprived LSOA	.726	.283	.258			
Other LSOAs (ref cat)	-	-	-			
Most employment deprived LSOA	.904	.225	.653			
Other LSOAs (ref cat)	-	-	-			
One or more services	1.262	.183	.203			
No services	-	-	-			

⁶² Factors sequentially removed in a manual step-wise deletion: Housing tenure; neighbourhood employment deprivation; service provision; household income level; poverty status; and neighbourhood income deprivation.

Ed: none	.923	.300	.789	.939	.305	.837	
Ed: GCSE	1.021	.282	.940	1.024	.309	.939	
Ed: A/AS-Level	.975	.263	.923	1.113	.253	.672	
ED: Degree/diploma (ref cat)	-	-	-	-	-	-	
Children in HH	1.467	.242	.113	1.599	.213	.028	*
No children in HH (ref cat)	-	-	-	-	-	-	
Non-White	1.684	.313	.096	1.513	.337	.220	
White (ref cat)	-	-	-	-	-	-	
Age	.978	.009	.010	.980	.007	.004	**
McFadden R^2 = .057: AUC = .668				McFadden R^2 = .039: AUC = .649			

Table 5.43: Relationship between all economic resources and IPV (exited and two or more adult households)

	Full Model				⁶³ Final Model			
	OR (exp(β))	SE (β)	Sig.		OR (exp(β))	SE (β)	Sig.	
Intercept	.033	.606			.034	.547		
Unemployed	2.274	.448	.067		2.177	.441	.078	
Economically inactive	.628	.411	.258		.648	.396	.275	
Employed (ref cat)	-	-	-		-	-	-	
WI: Economically inactive (£0)	-	-	-		-	-	-	
WI: unemployed (£0)	-	-	-		-	-	-	
WI: Low (<£10,000)	.875	.435	.760		.965	.426	.934	
WI: £10-£19,999	.280	.395	.001 ***		.314	.383	.003 **	
WI: above average (£20,000 or more) (ref cat)	-	-	-		-	-	-	
Class I	1.061	.667	.929		1.167	.625	.805	
Class II	.701	.408	.383		.655	.399	.290	
Class III	1.241	.516	.676		1.463	.481	.429	
Class IV	.987	.541	.980		.928	.533	.888	
Class V	.519	.391	.094		.477	.392	.059	
Class VI (ref cat)	-	-	-		-	-	-	
Low HH (< £10,000)	3.154	.820	.162		2.685	.526	.061	
HH: £10-£29,999	1.926	.269	.015 *		1.909	.250	.010 **	
Above average HH (£30,000 or more) (ref cat)	-	-	-		-	-	-	
Social rented	3.206	.365	.001 ***		2.934	.344	.002 **	
Private rented	2.094	.348	.034 *		2.022	.333	.035 *	
Owner/occupier (ref cat)	-	-	-		-	-	-	
HH at / below poverty	.906	.637	.878					
Above poverty (ref cat)	-	-	-					
Most income deprived LSOA	2.045	.539	.185					
Other LSOAs (ref cat)	-	-	-					
Most employment deprived LSOA	.476	.524	.157					
Other LSOAs (ref cat)	-	-	-					
One or more services	.974	.254	.917					
No services	-	-	-					
Ed: none	.786	.443	.586		.777	.422	.550	
Ed: GCSE	1.372	.284	.265		1.480	.268	.144	

⁶³ Factors sequentially removed in a manual step-wise deletion: neighbourhood income deprivation; neighbourhood employment deprivation; and service provision.

Ed: A/AS-Level	2.186	.382	.041 *	2.021	.378	.063
ED: Degree/diploma (ref cat)	-	-	-	-	-	-
Children in HH	.561	.231	.012 *	.566	.227	.012 *
No children in HH (ref cat)	-	-	-	-	-	-
Non-White	.317	.613	.061	.362	.601	.091
White (ref cat)	-	-	-	-	-	-
Age	.981	.012	.129	.980	.012	.083
McFadden R^2 = .098: AUC = .717				McFadden R^2 = .091: AUC = .711		

5.12 Is exiting a violent relationship associated with greater economic inequality than remaining?

H16: Women's economic inequality is not significantly greater for those who have exited relationships that are recently violent compared to those who remain in relationships that are recently violent.

This hypothesis can be rejected: there is evidence that the two groups differ significantly from each other on all economic resources except those at the individual level (current employment status, earned income, and socio-economic class) (and service provision) (table 5.44(a)).

For each economic resource factor on which the groups significantly differ, there are a higher proportion of women who have exited located in the 'poorest' category compared to women who remain. For example, 26% of exited women have low household incomes of less than £10,000 per annum compared to 14% of women remaining in violent relationships; 30% of women who have exited reside in social rented housing compared to 19% who remain; and 15% reside in the most income deprived neighbourhoods compared to 8% who remain in violent relationships (table 5.44(b)).

However, it is notable that on individual economic resources (employment status, earned income, and socio-economic status) there is no significant difference between the two groups. This suggests that the household is the significant unit of analysis for women experiencing recent intimate partner violence where that group is a mix of women who remain in and women who have exited violent relationships.

Household structure then may also play a significant role in further understanding the difference between these two groups.

The full group (remain and exited) of women experiencing intimate partner violence is disaggregated by household structure.

Single adult households

The group of women who remain and the group of women who have exited (when both reside in single adult households) are significantly different from each other in earned income, household income, and household poverty status (table 5.45(a)). For each of these economic resource factors the highest proportion of women located in the poorest categories are those who remain in violent relationships (table 5.45(b)). This is the small group of non-cohabiting women discussed in section 5.10 above.

Two or more adult households

The group of women who remain and the group of women who have exited (when both reside in households with two or more adults) only differ significantly from each other on household poverty status (table 5.46(a)). Three times more women who have exited recently violent relationships are residing in households at or below the poverty threshold compared to women remaining in violent relationships (table 5.46(b)).

Table 5.44 (a): Test of independence: relationship status (exit or remain) * economic resources

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	1.449	0.356	1.770	3971	.675	
Earned income	8.976	1.176	3.731	8369	.319	
Socio-economic class	9.642	1.218	4.518	10135	.299	
Household income	25.143	6.784	1.923	4313	.001	***
Housing tenure	18.926	4.677	1.912	4287	.010	**
Household poverty status	14.565	11.751	1.000	2243	.001	***
LSOA income deprivation	5.006	4.349	1.000	2243	.037	*
LSOA employment deprivation	4.544	4.008	1.000	2243	.045	*
Service provision	3.563	1.341	1.000	2243	.247	

Table 5.44 (b): Estimated percentage of women in the 'poorest' category of each economic resource (exited and remain)

	Exited			Remain		
	No. in sample	Est. % (pop)	SE	No. in sample	Est. % (pop)	SE
Women's current employment status (unemployed)	512	22.0	(2.1)	125	18.1	(2.0)
Women's earned income (<£10,000)	553	5.8	(0.7)	132	4.7	(0.8)
Women's socio-economic class (I: never worked & long-term unemployed)	496	4.7	(.7)	118	1.5	(.4)
Low household income (<£10,000)	465	25.7	(2.3)	118	14.1	(1.7)
Housing tenure type (social rented)	551	30.3	(2.3)	132	18.6	(2.6)
Household poverty status (at or below)	465	25.2	(1.0)	118	10.7	(1.6)
Neighbourhood income deprivation (10% most deprived)	505	15.1	(1.5)	126	8.2	(1.4)
Neighbourhood employment deprivation (10% most deprived)	505	12.9	(1.3)	126	6.8	(1.0)
Service provision (one or more)	554	67.6	(1.8)	132	59.7	(1.4)

Table 5.45(a): Test of independence: relationship status (exit or remain) * economic resources for single adult households

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	5.425	1.864	1.988	2540	.155	
Earned income	11.220	2.687	3.642	4854	.034	*
Socio-economic class	6.354	1.098	4.380	5598	.358	
Household income	13.275	7.572	1.969	2516	.001	***
Housing tenure	0.804	0.278	1.963	2509	.754	
Household poverty status	9.374	8.691	1.000	1278	.003	**
LSOA income deprivation	0.322	0.224	1.000	1278	.636	
LSOA employment deprivation	0.086	0.034	1.000	1278	.836	
Service provision	0.385	0.233	1.000	1278	.629	

Table 5.45 (b): Estimated percentage of women in the 'poorest' category of each economic resource (exited and remain) for single adult households

	Exited			Remain		
	No. in sample	Est. % (pop)	SE	No. in sample	Est. % (pop)	SE
Women's current employment status (unemployed)	353	5.7	(0.8)	4	16.3	(4.2)
Women's earned income (<£10,000)	324	38.6	(2.9)	27	75.3	(1.8)
Women's socio-economic class (I: never worked & long-term unemployed)	335	5.3	(1.1)	29	8.1	(0.2)
Low household income (<£10,000)	324	38.6	2.9	27	75.3	(1.8)
Housing tenure type (social rented)	353	39.9	(2.9)	30	47.2	(7.8)
Household poverty status (at or below)	324	36.8	(2.9)	27	67.4	(4.6)
Neighbourhood income deprivation (10% most deprived)	321	17.4	(2.5)	28	21.6	(5.9)
Neighbourhood employment deprivation (10% most deprived)	321	18.4	(2.3)	28	20.7	(5.8)
Service provision (one or more)	353	70.1	(1.8)	30	64.8	(4.8)

Table 5.46(a): Test of independence: relationship status (exit or remain) * economic resources for households with two or more adults

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	1.129	0.368	1.858	3881	.676	
Earned income	13.139	2.293	3.812	7963	.060	
Socio-economic class	5.706	1.017	4.488	9375	.402	
Household income	2.270	0.800	1.995	4168	.449	
Housing tenure	7.182	2.454	1.931	4033	.088	
Household poverty status	5.358	6.379	1.000	2089	.012	*
LSOA income deprivation	3.090	3.713	1.000	2089	.054	
LSOA employment deprivation	1.286	2.008	1.000	2089	.157	
Service provision	1.304	0.687	1.000	2089	.407	

Table 5.46 (b): Estimated percentage of women in the 'poorest' category of each economic resource (exited and remain) for households with two or more adults

	Exited		Remain	
	No. in sample	Est. % (pop) SE	No. in sample	Est. % (pop) SE
Women's current employment status (unemployed)	200	5.9 (0.7)	102	3.3 (0.1)
Women's earned income (<£10,000)	122	47.2 (2.8)	69	26.6 (2.4)
Women's socio-economic class (I: never worked & long-term unemployed)	161	4.2 (0.8)	89	0.5 (<.1)
Low household income (<£10,000)	141	11.9 (1.6)	91	6.7 (1.3)
Housing tenure type (social rented)	198	23.1 (2.0)	102	15.0 (2.7)
Household poverty status (at or below)	141	12.7 (1.7)	91	3.8 (1.3)
Neighbourhood income deprivation (10% most deprived)	184	13.5 (1.7)	98	6.6 (1.3)
Neighbourhood employment deprivation (10% most deprived)	184	8.8 (1.2)	98	5.1 (0.1)
Service provision (one or more)	201	65.7 (1.9)	102	59.1 (1.3)

Single adult households, economic inequality and intimate partner violence

It would appear from the analysis findings presented in sections 5.10, 5.11 and 5.12, that household structure (i.e. the number of adults in the household) is a key factor in understanding the associations between women's economic inequality and the likelihood of experiencing intimate partner violence. This is briefly explored here.

Women who have exited recently violent relationships are significantly more likely to reside in single adult households compared both to women experiencing no intimate partner violence (control population) (table 5.47(a)) and to women remaining in violent relationships (table 5.47(b)).

Irrespective of recent intimate partner violence, the group of women in single adult households (remain, exited and control population) and the group of women in households with two or more adults (remain, exited and control population) are significantly different to each other. They significantly differ on every economic resource factor. This includes household economic resources where the two groups would perhaps be expected to differ, *but* also includes individual economic resources (currently employment status, earned income and socio-economic class) and neighbourhood economic resources (table 5.48(a)).

A higher proportion of women in single adult households are located in the 'poorest' category on every economic resource factor (compared to women in households with two or more adults) *except* earned income (table 5.4(b)).

Single adult households then have fewer economic resources than households with two or more adults: household structure is directly linked with economic inequality for women.

Women’s earned income however has a different association with household structure to the other economic resource factors explored.

Table 5.47(a): Relationship between exited, remains and no IPV and residing in a single adult household

	OR (exp(β))	SE (β)	Sig.		Odds of living in a single adult HH compared to women experiencing no recent IPV
Intercept	.157	.030			
Exited	4.650	.118	<.001	***	4.65 times greater
Remains	.788	.254	.348		
No IPV (ref cat)	-	-	-		
McFadden R ² =.020: AUC = .540					

Table 5.47(b): Relationship between exited and remains and residing in a single adult household

	OR (exp(β))	SE (β)	Sig.		Odds of living in a single adult HH compared to women remaining in a violent relationship
Intercept	.124	.201			
Exited	5.901	.226	<.001	***	5.9 times greater
Remains	-	-	-		
McFadden R ² =.072: AUC = .629					

Table 5.48(a): Test of independence: number of adults in household (single or two or more) * economic resources

	Chi-square	Adjusted F	df1	df2	Sig.	
Employment status (current)	103.873	40.627	1.965	4407	<.001	***
Earned income	176.357	36.695	3.906	8761	<.001	***
Socio-economic class	67.125	13.868	4.821	10814	<.001	***
Household income	1717.637	649.265	1.875	4250	<.001	***
Housing tenure	737.623	298.268	1.957	4390	<.001	***
Household poverty status	770.253	603.746	1.000	2243	<.001	***
LSOA income deprivation	142.054	128.254	1.000	2243	<.001	***
LSOA employment deprivation	138.313	110.259	1.000	2243	<.001	***
Service provision	11.077	7.210	1.000	2243	.007	**

Table 5.48 (b): Estimated percentage of women in the 'poorest' category of each economic resource in single adult, and two or more adult households

	<i>Single, female-headed</i>			<i>Two or more adults</i>		
	No. in sample	Est. % (pop)	SE	No. in sample	Est. % (pop)	SE
Women's current employment status (unemployed)	3,549	4.9	(0.6)	9,348	2.3	(0.2)
Women's earned income (<£10,000)	3,286	10.5	(0.6)	8,280	21.5	(0.6)
Women's socio-economic class (I: never worked & long-term unemployed)	3,414	4.2	(0.5)	8,666	2.3	(0.2)
Low household income (<£10,000)	3,220	32.5	(1.2)	7,549	5.8	(0.4)
Housing tenure type (social rented)	3,549	33.2	(1.0)	9,335	11.0	(0.5)
Household poverty status (at or below)	3,220	27.2	(1.1)	7,549	6.1	(0.4)
Neighbourhood income deprivation (10% most deprived)	3,258	16.4	(1.0)	8,616	7.6	(0.5)
Neighbourhood employment deprivation (10% most deprived)	3,258	16.2	(1.0)	8,616	7.5	(0.5)
Service provision (one or more)	3,554	67.5	(1.2)	9,366	63.4	(0.9)

5.13 Conclusion

This chapter has presented the empirical findings for sixteen hypotheses linked to ten research questions which are designed to examine the thesis question of: *how economic inequality is associated with intimate partner violence against women*.

The findings suggest that employment, in particular occupational status (socio-economic class) is significant in association with intimate partner violence for working-age women in England and Wales. Whereas earned income is only significant for the national working-age population when unemployed and economically inactive women are included with an earned income of £0.

Household economic resources, particularly household income and housing tenure are consistently found to be significant in association with intimate partner violence for working-age women in the national population of England and Wales. Household income and housing tenure are also found to be significant in association with both remaining in and exiting violent relationship.

The household as a unit of analysis is found to be key to fully understanding how economic inequality is associated with intimate partner violence against women. For example, women who have exited recently violent relationships are significantly more likely to reside in single adult households than either women in the control population or women who remain in violent relationships. Single adult households are found to be poorer than households with two or more adults, irrespective of recent experiences of intimate partner violence. This is borne out by the findings for a small group of women in non-cohabiting violent relationships who reside in single adult households. These women are poorer than any other group examined. This

may suggest a relationship between remaining in violent relationships and economic inequality, however this group is also found to be three times more likely to have exited, but subsequently returned to, a violent relationship compared to cohabiting women in violent relationships.

There is some evidence that residing in an impoverished neighbourhood is associated with an increased likelihood of intimate partner violence for women in England and Wales. Alternative units of analysis, such as the neighbourhood are worthy of further investigation. However, the neighbourhood effect is not found to be significant when considered in conjunction with: women's current employment; earned income; socio-economic class; household income; or housing tenure and therefore, the neighbourhood as a unit of analysis must be deployed in conjunction with economic resources at the individual and household levels in order to be able to fully explore the association between economic inequality and intimate partner violence for women.

No evidence of a significant association between specialist violence against women service provision and intimate partner violence is found in this thesis.

The thesis now moves, in the following chapter (chapter 6), to a discussion of these empirical findings in relation to the research questions set out at the end of the *Literature Review*, before, in chapter 7, setting out the key conclusions to the question of *how economic inequality is associated with intimate partner violence against women*.

Chapter 6: Discussion

6.1 Introduction

This chapter discusses the empirical findings on the associations between economic inequality and intimate partner violence presented in chapter 5 (*Findings*) within the frame of each of the research questions posited⁶⁴ at the end of the *Literature Review*. The discussion in this chapter thus relates both to the empirical findings of the thesis, to the research questions, as well as to the current literature. A number of questions were raised in the process of the *Literature Review* in chapter 2: these were instrumental in setting the research questions for the thesis.

The research questions are designed to identify and focus on the key elements of the overarching thesis topic: *how is economic inequality associated with intimate partner violence against women*. In this chapter therefore, an in-depth discussion is presented which focuses on linking the empirical findings to answering the research questions. In the following chapter (chapter 7: *Conclusions*) the discussion is re-focused in order to draw out the key conclusions to the question *how is economic inequality associated with intimate partner violence*, premised on the answers to the research questions laid out in this chapter.

Intimate partner violence, as one expression of violence against women, is the focus of this thesis. The definition utilised is a broad one which encompasses physical and sexual violence, psychological abuse, threats and stalking behaviours whilst emphasising the causal link with gender inequality. The definition of intimate partner

⁶⁴ Only the first ten research questions are addressed in this chapter: an analysis of the eleventh research question could not be supported by the data (see Methodology section 4.3).

violence against women in this thesis therefore sits within the definitional frame of violence against women embodied by the United Nations (UN, 1979; UN, 1993) as “...any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women.’ which ‘targets a woman because she is a woman, or disproportionately affects women’. In operationalising this definition for analysis purposes, a widely defined prevalence measure of intimate partner violence within the past 12 months is used. This measure is located in the domestic violence, sexual assault and stalking module of the British Crime Survey 2008/09. The process to operationalise the thesis question, to identify and access the most appropriate data source and measure of intimate partner violence is described in chapter 3 (*Measurement*). Chapter 4 continued this process by setting out in detail the operationalisation of the analysis sample, describing how issues such as missing data and informative complex sampling designs are to be dealt with. In this chapter the (re)construction of the economic resource factors were detailed and the analysis methods were also described.

In the previous chapter, the empirical findings were presented. A series of hypotheses (set out at the end of chapter 4) were used to direct the analysis and ensure that the intricacies of the research questions are explored to the fullest extent possible. In order to achieve this it was necessary to break a number of the research questions down into their constituent parts. Hence some research questions have more than one hypothesis linked to them.

Economic inequality, as theorised in this thesis, is conceived of as the disparity in the distribution of, and access to, economic resources within a population. The analysis

in this thesis concentrates on the disparity in economic resources between working-age women in England and Wales. Economic resources are used in the operationalisation of the concept of economic inequality. Economic resources include both income and other economic assets, such as property, investments and savings. In the empirical analysis, a number of factors are utilised to represent economic resources, such as women's employment and women's earned income, household income and housing tenure, and level of neighbourhood deprivation. These are used to operationalise the concept of 'economic inequality'. In doing so, a wide range of economic resources are explored, both individually and in conjunction with one another. This reveals the relative importance of different economic resources for different groups of women.

The unit of analysis also matters. As Walby (2009) argues, traditionally the unit of analysis for economic inequality within countries is the household; this however risks obscuring women's unique position within households. Previous work on violence against women and economic inequality has demonstrated the utility of deploying the individual as the unit of analysis in order to make women's position within households visible and to ensure that women's economic position in relation to intimate partner violence is examined (see for example the work of Lloyd, 2007 and 2009; and Renzetti and Maier, 2002). In this thesis, these two approaches are combined; both the individual and the household are utilised as units of analysis. In addition the neighbourhood, as a unit of analysis is also deployed. These three units of analysis are explored both in isolation and in conjunction with each other. In doing so, this thesis demonstrates that both the individual and the household are needed to fully understand the very complex relationship between economic inequality and

intimate partner violence. This is because household structure is found to be a key element in relation to economic inequality and intimate partner violence against women. It also demonstrates that, as a unit of analysis, the neighbourhood is not as important as the household for the analysis of economic inequality and intimate partner violence against women.

There are nine factors representing economic resources used in the analysis. These are grouped under the three units of analysis:

Individual:

- Women's current employment status
- Women's earned income
- Women's socio-economic class

Household:

- Household income
- Housing tenure
- Household poverty status

Neighbourhood:

- Level of neighbourhood income deprivation
- Level of neighbourhood employment deprivation
- Specialist violence against women service provision

The discussion in this chapter now addresses the ten research questions in turn (section 6.2) before drawing together the key elements in the conclusion (section

6.3). These are then taken forward into the final thesis chapter (chapter 7: *Conclusions*) in order to address the overarching thesis question: *how is economic inequality associated with intimate partner violence against women*. The ten research questions are:

1. Is current employment as important as socio-economic class?
2. Is women's earned income associated with intimate partner violence?
3. Is women's earned income more important than current employment and socio-economic class?
4. Are household economic resources associated with intimate partner violence?
5. Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?
6. Is there an association between specialist violence against women service provision and intimate partner violence in the UK?
7. Are women's employment and income the most important economic resources associated with intimate partner violence?
8. Is being in a currently violent relationship associated with economic inequality?
9. Does exiting a violent relationship impact on women's economic inequality?
10. Is exiting a violent relationship associated with greater economic inequality than remaining?

6.2 Addressing the research questions

Is current employment as important as socio-economic class?

Current employment status has been interrogated in association with intimate partner violence with mixed results. Some studies (for example Walby and Allen, 2004) have found an association between current employment and intimate partner violence, whilst others have found no association (Lloyd and Tulac, 1999; and MacMillan and Gartner, 1999). However, where the results of previous research have been mixed on current employment and intimate partner violence, the results on the wider/long-term effects of employment have been more consistent. For example, Votruba-Drzal, Lohman, and Chase-Lansdale, (2002) and Barusch, Taylor and Derr, (1999) found that intimate partner violence was significantly associated with women moving out of the paid labour force; and Riger, Staggs and Schewe, (2004) found an inverse relationship between work stability and recent intimate partner violence. Thus the question was raised in this thesis: is current employment as important as occupational status?

Empirical evidence presented in this thesis finds both current employment status and socio-economic class to be associated with intimate partner violence. When examined individually, current unemployment and economic inactivity were both found to be associated with significantly higher odds of intimate partner violence compared to being currently employed (table 5.2(a)). Similarly, being classed as long-term unemployed or having never worked (class I) was found to be associated with significantly higher odds of intimate partner violence compared to being classed as higher managerial, administrative or professional. The odds of intimate partner

violence for women in the two lowest occupational classes (after long-term unemployed: classes II and III) were also found to be significantly higher than those of women in the higher managerial, administrative and professional class (table 5.4).

When current employment status and socio-economic class are considered in conjunction with each other, both are found to be important in association with intimate partner violence. The odds of intimate partner violence for currently unemployed and economically inactive women are significantly higher than those for currently employed women, after taking account of women's socio-economic class. The odds of intimate partner violence for women in routine and semi-routine occupations (class II), and lower supervisory and technical occupations (class III) are significantly higher than those for women in the higher managerial, administrative and professional class (class VI), after taking account of women's current employment status (table 5.5).

When current employment status and socio-economic class are considered both in relation to each other and in relation to earned income, once again, they are both found to be important in association with intimate partner violence. However, being currently unemployed is found to be more important than being currently economically inactive. When the three economic resource factors at the individual unit of analysis are considered together (that is current employment status, socio-economic class and earned income), the odds of intimate partner violence for unemployed women are almost double those for employed women, but the odds of intimate partner violence for economically inactive women are not significantly different to those for employed women (table 5.12: full model). Being located in any

of the bottom three socio-economic classes (class I, II or III) is associated with significantly higher odds of intimate partner violence compared to being located in class VI (table 5.12: full model). The importance of unemployment in comparison to economic inactivity is also demonstrated by the finding that the odds of intimate partner violence for unemployed women are 1.6 times higher than those for economically inactive women (table 5.2(b)).

On this point, both current employment status and socio-economic class are found to be important in association with intimate partner violence for working-age women in the national population of England and Wales. Women's unemployment however is found to be more important than women's economic inactivity.

However, when current employment status and socio-economic class are considered in conjunction, both with each other, and with the other seven economic resource factors examined in this thesis, neither current employment status nor socio-economic class are found to be important (table 5.31: full model). It is only after non-significant household and neighbourhood factors are removed from consideration that socio-economic class regains some level of importance in association with intimate partner violence. The effect of current employment status, however, remains insignificant compared to earned income, socio-economic class, household income, and housing tenure. Socio-economic class therefore can be considered to be more important than current employment status in this context.

Socio-economic class is more important than current employment status for working-age women in the national population. This suggests that there may be some additional effect associated with occupation compared to current employment

status. For example, women may be economically inactive at the time they participate in the BCS 2008/09, but may previously have been in a routine or semi-routine occupation (class II) or a higher managerial, administrative or professional occupation (class VI). Given that there is a significant difference in the likelihood of intimate partner violence for women located in these two classes, it is reasonable to hypothesise that a residual effect from a woman's previous occupation carried forward despite their current employment status. There is some evidence to support this, which would also support finding current unemployment to be associated with an increased likelihood of intimate partner violence compared to being economically inactive. A higher proportion of currently economically inactive women were previously in higher managerial, administrative or professional occupations compared to currently unemployed women. By contrast, a higher proportion of currently unemployed women are long-term unemployed compared to economically inactive women (table 5.3(b)). In short, currently economically inactive women appear to have been previously located in higher occupational classes than currently unemployed women.

Is women's earned income associated with intimate partner violence?

Studies which have interrogated women's income and intimate partner violence have been reasonably consistent in their findings, with low incomes being found to correlate with higher risks of intimate partner violence (World Health Organisation, 2010; Renzetti, 2002; and Tolman and Raphael, 2000), although there have been a number of exceptions. For example MacMillan and Gartner (1999: 957) concluded in their study that measures of personal income were of 'little consequence' in relation

to intimate partner violence. In addition, it has been hypothesised that the source of women's income is also important. In particular a number of studies have found a link between income from welfare and both higher rates of, and greater severity of, intimate partner violence compared to income from employment (see for example, Sanders, Campbell and Schnabel, 2009; and Kurz, 1998).

The BCS 2008/09 only contains data on women's earned income and so a comparison between earned income and income from other sources cannot be carried out. However, it is pertinent to ask whether earned income is associated with intimate partner violence. The relationship found between earned income and intimate partner violence is complex, and is dependent on a number of factors, including women's household structure and whether they have exited recently violent relationships.

For women in the national population, the relationship between earned income and intimate partner violence appears relatively straightforward. For women currently in employment who have any level of earned income, there is no association between this level and intimate partner violence. The odds of intimate partner violence for women with low earned incomes are not significantly different to those of women with above average earned incomes (table 5.7). However, when unemployed and economically inactive women are included in the analysis with an earned income of £0, the association gets a little more complicated. Compared to women with above average earned incomes, the odds of intimate partner violence for unemployed and economically inactive women are significantly higher (table 5.9(a)). However, compared to women with low earned incomes, the odds of intimate partner violence

for unemployed women are still significantly higher, but the odds for economically inactive women are not significantly different. Therefore having an earned income of £0 via unemployment is associated with intimate partner violence differently to having an earned income of £0 due to economic inactivity. These findings demonstrate that the source of income is likely to be important in association with intimate partner violence and further support the findings discussed above where unemployment was found to be more important in association with intimate partner violence than economic inactivity.

However, when women's earned income is considered in conjunction with other economic factors for the national population, it is not found to be as important as other factors examined (tables 5.12 and table 5.31). For example, both current employment status and socio-economic class are found to be more important than earned income (table 5.12) and socio-economic class, household income and housing tenure are found to be more important than earned income (table 5.31).

The association between earned income and intimate partner violence becomes more important, but also more complicated, once relationship status and household structure are taken into account. For example, if women in single adult households are disaggregated and considered alone then their household income can be considered to represent their earned income plus their other sources of income as they are the only adult contributing to the household income. In this case, the effects of both in association with intimate partner violence can be interrogated. Here, household income is found to be much more important than earned income. Earned income has no significant association with intimate partner violence, whilst both a

low household income and a below average household income are associated with significantly higher odds of intimate partner violence compared to an above average household income. This is further evidence that the source of income appears to be more important in association with intimate partner violence than the level of income.

Finally, the most complex associations between earned income and intimate partner violence are found when the group of women who have exited recently violent relationships is examined. When this group of women is compared to the control group who have not experienced intimate partner violence, the odds of intimate partner violence for women who have exited recently violent relationships are significantly *lower* for below average earned income compared to above average earned income, whilst, at the same time, no difference is found in the odds of intimate partner violence between low earned incomes and above average earned incomes (table 5.39). The same effect is found for women who have exited recently violent relationships and reside in households with two or more adults. However, for women who have exited recently violent relationships and reside in single adult households there is no association found between earned income and intimate partner violence.

Is women's earned income more important than current employment status and socio-economic class?

Women's earned income is not more significant than current employment status or socio-economic class in association with intimate partner violence. When these three individual level economic factors are examined in conjunction with each other, both

current employment status and socio-economic class are found to be more important than earned income in association with intimate partner violence (table 5.12).

There is only one context in which earned income is found to be more important than both current employment status and socio-economic class – when women who have exited recently violent relationships are examined. Earned income is an important factor in association with exiting recently violent relationships, but that association is highly complex (see the discussion above) (table 5.39 and table 5.43).

Are household economic resources associated with intimate partner violence?

The household is deployed as a unit of analysis. The importance of household economic resources is considered both individually, in conjunction with each other, and in conjunction with the other two units of analysis (individual and neighbourhood). Three factors represent household economic resources in the analysis: household income, housing tenure, and household poverty status.

Walby (2009) and Walby, Armstrong and Humphreys (2008) argue that traditionally the household is utilised as the main unit of analysis for examining economic inequality within a country. Focusing on the household can obscure women's unique position within it. In addition, the use of the household unit for analysis of women's economic position has been criticised because of a long-held assumption that economic resources within households are equally distributed (for example Becker, 1991) despite this having been robustly challenged (for example by: Moosa with Woodroffe, 2009; Goode, Callender and Lister, 1998; and Ferber and Nelson, 2003).

By contrast, work in the violence against women field has concentrated more

specifically on the individual as the primary unit of analysis in order that women's economic position in association with intimate partner violence is rendered visible (see for example Riger, Staggs and Schewe, 2004; and Lloyd and Tulac, 1999). Some large-scale social surveys have examined both individuals and households in association with intimate partner violence (for example Johnson, Ollus and Nevala, 2008). Nevertheless, household economic resources may be significant in women's association with intimate partner violence and thus are worthy of further analysis.

Where household economic resources have been explored in association with intimate partner violence, the results are consistent. For example, Benson, Wooldredge and Thistlethwaite, (2004), Greenfeld, Rand, Craven, Klaus, Perkins and Warchol, (1998), Ashcroft, Daniels and Hart (2004) and Walby and Allen (2004) all found higher household incomes significantly associated with lower risks of violence compared to women in households with lower incomes. Walby and Allen (2004) found a significant association between housing tenure and intimate partner violence.

In line with previous research findings, household income level is found to be significantly associated with intimate partner violence for working-age women in England and Wales. The odds of intimate partner violence for women with low household incomes are 3.5 times higher than those for women with above average household incomes; and the odds for women with below average household incomes are almost double those for women with above average household incomes (table 5.14). Household income is also found to be important in a number of other analyses. For example, when the three household resource factors are considered

together, having a low household incomes compared to an above average household incomes is found to be important in association with intimate partner violence (table 5.21). When all nine economic factors are considered together, household income is also found to be important. Having a low household income and a below average household income is associated with higher odds of intimate partner violence compared to having an above average household income (table 5.39). Household income is also found to be important both for women who remain in violent relationships and for women who have exited recently violent relationships. In both cases a lower household income is associated with an increased likelihood of intimate partner violence (tables 5.33 and 5.39).

Household poverty is closely related to household income, but it takes account of the number of adults and children in the household. It is a binary measure which allocates women to households at or below the official poverty threshold or above the poverty threshold depending on the household income and household structure. For an explanation of official household poverty in the UK and the construction of this factor for analysis, see *Methodology* section 4.6. Women in households at or below the official poverty threshold are significantly more likely to experience intimate partner violence compared to women in households above the official poverty threshold (table 5.20). Household poverty status, however, is found to be less important in association with intimate partner violence than either household income or housing tenure. For example, when household income, housing tenure, and household poverty status are considered in conjunction with each other, both household income and housing tenure are found to be more important in association with intimate partner violence than household poverty status (table 5.21).

Household poverty status is not found to be important when considered in relation to other economic factors, except for women who remain in violent relationships. These women are significantly less likely to reside in households at or below the poverty threshold compared to women in the control population (table 5.33 and table 5.38).

Housing tenure is an important factor in association with intimate partner violence. When examined individually, the odds of intimate partner violence for women in social rented and private rented housing are both significantly higher than those of women in owner/occupier housing. However, in addition to this, housing tenure is found to be significantly associated with intimate partner violence in every analysis it is specified in except one - for women who have exited recently violent relationships and reside in single adult households. In addition, the effect is also found to be consistent across each of these analyses. Women in social rented housing, and often also women in private rented housing, have significantly higher odds of intimate partner violence compared to women in owner/occupier housing. Housing tenure is found to be the most important factor in association with intimate partner violence in this thesis.

The household as a unit of analysis is found to be extremely important. Household economic resources are consistently found to be the most important factors when considered in conjunction with individual and neighbourhood economic resources. The findings here demonstrate that the household must be included in the analysis of economic inequality and intimate partner violence; the individual as the only unit

of analysis is not adequate to fully explore the interconnections between economic resources and intimate partner violence.

Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?

Various studies have explored the neighbourhood as the unit of analysis in intimate partner violence, with relatively consistent results being found. For example an increased risk of intimate partner violence is found to be associated with residing in an impoverished neighbourhood by DeKeseredy, Alvi, Schwartz and Perry (1999); Renzetti and Maier (2002); Benson, Fox, DeMaris and Van Wyk (2003); Browne and Bassuk (1997); and DeKeseredy and Schwarz (2002). These studies have all been based in the United States; the literature review failed to uncover any similar work in the UK.

In the analysis in this thesis, an initial exploration was made to ascertain whether neighbourhood deprivation is associated with intimate partner violence. Two factors were analysed: level of neighbourhood income deprivation and level of neighbourhood employment deprivation. Both of these factors were found to be significantly associated with intimate partner violence. The odds of intimate partner violence for women in the most deprived neighbourhoods (by income and by employment) are 1.6 and 1.3 (respectively) times higher than those for women residing in any other neighbourhood (tables 5.24 and 5.26).

However, utilising the neighbourhood as a unit of analysis is not found to be important when it is considered in relation to the household unit.

Is there an association between specialist violence against women service provision and intimate partner violence in the UK?

The work which has been done on the question of whether specialist service provision is linked to the likelihood of intimate partner violence used data from the United States and found that the rate of shelter provision for battered women was significantly and negatively correlated with intimate Femicide, i.e. states with more services had lower rates of Femicide. The availability of Rape Crisis Centres was also found to be significantly and negatively correlated with Femicide (Stout, 1992).

On the other hand, using UK data from the Map of Gaps project (Coy, Kelly and Foord, 2009) (re)constructed to differentiate between Local Authority Areas with one or more specialist violence against women services and zero specialist violence against women services, no association was found with intimate partner violence in this thesis (tables 5.29(a) and 5.29(b)).

In addition, when specialist service provision is considered in conjunction with other factors representing individual, household and neighbourhood economic resources, specialist violence against women service provision is not found to be important in association with intimate partner violence.

In a related concept, there is a small body of research, predominately in the United States, which finds violence against women service provision to be linked to the affluence of the area in which it is located. For example, Tiefenthaler, Farmer and Sambira's (2005) study of U.S. states finds that service provision is significantly associated with existing community resources, and in particular, applications for intimate partner violence service provision funding. This means that specialist

services are more likely to be available in affluent areas with a major college or university in the county. It may then be that there is an indirect link between service provision, economic inequality and intimate partner violence against women which is not being explicated in the analysis in this thesis. For example, if the Map of Gaps distribution of violence against women services data is compared to the level of multiple deprivation a significant association is found. The most deprived⁶⁵ neighbourhoods in England (bottom decile) are found to be 2.6 times more likely to have violence against women service provision than any other neighbourhood⁶⁶. This is a statistically significant difference ($p < .001$). This demonstrates an association between economic inequality and the patterning of specialist service provision in England at the neighbourhood level. Further analysis is required to explore the connections between economic inequality and service provision in order to explicate any indirect associations which may be important for furthering understanding of the connections between economic inequality and intimate partner violence which may be premised on alternative factors compared to the U.S.

Is women's employment and earned income the most important economic resources associated with intimate partner violence?

An alternative, or additional, way to consider this question is to ask whether the individual as a unit of analysis is the most important in association with intimate partner violence. Either way, the response is complex. When employment (current and socio-economic class) and earned income are considered in relation to the

⁶⁵ Using the English Index of Multiple Deprivation: see Payne and Abel, 2012.

⁶⁶ Binary logistic regression model for one or more services by neighbourhood decile for English index of multiple deprivation: 10% most deprived neighbourhoods compared to all other neighbourhoods: $\exp(\beta) = 2.6$ (SE: 0.163) $p < .001$; McFadden $R^2 = 0.010$ / AUC = 0.541.

household and neighbourhood economic resources they are not the most important factors: household resources are the most important. However, specific factors are found to be important in specific contexts.

For example, when all nine factors representing economic resources are considered together, women's current employment status, earned income and socio-economic class are not significantly associated with intimate partner violence after the effects of the other factors have been accounted for. However, when the non-significant household and neighbourhood factors are removed from consideration, then socio-economic class, along with household income and housing tenure is found to be significant (table 5.31).

When only those women remaining in violent relationships are considered (compared to women in the control population), women's current employment status, earned income and socio-economic class are not significant over and above the effects of other factors (table 5.33).

However, when those women who have exited a recently violent relationship are considered (compared to women in the control population), earned income is important, both for the whole population and for the population which resides in households with two or more adults (tables 5.39 and 5.43). However, it is not significant for women who have exited and reside in single adult households, whereas socio-economic class is important for this group (table 5.42).

Thus, whilst women's employment and earned income (or the individual unit of analysis) are not as important as other factors (household economic resources), they do have a complex relationship with intimate partner violence in certain contexts.

Therefore the individual unit of analysis is important to keep, in particular when disaggregating women by whether or not they remain in a violent relationship and/or when specifically exploring women who have exited recently violent relationships.

Housing tenure is the most consistently important factor in association with intimate partner violence found in this thesis. Household income is also found to be consistently important. Both housing tenure and household income have a more straightforward relationship with intimate partner violence than women's employment, but most especially compared to women's earned income.

Economic inequality and remaining in, or exiting from, a violent relationship.

Respondents reporting intimate partner violence to the BCS 2008/09 can be disaggregated by their relationship status at point of survey. In this thesis respondents are disaggregated into three groups: remain in violent relationship; exited from recently violent relationship; and no experience of recent intimate partner violence (see *Findings* section 5.10).

Compared to the control population, women remaining in violent relationships and women exiting from violent relationships both have comparatively fewer economic resources. This suggests that a link between increased economic inequality and both remaining in and exiting violent relationships can be made in comparison to women in the control population. These associations, however, are complex.

It is pertinent to remember here that 81% of respondents to the BCS 2008/09 reporting intimate partner violence in the past 12 months also reported having

exited their most recently violent relationship at the point they participated in the survey. This suggests that even where measures of recent intimate partner violence are utilised, it cannot be assumed that all, or even the majority of women reporting recent violence remain in those violent relationships at the point they participate in the survey. This is pertinent because women's socio-economic and demographic information is collected at point of survey. How that point in time data is related to the likelihood of intimate partner violence is therefore important.

Is being in a violent relationship associated with economic inequality?

Women who remain in a violent relationship are found to have fewer economic resources compared to women in the control population (women who have not experienced any recent intimate partner violence).

When women remaining in violent relationships are compared to women with no recent experience of intimate partner violence across all nine factors representing individual, household and neighbourhood economic resources, the most important factors are found to be household income, housing tenure, and level of neighbourhood employment deprivation (table 5.33: full model). In the case of household income and housing tenure the odds of intimate partner violence are greater for women with fewer economic resources. However, in the case of neighbourhood employment deprivation, the odds of intimate partner violence are lower for women in the most deprived neighbourhoods. Given that all women experiencing intimate partner violence in this population remain in violent relationships, this suggests that women in violent relationships are both more likely to have low household incomes and reside in social rented housing, *but* are less likely

to reside in the most employment deprived neighbourhoods compared to women experiencing no recent intimate partner violence.

When those economic factors which are not significantly associated with intimate partner violence for women in violent relationships are removed from consideration, the picture changes slightly, but retains the complex relationship between different economic resources. For example, the odds of intimate partner violence are 3.7 times greater for women with low household incomes compared to women with above average household incomes and double for women in social rented housing compared to women in owner/occupier housing. However, this is complicated by the findings that the odds of intimate partner violence for women in households at or below the poverty threshold are 65% lower than those for women in households above the poverty threshold. Again then, women remaining in violent relationships have fewer economic resources in terms of household income and housing tenure *but* are less likely to live in households which can be officially classed as in poverty. Given that a low household income is important, being associated with significantly higher odds of intimate partner violence compared to a higher household income, finding the opposite effect for household poverty status is challenging to interpret. It may be that although the household incomes are low, they are not low enough to drop these households below the poverty threshold (table 5.33: final model).

It is also important to recognise that women's individual economic resources: current employment; earned income; and socio-economic class, are not found to be important in association with intimate partner violence for this group (table 5.33). Women remaining in violent relationships are therefore not found to have

significantly fewer individual economic resources compared to women experiencing no recent intimate partner violence. For women in violent relationships, the more important unit of analysis appears to be the household. However, it is also the case that the model used to explicate these findings does not fit the data well. This means that economic resources are not good at explaining the difference between women who remain in violent relationships and those with no recent experience of intimate partner violence. This suggests that economic resources are not the key domain for understanding women in violent relationships (at least in England and Wales).

However, it is also observed that for women in violent relationships, household structure is important in association with intimate partner violence. Women in households with two or more adults are 2.5 times more likely to experience intimate partner violence than women in single adult households. This suggests that most women in violent relationships cohabit. This is supported by observations when women in violent relationships are disaggregated by household structure. An estimated 89% of women in violent relationships reside in households with two or more adults compared to 72.5% of women in the national population (table 5.34).

The three factors found to be of importance in relation to intimate partner violence are all household economic resources. Therefore household structure needs to be interrogated.

Remaining in a violent relationship and economic inequality: accounting for household structure

When women who are in violent relationships are disaggregated by the number of adults in the household, 89% reside in households with two or more adults

(cohabiting), and 11% in single adult households (non-cohabiting). These two groups of women are different to each other on every economic resource factor (except service provision) (table 5.35(a)). In every case women in non-cohabiting violent relationships have fewer economic resources compared to women in cohabiting violent relationships. The difference between these two groups is not just at the household level, but is also at the individual level and the neighbourhood level. For example 3% of cohabiting women are unemployed compared to 16% of non-cohabiting; 27% of cohabiting women have an earned income of less than £10,000 per annum compared to 75% of non-cohabiting; 4% of cohabiting women reside in households at or below the poverty threshold compared to 67% of non-cohabiting; and 5% of cohabiting women reside in the most employment deprived neighbourhoods compared to 21% of non-cohabiting. In fact, this (small) group of women in non-cohabiting violent relationships who reside in single adult households are significantly poorer than any other group examined (including women residing in single adult households, both those who have exited recently violent relationships and those with no experience of recent intimate partner violence). Their relative lack of economic resources compared to every other group can be interpreted as the greatest economic inequality being associated with the intimate partner violence of women in non-cohabiting violent relationships who reside in single adult households.

Women in cohabiting violent relationships have comparatively greater economic resources than women in non-cohabiting violent relationships. However, there is little evidence that women in cohabiting violent relationships have fewer economic resources compared to women with no recent experience of intimate partner violence residing in households with two or more adults. In this population, the odds

of intimate partner violence are almost three times greater for women in social rented compared to owner/occupier housing, but at the same time, the odds of intimate partner violence for women in households at or below the poverty threshold are 75% lower than those for women in households above the poverty threshold. This means women in cohabiting violent relationships are more likely to reside in social housing, but less likely to reside in officially 'poor' households. In addition, what is particularly interesting about this group is that whilst few economic resources factors are found to be important in association with intimate partner violence, the model fit to the data is reasonably robust (table 5.38). This means that economic resource factors are doing a reasonable job of differentiating between women in violent relationships and those in the control population. It may be that this is explained through an indirect (as yet unobserved) link between economic inequality and intimate partner violence for this group.

The most important link between economic inequality and being in a violent relationship is found to be household structure. When non-cohabiting women are disaggregated from cohabiting women their relatively greater economic inequality is stark. Whereas for cohabiting women the model fit to the data suggests that there is a link between economic inequality and intimate partner violence, this is more obscure compared to the non-cohabiting group.

In addition, although women in the non-cohabiting group are currently in violent relationships, they are more likely to have left, but subsequently returning to, that violent relationship compared to cohabiting women. This sets up a potential link between economic inequality, exiting, and subsequent return to violent

relationships. This would fit with evidence from previous research. For example Griffing, Ragin, Sage, Madry and Primm's study (2001) of domestic violence survivors' self-identified reasons for returning to a violent relationship found that the three most cited reasons for returning were: batterer remorse (90%); emotional attachment (73%); and economic need (53%). The study also found a highly significant difference ($p < .001$) between the groups who *actually* return for economic need (53%) and those who would *consider* returning in the future because of economic need (10%). This suggested that economic need is an objective factor in women who *do* return to a violent relationship to a much wider extent than for women who *plan* to return because of economic factors. If women are 'having' to return to violent relationships because of economic necessity this has (should have) major implications for economic policy.

Women residing in single adult, female-headed households are poorer than other groups of women: this has been established in the economic inequality and poverty literature (see for example, Pantazis and Ruspini, 2006), and can be demonstrated for working-age women in England and Wales through the BCS 2008/09. Women in single adult households have fewer economic resources than women in households with two or more adults on every economic resource factor *except* earned income (table 4.48(a) and table 5.48(b)). Women's earned income however, does not appear to be adequate to keep women out of poverty when they are the only adult in the household.

Does exiting a violent relationship impact on women's economic inequality?

There is stronger evidence that exiting a violent relationship is associated with fewer economic resources and therefore arguably greater economic inequality compared to remaining in violent relationships. For the population of women who have exited violent relationships and those with no recent experience of violence (the control population) the odds of intimate partner violence for women in low income households and rented housing are significantly higher than those for women in households with higher incomes and owner/occupier housing respectively (table 5.39).

However, this is somewhat countered by the findings on earned income. The odds of intimate partner violence for women with below average earned incomes are significantly lower than those of women with above average incomes. This means that women who have exited violent relationships are likely to have higher earned incomes than women in the control population. This fits with previous research which posits that income (or an ability to access money) is important in women's ability to exit violent relationships (see for example, Walby and Allen, 2004; Lloyd, 1997; Kalmus and Straus, 1999). These two seemingly contradictory states can be reconciled if it is hypothesised that women require a certain level of earned income to exit, but in doing so end up with fewer household economic resources, by moving to a single adult household for example. However, this hypothesis is somewhat challenged by the additional finding that the odds of intimate partner violence for women with low earned income are not significantly different to those for women with above average earned incomes.

Once again, household structure may be important in unpicking these complications further. Women who have exited recently violent relationships are significantly more likely to reside in single adult households compared both to women currently in violent relationships and to women with no recent experience of violence.

Exiting a recently violent relationship and economic inequality: accounting for household structure

An estimated 58% of women who have exited recently violent relationships live in households with two or more adults (including with new intimate partners) compared to an estimated 42% who live in single adult households (table 5.40).

These two groups of women differ significantly from each other on women's employment status; earned income; all three factors representing household economic resources; and level of neighbourhood employment deprivation (tables 5.41(a) and 5.41(b)). These differences are important. Women in single adult households have relatively greater individual economic resources (current employment status and earned income) compared to women in households with two or more adults, but relatively fewer household and neighbourhood economic resources. This suggests that women who exit with greater individual economic resources establish independent households, although these households are poorer, whereas women with relatively fewer individual economic resources exit and then reside in households with two or more adults (including new partners). This is likely to be within a relatively short timeframe given that all women who have exited have experienced violence by their ex-partner within the past 12 months.

However, when women who have exited and reside in a single adult household are compared to women in single adult households with no recent experience of intimate partner violence, there is little difference found in their relative economic positions. Indeed the only significant difference found between them is in socio-economic class. The odds of intimate partner violence for women in class III (lower supervisory and technical occupations) are found to be double those for women in the higher managerial, administrative and professional class (table 5.42). This means that the economic positions of women residing in single adult households are very similar irrespective of whether they have experienced recent intimate partner violence, *except* in the case of women in non-cohabiting violent relationships who have significantly fewer economic resources, even compared to other women in single adult households.

One group remains, that of women who have exited recently violent relationships and now reside in households with two or more adults. This group of women has considerably fewer household economic resources compared to women in the control population in households with two or more adults (table 5.43). This is important; it means that women who have exited violent relationships still end up in poorer households compared to women in the control population. The odds of intimate partner violence for this group are double for women with below average household incomes, and three times higher and double for those women in social rented and private rented housing compared to women in owner/occupier housing. This suggests that exiting a violent relationship is associated with economic inequality because of a lack of household economic resources, but that this effect may be somewhat disguised for women who move to single adult households given

the greater relative poverty of women in single adult households irrespective of recent violence.

In addition, earned income is important for the group who have exited and reside in households with two or more adults. The odds of intimate partner violence are 70% lower for women with below average earned incomes compared to women with above average incomes. There is no significant difference however in the odds of intimate partner violence between women with low and women with above average earned incomes. Earned income is clearly an important economic resource in association with exiting violent relationships. The links between earned income and exiting are consistent across household structure, but are clearly highly complex.

Is exiting a violent relationship associated with greater economic inequality than remaining?

The group of women who remain in violent relationships and the group who have exited from recently violent relationships differ significantly from each other in terms of household and neighbourhood economic resources. This is due to the greater likelihood of women in violent relationships residing in households with two or more adults.

What is of real importance here however is the finding that these two groups of women do not differ significantly from each other in terms of individual economic resources (current employment status, earned income, and socio-economic class) (table 5.44(a)). Therefore, the difference between the group of women who have exited and the group who have remained is not earned income, nor is it likely to be any less tangible resources derived from employment and/or socio-economic class.

Given that income in particular has been found to be the key factor in women's ability to exit violent relationships (see for example Anderson and Saunders 2003) these findings do not fit that theory.

6.3 Conclusion

This chapter has addressed each of the ten research questions in turn, relating the empirical findings of the thesis to these key questions raised through the evaluation of the current literature. In doing so, this chapter demonstrates, overall, that fewer economic resources are associated with increased likelihood of intimate partner violence. Given that economic inequality is operationalised in this thesis through the use of economic resources, this disparity in economic resources in association with intimate partner violence is the link back to the concept of economic inequality. It can therefore be argued that economic inequality is associated with increased intimate partner violence against women. These associations however are not straightforward. The unit of economic analysis is important, as is the current relationships status of women and their household structure.

Some economic resources are found to be of greater importance than others in association with intimate partner violence. For example, housing tenure is significant in almost every analysis in which it is specified. No other economic resource factor is found to have as consistent a relationship with intimate partner violence as housing tenure.

Women's employment, which encompasses current employment status, earned income and socio-economic class, has a complex relationship with intimate partner violence. There appears to be a link between these which extends beyond earnings, but the relationships between earned income and intimate partner violence is found to be the most complex of all those examined.

In the following, and final, chapter (chapter 7: *Conclusions*) these discussions are drawn together in order to address the overarching question of this thesis: *how is economic inequality associated with intimate partner violence against women*. In doing so a number of key conclusions are set forth and examined:

The first is that economic inequality is associated with increased likelihood of intimate partner violence against women. The empirical evidence presented in chapter 5 and discussed in detail in this chapter demonstrates that women with fewer economic resources are significantly more likely to experience intimate partner violence compared to women with comparatively greater economic resources. If economic inequality is conceived of as the disparity in economic resources between women, this enables the link between the empirical evidence and the conceptual question of the thesis to be made. Thus it can be concluded that economic inequality is associated with intimate partner violence against women.

The second conclusion is that the unit of analysis of economic resources matters. In deploying individual, household and neighbourhood economic resources in the analysis, a much deeper understanding of the associations between economic inequality and intimate partner violence against women has been rendered possible than if only one of these units of analysis had been interrogated. In particular the importance of household economic resources compared to both individual and neighbourhood economic resources is revealed. Housing tenure is concluded to be the most significant economic resource in association with intimate partner violence for working-age women in England and Wales.

This leads to the third conclusion that women's household structure is revealed as one of the key links between economic inequality and intimate partner violence against women. Taking account of the household structure of those women who remain in, and or who have exited, recently violent relationships is shown to enable the complex relationship between economic inequality and intimate partner violence to be further disentangled. In particular, the poverty of single adult, female-headed households is shown to be important in understanding the association between economic inequality and intimate partner violence.

In considering the relative importance of economic resources in association with intimate partner violence, it is also concluded that the significance of employment extends beyond earnings and that women's occupational status may be a more useful measure than current employment. However, the association between earned income and intimate partner violence is revealed to be highly complex, especially when considering those women who have exited recently violent relationships.

Disaggregating women in the national population experiencing intimate partner violence by their current relationship reveals the differences and the similarities between those women remaining in violent relationships and those women who have exited recently violent relationships. In doing so, the conclusion is drawn that a stronger relationship is found between economic inequality and exiting violent relationships than between economic inequality and remaining in violent relationships. Women's household structure is the key link in understanding this stronger relationship.

In addition to the conclusions drawn in addressing the thesis question specifically, the utilisation of statistics in this thesis to help build the knowledge base needed for transformative social change is also addressed. The conclusion is made that the process of critically analysing the choice of data source, construction of analysis sample, the measure of intimate partner violence, and the (re)construction of factors representing economic resources is essential to the research process. It ensures both that the empirical findings are robust, and that the conclusions drawn are framed by the strengths, but also any limitations, of the data and the analysis method.

Chapter 7: Conclusion

7.1 Introduction

Violence against women is a global social problem affecting millions of women and girls. Violence against women wrecks lives, violates women's human rights, perpetuates inequality, causes death and injury and is a significant risk factor in women's psychological, physical and other health-related problems. Gendered violence prevents women fulfilling their economic, political, social and creative potential. Until violence against women is eliminated, gender equality cannot be achieved. Thus the elimination of violence against women is the emancipatory objective. Theoretical and empirical knowledge on the causes of violence against women and the factors associated with risk of violence for women are required for this emancipatory agenda. This thesis seeks to contribute to the emancipatory agenda through the development of theoretical and empirical knowledge.

The thesis sits at the intersection of applied social statistics and the sociological disciplines of violence against women and inequality. The findings from this thesis contribute to these three disciplines. In addition the findings from this thesis also have implications for women's studies and criminology.

Intimate partner violence is one expression of violence against women. Whilst there are a number of different definitions of violence against women, this thesis utilises a broad definition with the emphasis on gender inequality. The definition of violence against women set forth in the United Nations *Declaration on the Elimination of Violence Against Women* (UN, 1993) embodies this approach, defining violence

against women as ‘...any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women.’ The scope of the Declaration is broad, but its emphasis is on gender inequality. This is also embodied in the definition of violence against women set out in the United Nations *Convention on the Elimination of Discrimination Against Women* (UN, 1979) which defines violence against women as that which ‘targets a woman because she is a woman, or disproportionately affects women’.

Intimate partner violence against women is one expression of violence against women. Across the globe, intimate partner violence is one of the most commonly found expressions of violence against women (Watts and Zimmerman, 2002; Kelly 2005). In England and Wales alone an estimated 650,000 working-age women experience intimate partner violence every year; 2.5 million during the course of their lifetime. Intimate partner violence against women is the focus of this thesis.

Focusing on intimate partner violence in this thesis is done for two main reasons, one theoretical and one methodological.

In utilising intimate relationships as the unit of analysis it is possible to set forth a research agenda which raises the question of not only how economic inequality is associated with intimate partner violence between women within a national context, but also between women and their male partners within households. This further enables the question to be raised as to whether economic inequality and intimate partner violence operates in the same way within intimate relationships as it does within a national context.

However, in the process of developing the thesis, after the research agenda and research questions had been set, it was found that this question could not be addressed because the data source being used (BCS 2008/09) was unable to support its analysis. Therefore these remain key questions in association with economic inequality and intimate partner violence against women. The identification of a data source which can support an examination of them, and the analysis of these two positions women simultaneously hold in relation to each other, is an area for future research and development.

The second reason for the focus on intimate partner violence is a methodological one. The research agenda (set out in chapter 2) calls for a national level analysis within a UK context. There are no data sources which meet these requirements and which contain data on a comprehensive range of expressions of violence against women encompassed within the terminology. Many contain data on intimate partner, and/or domestic, violence (intimate partner and household members), sexual violence, and increasingly stalking, but not also on forced marriage or female genital mutilation, etc. Therefore a narrower focus than 'violence against women' is required. Further, the focus on intimate partner violence enables a sufficient depth of analysis to be achieved within the limited timeframe of the Ph.D. In focusing on intimate partner violence in this thesis, a number of the key conclusions drawn will contribute to the development of a future research agenda, along with previous research which has considered other expressions of violence against women to consider whether the associations found between economic inequality and those different expressions are consistent, or whether certain expressions of violence against women have very different relationships with economic inequality.

Economic inequality, as a theoretical concept, is conceived of - in this thesis - as the disparity in the distribution of, and access to, economic resources within a population. The analysis in this thesis concentrates on the disparity in economic resources between working-age women in England and Wales. Economic resources include both income and other economic assets, such as property, investments and savings. In reviewing the literature on economic inequality, (see for example: Walby, 2009; Pantazis, Gordon and Levitas, 2006; Pantazis and Ruspini, 2006; Hills and Stewart, 2005; Pantazis, 2000; and Spicker, 2007) a number of key economic resources were identified, including: personal income, employment, household income, housing, poverty status, and neighbourhood context. These were used to identify nine factors representing economic resources which were then deployed in the analysis in this thesis: women's current employment status, women's earned income, and women's socio-economic class; household income, housing tenure, and household poverty status; level of neighbourhood income deprivation; level of neighbourhood employment deprivation; and specialist violence against women service provision. Although most of these factors are part of the BCS 2008/09, they were all reconstructed to some degree to enable the precise hypotheses (set forth at the end of chapter 4) to be tested. Two of these factors, however, were constructed and added to the BCS 2008/09 using data from within the BCS and from external data sources (household poverty status and specialist violence against women service provision; described in chapter 4: section 4.6). In this thesis economic resources are used to operationalise the concept of 'economic inequality'. In doing so, this wide range of factors representing economic resources is explored; both

individually and in conjunction with one another in their associations with intimate partner violence against women.

Walby (2009) argues that the unit of analysis (of economic resources) is significant in understanding economic inequality and its associations with violence against women. Traditionally, economic inequality within countries is analysed at the level of the household, but this risks obscuring women's unique economic position. Previous work on violence against women and economic inequality has demonstrated the utility of deploying the individual as the unit of analysis in order to make women's position within households visible and to ensure that it is *women's* economic position in relation to intimate partner violence which is examined. This thesis combines these two approaches and utilises both the individual and the household as units of analysis exploring both in isolation and in conjunction with each other. In doing this, this thesis demonstrates that both are required to fully understand the very complex relationship between economic inequality and intimate partner violence. The units of analysis are also additionally extended to the neighbourhood level. In doing so it demonstrates that women in the poorest neighbourhoods are at increased risk of intimate partner violence compared to women in more affluent neighbourhoods. It also demonstrates that, as a unit of analysis, the neighbourhood is not as important as the household in understanding economic inequality and intimate partner violence against women.

The nine factors representing economic resources are then organised within these three analysis units:

Individual:

- Women's current employment status
- Women's earned income
- Women's socio-economic class

Household:

- Household income
- Housing tenure type
- Household poverty status

Neighbourhood:

- Level of neighbourhood income deprivation
- Level of neighbourhood employment deprivation
- Specialist violence against women service provision

Previous research posits a lack of economic resources, particularly women's income, to be associated with increased risk of intimate partner violence. The *Literature Review* in chapter 2 identifies studies which have examined the association between: women's income and intimate partner violence (for example, the World Health Organisation, 2010; Johnson, Ollus and Nevala, 2008); women's employment and intimate partner violence (for example, Votruba-Drzal, Lohman, and Chase-Lansdale, 2002; Riger, Staggs and Schewe, 2004); household income and intimate partner violence (for example, Benson, Wooldredge, Thistlethwaite and Fox, 2004); housing tenure and intimate partner violence (for example, Walby and Allen, 2004); neighbourhood deprivation and intimate partner violence (for example, DeKeseredy,

Alvi, Schwartz and Perry, 1999; Renzetti and Maier 2002); and specialist service provision and intimate partner violence (Stout, 1992). In addition, a number of studies were identified which have concluded that poorer women are at greater risk of violence, and that the violence they experience is also more severe (see for example: Allard, Albelda, Colten and Cosenza, 1997; Browne and Bassuk, 1997; Honeycutt, Marshall and Weston, 2001; Romans, Forte, Cohen, Du Mont and Hyman, 2007; and Kalmus and Straus, 1999). Walby and Allen (2004), for example, identify the three most important risk factors for recent (past 12 months) domestic violence (intimate partners and/or household members) as being: 'young; female; and poor' (Walby and Allen, 2004: 74). A number of studies also identify the importance of economic resources, particularly women's income in relation to exiting violent relationships (for example, Anderson and Saunders, 2003; Short, McMahon, Chervin, Shelley, Lezin, Sloop and Dawkins, 2000) and to not having to return to violent relationships because of economic necessity (for example, Griffing, Ragin, Sage, Madry and Primm, 2001).

The research questions set forth in this thesis (see the end of this section for a reminder of these) are designed to replicate the major findings in the field for a new data set (the BCS 2008/09) and to extend beyond the current limits of the field by exploring a wider range of economic resources within this single study and by exploring the relative importance of economic factors in association with intimate partner violence. In addition, this thesis specifically disaggregates women by their relationship status at point of survey in order to explore and compare the associations between economic inequality and remaining in violent relationships and having exited a recently violent relationship.

The analysis is conducted on a representative sample of 12,920 working-age women in the British Crime Survey 2008/09. The critical analysis of the process to select a data source and measure of intimate partner violence was complex, but was of paramount importance. This process is detailed in chapter 3. Police reported incident data with a domestic violence qualifier and survey data were explored before the BCS 2008/09 was identified as the most appropriate data source for the analysis of the thesis question within the context of the research agenda.

In selecting the most appropriate measure of intimate partner violence for analysis, the value of incident measures is recognised. However, the exploration of the BCS 2008/09 incident measure resulted in its rejection as it was unable to support a robust analysis of the thesis question, in particular because of the number of women who were unable or unwilling to disclose the frequency with which they had experienced intimate partner violence during the past year. A recent prevalence measure is identified as the most appropriate available in the BCS 2008/09 and this is utilised in the analysis. This measure includes twenty-five separate forms of 'violence' including physical and sexual violence, psychological abuse, threats, and stalking behaviours within the past 12 months.

Once the most appropriate data source and measure of intimate partner violence had been identified, the thesis moved on in chapter 4 to consider the detailed operationalisation of the research questions within the frame of the data source selected (BCS 2008/09). Chapter 4 also discussed the quantitative methods to be used in the analysis. At the end of this chapter sixteen hypotheses were set out which direct the analysis and ensure that the intricacies of the research questions are

explored to the fullest extent possible. To this end it was necessary to break a number of research questions down into their constituent parts hence some research questions have more than one hypothesis linked to them.

The empirical findings are produced from the analysis of the responses of 12,920 working-age women in the British Crime Survey 2008/09. These findings are extrapolated to, and presented for, the national population of working-age women in England and Wales in chapter 5. Chapter 6 discussed the empirical research findings in relation to each of the research questions laid out at the end of chapter 2.

This chapter presents the conclusions drawn from the empirical findings and the discussion of the research questions in conjunction with these empirical findings (chapter 6), in order to address the overarching thesis question of *how economic inequality is associated with intimate partner violence against women*.

The following section of this chapter begins by presenting the overarching conclusion that **economic inequality is associated with increased likelihood of intimate partner violence against women**. The empirical evidence presented in chapter 5 demonstrates that women with fewer economic resources are significantly more likely to experience intimate partner violence compared to women with comparatively greater economic resources. If economic inequality is conceived of as the disparity in economic resources between women, this enables the link between the empirical evidence and the conceptual question to be made.

The unit of analysis of economic resources matters. In deploying individual, household and neighbourhood economic resources in the analysis, a much deeper understanding of the associations between economic inequality and intimate partner

violence against women is possible compared to deploying only one of these units of analysis. In particular the importance of household economic resources is revealed compared to both individual and neighbourhood economic resources. Analysing all three in this way leads to a further conclusion: **women's household structure is revealed as one of the key links between economic inequality and intimate partner violence against women.**

In considering the relative importance of economic resources in association with intimate partner violence, it is also concluded that **the significance of employment extends beyond earnings and women's occupational status may be a more useful measure than current employment.** However, **the association between earned income and intimate partner violence is revealed to be highly complex,** especially when considering those women who have exited recently violent relationships. It is also concluded that **housing tenure is the most significant economic resource in association with intimate partner violence** for working-age women in England and Wales.

Disaggregating women in the national population experiencing intimate partner violence by their current relationship reveals the differences and the similarities between those women remaining in violent relationships and those women who have exited recently violent relationships in association with intimate partner violence. In doing so, this thesis concludes that **a stronger relationship is found between economic inequality and exiting violent relationships than between economic inequality and remaining in violent relationships.** Women's household structure is the key link in understanding this stronger relationship.

In addition to the conclusions drawn in addressing the thesis question, the utilisation of statistics in this thesis to help build the knowledge base needed for transformative social change also needs to be addressed. It is concluded that **the process of critically analysing the choice of data source, construction of analysis sample, the measure of intimate partner violence, and the (re)construction of factors representing economic resources is essential to the research process**. It ensures both that the empirical findings are robust, and that the conclusions drawn are framed by the strengths, but also any limitations, of the data and the analysis methods. Taking careful account of issues of survey design, missing data, and the impact of complex samples are also integral to this process.

This analytical process also enables critical gaps to be exposed. One such critical gap is the exploration of intra-household economic inequality and intimate partner violence against women and whether the associations found between women at the national level are replicated within households between women and their male partner. This critical gap could not be considered in this thesis because the data was unable to support its analysis. There is currently no UK data source which would enable this question to be fully explored. However, finding the means to extend the research agenda in this way is important for the future development of theoretical and empirical knowledge on this question.

In addition, this thesis addressed the question of *how economic inequality is associated with intimate partner violence against women* for working-age women in permanent residential addresses in England and Wales. Although this is necessary and important research this frame was largely a consequence of the availability of

data. Once again, it was found that there is currently no UK data source which would enable the thesis question to be fully explored beyond this frame of *working-age* women in *England and Wales* situated in *permanent residential addresses*. The analysis frame needs to be extended, to women of all ages and to women who are situated outside of permanent residential addresses, including women in institutions and women who are homeless or insecurely housed. In extending the frame in this way it is likely that the associations found between economic inequality and intimate partner violence will be somewhat different to those presented in this thesis for working-age women in permanent residential accommodation.

Research questions

The overarching thesis question: *how is economic inequality associated with intimate partner violence against women* is explored through a number of research questions which identify and focus on key parts of the thesis question and consider the questions raised from the review of the literature in chapter 2.

1. Is current employment as important as socio-economic class?
2. Is women's earned income associated with intimate partner violence?
3. Is women's earned income more important than current employment and socio-economic class?
4. Are household economic resources associated with intimate partner violence?
5. Does living in an impoverished neighbourhood increase the likelihood of intimate partner violence?

6. Is there an association between specialist violence against women service provision and intimate partner violence in the UK?
7. Are women's employment and income the most important economic resources associated with intimate partner violence?
8. Is being in a currently violent relationship associated with economic inequality?
9. Does exiting a violent relationship impact on women's economic inequality?
10. Is exiting a violent relationship associated with greater economic inequality than remaining?
11. Is women's economic inequality associated with intimate partner violence in the same way between women in the national context as between women and their male partner within the household? [*Not empirically explored in this thesis (see above)*]

7.2 Conclusions

In this section each of the conclusions highlighted above is explored in more detail.

Economic inequality is associated with increased likelihood of intimate partner violence against women

The empirical findings presented in this thesis demonstrate that women with fewer economic resources are significantly more likely to experience intimate partner violence than women with comparatively greater economic resources. For example, unemployed women are found to have significantly higher odds of intimate partner violence than employed women. Women in social rented housing are found to have a significantly higher likelihood of intimate partner violence than women in owner/occupier housing. Women in the most deprived neighbourhoods are found to have significantly higher odds of intimate partner violence compared to women in more affluent neighbourhoods.

A disparity in economic resources between women in the population is therefore found to be significantly associated with intimate partner violence. Where women have comparatively fewer economic resources the likelihood of intimate partner violence is greater. Economic inequality has been conceived of, in this thesis, as the disparity in economic resources within a population. The findings of a significant association between a disparity in economic resources and intimate partner violence therefore links to the concept of economic inequality and *how* it is associated with intimate partner violence against women. The conclusion can thus be drawn that economic inequality is associated with increased likelihood of intimate partner violence for women, although the complexities of this are many and varied.

For example, not all economic resources are of equal importance in association with intimate partner violence against women when considered in conjunction with one another. Housing tenure is found to be the most significant economic resource in association with intimate partner violence in this thesis. Employment is found to be significant beyond earned income, and the more complex factor of occupational status appears to be a more useful measure than current employment status. Earned income is found to have a particularly complex relationship with intimate partner violence, especially for women who have exited recently violent relationships.

Taking account of the economic resource unit of analysis and women's relationship at point of survey are further complexities. Each of these is explored below.

Nevertheless, even though the complexities are many and varied, there is robust evidence presented in this thesis of the association between economic inequality and intimate partner violence, and that these two domains are negatively related. As economic resources become comparatively fewer, the likelihood of intimate partner violence increases. Thus, economic inequality is associated with increased likelihood of intimate partner violence against women.

The unit of analysis of economic resources matters

Walby (2009) argues that the unit of analysis (of economic resources) matters; in particular that women's own or individual economic resources are required to explore the relationship between economic inequality and violence against women.

The analysis in this thesis utilises economic resources at three different units of analysis; the individual, the household and the neighbourhood. In doing so, it

demonstrates that both the individual level and the household level are important in understanding the complexities of the association between economic inequality and intimate partner violence. The individual as a unit of analysis is vital in order to ensure women's unique economic position within the household is not obscured, and yet it is household economic resources which are found, in this thesis, to be the most significant in association with intimate partner violence.

In particular, the importance of household structure is revealed by including the household as a unit of analysis as well as the individual (see the discussion following on the conclusion: women's household structure is revealed as one of the key links between economic inequality and intimate partner violence against women).

In addition to the individual and household units for analysis, the neighbourhood was also utilised as a unit of analysis. When neighbourhood economic factors are considered alone, the level of neighbourhood income and neighbourhood employment deprivation are both found to be significantly associated with intimate partner violence, although specialist service provision is not.

In utilising the three units of analysis, evidence is also provided which suggests that the neighbourhood is not as significant a unit of analysis for economic inequality and intimate partner violence against women as the household.

Women's household structure is revealed as one of the key links between economic inequality and intimate partner violence against women

Originally household structure (single adult household or households with two or more adults) was specified as a control variable in regression models which also

specified household income. This was to account for the number of adults in a household who contribute to that income. However, it was noted that in every regression analysis in which household structure was deployed, it was also found to be significantly associated with intimate partner violence over and above the effects of the factors representing economic resources.

Utilising this observation, women who remain in violent relationships and those who have exited recently violent relationships were further differentiated by their household structure. In doing so, the relationship between economic inequality and intimate partner violence changes, especially for women who have exited recently violent relationships. The move into single adult households is particularly important. Whilst a strong correlation between exiting recently violent relationships and economic inequality is found at the whole group level, this largely disappears when women in single adult households are considered. Women in single adult, female-headed households are found to be poorer on every economic factor except earned income than women in households with two or more adults, irrespective of recent intimate partner violence. The greater economic inequality associated with exiting a recently violent relationship is thus largely accounted for by the move into single adult households because of the greater economic inequality of single adult, female-headed households *per se*. Note that women who exit recently violent relationships are significantly more likely to reside in single adult households than women in the control population and women remaining in violent relationships.

Disaggregating by household structure also enabled the identification of a small, but substantially disadvantaged group of women – those women in a non-cohabiting

violent relationship who reside in single adult households. These women are significantly poorer than every other group examined across every economic resource factor. The significantly greater economic inequality of this group would seem to counter a later conclusion made in this thesis that a stronger relationship is found between economic inequality and exiting violent relationships compared to that found between economic inequality and remaining in violent relationships. However, when examined in more detail, this group of women are also found to be three times more likely to have exited, but subsequently returned to, that violent relationship compared with women in cohabiting violent relationships. This suggests therefore that there is a strong link between economic inequality and exiting, and provides some evidence that women with the greatest economic inequality (i.e. the fewest economic resources) may be more likely to return to violent relationships.

Women's household structure is therefore revealed as one of the key links between economic inequality and intimate partner violence against women.

The significance of employment extends beyond earnings and occupation may be a more useful measure than current employment status.

There is a debate in the literature about whether employment can provide additional protective benefits for women against intimate partner violence beyond that provided by an earned income, such as support networks outside the family (see for example MacMillan and Gartner, 1999); and whether current employment status or a more complex measure of employment is needed which can take account of the in/security and longer-term effects for women (see for example, Votruba-Drzal, Lohman, and Chase-Lansdale, 2002; Barusch, Taylor and Derr, 1999; and Riger,

Staggs and Schewe, 2004). This conclusion supports the idea that the effects of employment extend beyond earned income and that more complex measures than current employment status may be more useful in understanding the associations with intimate partner violence.

For the analysis of the national population of working-age women in England and Wales, when considered individually, both women's current employment status and women's socio-economic class are found to be significantly associated with intimate partner violence. The odds of intimate partner violence for women who are currently unemployed or economically inactive are significantly higher than those for women who are employed. The odds of women in the lowest three socio-economic classes (never worked and long-term unemployed; semi-routine and routine occupations; and lower supervisory and technical occupations) are also found to be significantly higher than those for women in higher managerial, administrative and professional occupations. By contrast, when women with an earned income are considered (those currently in employment), the level of earned income is not significantly associated with intimate partner violence. For example, the odds of intimate partner violence for women with low earned incomes of £10,000 or less per annum are not significantly different to those for women with above average earned incomes of £20,000 or more per annum. This suggests that the significance of employment in association with intimate partner violence extends beyond earnings.

It is only when unemployed and economically inactive women are added to the earned income factor with a £0 earning that the association with intimate partner violence becomes significant. Women with £0 earnings because of unemployment or

economic inactivity are significantly more likely to experience intimate partner violence than women with above average earnings. Therefore, the significance lies in the difference between earned income and zero earned income. This further supports the conclusion that the significance of employment extends beyond earnings.

When the three factors representing individual economic resources (women's current employment status, women's earned income, and women's socio-economic class) are compared, current employment status and socio-economic class are found to be significantly associated with intimate partner violence over and above the effects of women's earned income. Women's earned income, on the other hand, is not found to be significantly associated with intimate partner violence over and above the effects of employment. This again further supports the conclusion that the association between employment and intimate partner violence extends beyond earnings.

In addition, in this analysis, the state of current 'unemployment', compared to current 'economic inactivity' is found to be significant. For example, the odds of intimate partner violence for unemployed women are significantly higher than those for women with both above average earned incomes, and also low earned incomes. The odds of intimate partner violence for economically inactive women are also found to be significantly higher than those for women with above average earned incomes, *but* they are not significantly different to those for women with low earned incomes. Given that a significant difference is found for the effects of unemployment

and economic inactivity, this once again further supports the conclusion that the significance of employment extends beyond earned income.

When these three individual factors are considered in conjunction with household economic resources and neighbourhood economic resources, only women's socio-economic class is found to be significant over and above the effects of current employment status, earned income, household income and housing tenure. This suggests that occupation may be a better measure than current employment status.

These five points support this conclusion that *the significance of employment extends beyond earnings and occupation may be a better measure than current employment status* for the national population of working-age women.

However, no significant difference is found between the group of women who remain in violent relationships and the group of women who have exited recently violent relationships on any of the three factors - current employment, earned income, or socio-economic class. Employment then, whether current status, occupational status or level of earnings, does not appear to be related to remaining in or exiting from violent relationships.

For most women in currently violent relationships employment, whether current status, occupational status or level of earnings, does not appear to be related to intimate partner violence in comparison to the control population either, with the exception of a small group of non-cohabiting women residing in single adult households. For these women, current employment status, earned income and socio-economic class are significant. Evidence from this group then provides some further support for this conclusion.

For those women who have exited and reside in single adult households, socio-economic class is the only factor of the three significantly associated with intimate partner violence. This supports the conclusion that the significance of employment extends beyond earnings and that occupation may be a better measure than current employment status.

However, for women who have exited recently violent relationships (where household structure is not accounted for) and for women who have exited and reside in households with two or more adults, earned income, but not current employment status or socio-economic class, is important.

The association between earned income and intimate partner violence is revealed to be highly complex

There is a substantial body of work on women's income and intimate partner violence, both on the risk of intimate partner violence by income level and income source (for example: Johnson, Ollus and Nevala, 2008; Tolman and Raphael, 2000; World Health Organisation 2010; Kalmus and Straus, 1999) and on the importance of income for exiting violent relationships (for example: Short, McMahon, Chervin, Shelley, Lezin, Sloop and Dawkins, 2000; and Anderson and Saunder's, 2003). However, the specific relationship between *earned* income and intimate partner violence is still unclear.

The findings in this thesis add a little more clarity, finding earned income to be significantly associated with exiting recently violent relationships compared to the control population, but not with remaining in violent relationships. However, no significant difference in earned income is found between women who have exited

from and those who remain in violent relationships. Therefore, although some clarity is provided, it can also be concluded that the association between earned income and intimate partner violence is highly complex.

Whilst there is no significant association found between earned income and intimate partner violence for the national population when earned income is considered in conjunction with the other eight factors representing economic resources, earned income is significant in association with exiting a violent relationship.

The odds of intimate partner violence are 56% lower for women with below average earned incomes compared to those with above average earned incomes. This suggests that women who have exited (the only women in this population to have experienced intimate partner violence) have higher earned incomes than women in the control population. However, the odds of intimate partner violence for women with low earned incomes are not significantly different to those of women with above average earned incomes. This suggests that women who have exited either have a low earned income or an above average earned income compared to women in the control population. This supports the conclusion that the association between earned income and intimate partner violence is highly complex.

When household structure is taken into account, earned income is no longer found to be significantly associated with intimate partner violence for exited women in single adult households, whereas earned income is significantly associated with intimate partner violence for exited women in households with two or more adults. Here, the odds of intimate partner violence are around 70% lower for women with below average earned incomes compared to above average earned incomes.

However, once more no significant difference is found in the odds of intimate partner violence for women with low earned incomes compared to women with above average earned incomes. The findings by household structure further support the conclusion that the association between earned income and intimate partner violence is highly complex.

One possible way forward to further interrogate this complexity is to replicate the analysis using an income factor which additionally includes alternative income sources such as benefits and social security payments, savings, maintenance payments, etc, as well as earned income.

Housing tenure is the most significant economic resource in association with intimate partner violence

Relatively little attention has been paid to housing in association with intimate partner violence. Walby and Allen (2004) looked at the effect of housing tenure on domestic violence against women, but did not consider housing tenure in conjunction with other economic factors.

Housing tenure is found to be significantly associated with intimate partner violence in all the analyses, except for women who have exited recently violent relationships and reside in single adult households. Where housing tenure is found to be significantly associated with intimate partner violence, women in social rented housing, and in many cases also women in private rented housing, have significantly higher odds of intimate partner violence compared to women in owner/occupier housing.

Housing tenure is significantly associated with intimate partner violence for women in the national population, for women in currently violent relationships and for some women who have exited recently violent relationships. The only group for which residing in rented housing is not significantly associated with increased odds of intimate partner violence (compared to residing in owner/occupier housing) is women residing in single adult households who have exited recently violent relationships or are in the control population, this suggests that the association is not wholly explained by women exiting violent relationships and having to re-locate into social or private rented housing.

No other economic factor is so consistently associated with intimate partner violence in this thesis; this supports the conclusion that housing tenure is the most significant economic resource in association with intimate partner violence.

Housing is one of the resources which has received relatively less attention, compared to income or employment for example. The findings in this thesis and this conclusion suggest that inclusion of housing as a key factor in association with intimate partner violence would be beneficial in developing the field further.

A stronger relationship is found between economic inequality and exiting violent relationships than between economic inequality and remaining in violent relationships

When the group of women who have exited recently violent relationships are compared to the control group (no recent experience of intimate partner violence), earned income, household income and housing tenure are found to be significantly associated with intimate partner violence over and above the effects of socio-

economic class and current employment status. The model which explores this relationship (table 5.39: final model) fits better than any other model specified, i.e. economic resources factors enable the model to predict intimate partner violence for this population more accurately than they do for any other population examined. The AUC fit statistic of 0.777 is well within Hosmer and Lemeshow's 'acceptable discrimination' threshold (0.7-0.8) and is on the way to reaching 'excellent discrimination'.

When the group of women who remain in violent relationships is explored, household income, housing tenure and household poverty status are found to be significantly associated with intimate partner violence over and above the effects of current employment status, earned income and socio-economic class. However, the model which explores this relationship (table 5.33: final model) does not fit well. The AUC fit statistic of 0.673 fails to reach Hosmer and Lemeshow's 'acceptable discrimination' threshold. This suggests that economic resources (or at least those explored in this thesis) are not especially useful in predicting intimate partner violence for this population. This means that there is not a considerable difference in the economic position of women remaining in violent relationships and those in the control population (who have no recent experience of intimate partner violence).

This further suggests that economic inequality is relatively important in delineating women who have exited violent relationships from the control population, but is not important to the same degree for the delineation of those who remain in violent relationships from the control population. This may mean that non-economic factors are significant in determining whether women remain in or exit violent relationships

compared to exiting. This is somewhat at odds with previous research findings which suggest that economic resources are a, if not the, significant factor in a woman's ability to exit a violent relationship (see for example Griffing, Ragin, Sage, Madry and Primm, 2001; Lloyd, 1997; and Strube and Barbour, 1984).

In addition, no significant difference is found between the group of women who remain and the group of women who exit violent relationships in terms of their current employment status, their earned income, or their socio-economic class. If economic resources were the most significant factor in exiting, it would be expected that those women who have exited would have comparatively greater individual economic resources than those women who remain: this is not the case in this analysis.

Thus it can be concluded that a stronger relationship is found between economic inequality and exiting violent relationships than between economic inequality and remaining in violent relationships, but the reasons for this require clarification through more detailed work with women in England and Wales.

The process of critically analysing the choice of data source, construction of analysis sample, the measure of intimate partner violence, and the (re)construction of factors representing economic resources is essential to the research process

The conclusions drawn above are only as robust as the data they are based on and the analysis methods used to explicate them. Undertaking a comprehensive critical analysis of data sources, measures of intimate partner violence and factors representing economic resources means that the substantive conclusions above can be presented with confidence. The data, measures and analysis have been shown to

be the most appropriate available for the examination of the question *how is economic inequality associated with intimate partner violence against women* within the context of the research agenda set forth for this thesis.

In addition, the conclusions are bounded within the limitations explicated by this process. For example, the analysis population has been named as ‘working-age’ women because the BCS 2008/09 limits participation in the domestic violence, sexual assault and stalking module to those aged 16-59 years. Thus, the findings have not been represented as applicable to the whole population of women in England and Wales; to do so could not be considered robust.

It can therefore be concluded that the process of critically analysing the choice of data source, construction of analysis sample, the measure of intimate partner violence, and the (re)construction of factors representing economic resources is essential to the research process and should be one which is instigated in all such research projects.

Final conclusion

In examining the question of *how economic inequality is associated with intimate partner violence against women*, this thesis has contributed new theoretical and empirical knowledge to the agenda which seeks to eliminate violence against women. Economic inequality is associated with increased likelihood of intimate partner violence. Therefore a redistribution of income and economic assets within the population in order that poorer women are able to increase their economic resources is likely to have a significant effect. Improving the economic equality of women residing in single adult, female-headed households is likely to make a

substantive difference. In particular, improving the economic equality of women in single adult, female-headed households may prevent women having to return to violent relationships through economic necessity.

Bibliography

ACPO (2008) *Guidance On Investigating Domestic Abuse*, London, ACPO [online] <http://www.talk2someone.org.uk/professional/documents-and-strategies/national-documents-strategies/acpo-guidance-on-investigating-domestic-violence> accessed December 2010.

Adams, P., Towns, A. & Gavey, N. (1995) Dominance and submission: The rhetoric men use to discuss their violence towards women. *Discourse And Society* 6(3), 387-406.

Agarwal, B. & Panda, P. (2007) Toward freedom from domestic violence: The neglected obvious. *Journal Of Human Development* 8(3), 359-388.

Allard, M., Albelda, R., Colten, M. & Cosenza, C. (1997) *In Harms Way? Domestic Violence, AFDC Receipt And Welfare Reform In Massachusetts*. Boston, University of Massachusetts, McCormack Institute and Centre for Survey Research: http://www.umb.edu/editor_uploads/images/centers_institutes/center_social_policy/In_Harms_Way_Domestic_Violence,_AFDC_Receipt,_and_Welfare_Reform_in_Massachusetts.pdf September 2012.

Allison, P. (2013) What's the Best R-Squared for Logistic Regression? *Statistical Horizons* [online] <http://www.statisticalhorizons.com/r2logistic> accessed February 2013.

Allison, P. (2002) *Missing Data*. Philadelphia, University of Pennsylvania.

Anderson, D. & Saunders, D. (2003) Leaving an abusive partner: An empirical review of predictors, the process of leaving, and psychological well-being. *Trauma, Violence, & Abuse* 4(2), 163-191.

Anderson, K. (1997) Gender, status, and domestic violence: An integration of feminist and family violence approaches. *Journal Of Marriage And The Family* 59(3), 655-669.

Arulampalam, W., Booth, A. and Bryan, M. (2007) Is there a glass ceiling over Europe: Exploring the gender pay gap across the wage distribution. *Industrial And Labour Relations Review* 60(2), 163-186.

Asal, V. & Browne, M. (2010) A cross-national exploration of the conditions that produce interpersonal violence', *Politics And Policy* 38(2), 175-192.

Ashcroft, J., Daniels, D. & Hart, S. (2004) *When Violence Hits Home: How Economics And Neighborhood Play A Role*. Washington, U.S. Department of Justice.

Bachman, R. & Saltzman, L. (1995) *Violence Against Women: Estimates From The Redesigned Survey*. Washington, U.S. Department of Justice.

Baker, C., Cook, S. & Norris, F. (2003) Domestic violence and housing problems: A contextual analysis of women's help-seeking, received informal support and formal system response. *Violence Against Women* 9(7), 754-783.

Bandura, A. (1986) The explanatory and predictive scope of self-efficacy theory. *Journal Of Social And Clinical Psychology* 4, 359-373.

Bandura, A. (1977) *Social Learning Theory*. General Learning Press.

Baron, L., Straus, M. & Jaffee, D. (2006) Legitimate violence, violent attitudes and rape: A test of the cultural spillover theory. *Annals Of The New York Academy of Sciences* 528, 79-110.

Baron, L. & Straus, M. (1989) *Four Theories Of Rape In American Society*. New Haven, Yale University Press.

Barusch, A., Taylor, M.J. & Derr, M. (1999) *Understanding Families With Multiple Barriers To Self-Sufficiency*. Salt Lake City, University of Utah, Social Research Institute: <http://www.socwk.utah.edu/pdf/sri-final1.pdf> August 2012.

Basile, K. & Black, M. (2011) Intimate partner violence against women. Renzetti, C., Edleson, J. & Kennedy Bergen, R. (eds) *Sourcebook On Violence Against Women*. 2nd ed. Thousand Oaks, Sage, 111-132.

Becker, G. (1991) *A Treatise On The Family*. Cambridge, Harvard University Press.

Benson, M., Wooldredge, J., Thistlethwaite, A. & Fox, G. (2004) The correlation between race and domestic violence is confounded with community context. *Social Problems* 51(3), 326-342.

Benson, M., Fox, G., DeMaris, A. & Van Wyk, J. (2003) Neighbourhood disadvantage, individual economic distress, and violence against women in intimate relationships. *Journal Of Quantitative Criminology* 19(3), 207-235.

Bhuyan, R., Mell, M., Senturia, K., Sullivan, M., & Shiu-Thornton, S. (2005) Women must endure according to their karma: Cambodian immigrant women talk about domestic violence. *Journal Of Interpersonal Violence* 20 (8), 902 – 921.

Bickel, R. (2007) *Multilevel Analysis For Applied Research: It's Just Regression!* New York, The Guilford Press.

Bograd, M. (1988) Feminist perspectives on wife abuse: An introduction. Yllö, K. and Bograd, M. (eds.) *Feminist Perspectives On Wife Abuse*. Beverly Hills, Sage, 11-26.

Bolling, K. Grant, C. & Donovan, J. (2009) *2008-09 British Crime Survey (England And Wales): Technical Report Volume I*. London, Home Office.

Brittingham, A., Towangeau, R. & Ward, K. (1998) Reports of smoking in a national survey: data from screening and detailed interviews and from self- and interviewer-administered questions. *Annals Of Epidemiology* 8, 393-401.

Britton, A. (2012) Intimate violence 2010/11 British Crime Survey. Smith, K. (ed), Osborne, S., Lau, I. & Britton, A. *Homicide, Firearm Offences And Intimate Violence 2010/11: Supplementary Volume 2 To Crime In England And Wales 2010/11* London, Home Office, 83-115.

Bromley Briefings, Prison Reform Trust. (Nov 2009)

<http://prisonreformtrust.org.uk/uploads/documents/BromleyBriefingsNov09.pdf>

accessed January 2011.

Browne, A. & Bassuk, S. (1997) Intimate violence in the lives of homeless and poor housed women: prevalence and patterns in an ethnically diverse sample. *American Journal Of Orthopsychiatry* 66(2), 526-537.

Brownridge, D. (2006) Partner violence against women with disabilities: prevalence, risk and explanations. *Violence Against Women* 12(9), 805-822.

- Brush, J. (2007) Does income inequality lead to more crime? A comparison of cross-sectional and time series analyses of U.S. counties. *Economics Letters* 96, 264-268.
- Bufkin, J. & Bray, J. (1998) Domestic violence, criminal justice responses and homelessness: Finding the connection and addressing the problem. *Journal Of Social Distress And The Homeless* 7(4), 227-240.
- Burns, R. & Burns, R. (2008) *Business Research Methods And SPSS*. London, Sage Publications.
- Butler, J. (1999) *Gender Trouble*. New York, Routledge.
- Campbell, A. (1993) *Men, Women, Aggression*. New York, Basic Books.
- Campbell, J. (1992) "If I can't have you no one can": Power and control in homicide of female partners. Radford, J. & Russell, D. (eds) *Femicide: The Politics Of Woman Killing*. Buckingham, Open University Press, 99-113.
- Carrera, A. & Beaumont, J. (2010) Income and wealth. *Social Trends* 41. London, Office of National Statistics.
- Centre for Multilevel Modelling: Bristol University: www.ccm.bris.ac.uk
- Coleman, D. & Strauss, M. (1986) Marital power, conflict and violence in a nationally representative sample of American couples. *Violence And Victims* 1(2), 141-157.
- Compton, W., Michael, J., Krasavage-Hopkins, E., Schneiderman L. & Bickman, L. (1989) Intentions for post-shelter living in battered women. *Journal Of Community Psychology* 17(2), 126-128.

Connell, R. (1995) *Masculinities*. Berkeley, University of California Press.

Cook, S., Gidycz, C., Koss, M. & Murphy, M. (2011) Emerging issues in the measurement of rape victimisation. *Violence Against Women* 17(2), 201-218.

Cook, D., Burton, M., Robinson, A. & Vallely, C. (2004) *Evaluation Of Specialist Domestic Violence Courts / Fast-Track Systems* London, CPS and Department for Constitutional Affairs [online]

<http://wlv.openrepository.com/wlv/bitstream/2436/22612/1/Cook%20et%20al%20%282004%29.pdf> accessed January 2013.

Couper, M. & Rowe, B. (1996) Evaluation of a computer assisted self-interview component in a computer assisted personal interview survey. *Public Opinion Quarterly* 6(1), 89-105.

Coy, M., Kelly, L. & Foord, J. (2009) *Map Of Gaps 2: The Postcode Lottery Of Violence Against Women Support Services*. London, EVAW & EHRC.

Crockett, A. (Updated by: Afkhami, R., Rafferty, A., Higgins, V. & Marshall, A.) (2011) *Weighting The Social Surveys, Version 1.9*. London, ESDS Government.

Crowell, N. & Burgess, A. (eds) (1996) *Understanding Violence Against Women*. Washington, National Academy Press.

Daly, M., Wilson, M. & Vasdev, S. (2001) Income inequality and homicide rates in Canada and the United States. *Canadian Journal Of Criminology And Criminal Justice* 43, 219–236.

DeKeseredy, W. & Schwartz, M. (2011) Theoretical and definitional issues in researching violence against women. Renzetti, C., Edleson, J. & Kennedy Bergen, R. (eds) *Sourcebook On Violence Against Women*. 2nd ed. Thousand Oaks, Sage, 3-22.

DeKeseredy, W. & Schwartz, M. (2002) Theorising public housing woman abuse as a function of economic exclusion and male peer support. *Women's Health And Urban Life* 1(2), 26-45.

DeKeseredy, W. (2000) Current controversies on defining non-lethal violence against women in intimate heterosexual relationships: Empirical implications. *Violence Against Women* 6(7), 728-746.

DeKeseredy, W., Alvi, S., Schwartz, M., & Perry, B. (1999) Violence against and the harassment of women in Canadian public housing: An exploratory study. *Canadian Review Of Sociology And Anthropology* 36(4), 499-516.

Department for Work and Pensions. (2009) *Households Below Average Income: An Analysis Of The Income Distribution 1994/95 – 2008/09*. London, Department for Work and Pensions.

Dobash, R., Dobash, R., Wilson, M. & Daly, M. (1992) The myth of sexual symmetry in marital violence. *Social Problems* 39(1), 71-91.

Dobash, R. and Robash, R. (1998) Violent men and violent contexts. Dobash, R. and Dobash, R. (eds). *Rethinking Violence Against Women*. Sage Series on Violence Against Women. Thousand Oaks. Sage.

Dutton, D. (1988) *The Domestic Assault Of Women: Psychological And Criminal Justice Perspectives*. Boston, Allyn and Bacon.

Ellesberg, M., Heise, L., Peña, R., Agurto, S. & Winkvist, A. (2001) Researching domestic violence against women: Methodological and ethical issues. *Studies In Family Planning* 32(1), 1-16.

Ellis, E.M., Atkeson, B.M. & Calhoun, K.S. (1993) An assessment of long term reaction to rape. *Abnormal Psychology* 90, 263-264.

End Violence Against Women Coalition (EVAW): *What Is Violence Against Women:* [online] www.endviolenceagainstwomen.org.uk/ accessed December 2012.

England, P. (2003) Separate and soluble selves: Dichotomous thinking in economics. Ferber, M & Nelson, J (eds) *Feminist Economics Today: Beyond Economic Man*. Chicago and London, The University of Chicago Press, 33-59.

ESDS (Economic and Social Data Service):
<http://www.esds.ac.uk/findingData/bcrsTitles.asp> accessed October 2009.

ESDS *Guide To Good Practice: Micro Data Handling And Security:*
<http://www.esds.ac.uk/news/microDataHandlingandSecurity.pdf> accessed December 2009.

Estes, R. & Weiner, N. (2001) *Commercial Sexual Exploitation Of Children In The U.S., Canada, And Mexico*. Philadelphia, PA, University of Pennsylvania.

European Commission (2013) *Tackling The Gender Pay Gap In The EU*. Brussels, European Commission.

European Union: *What Is Violence Against Women*: [online]

http://europa.eu/legislation_summaries/human_rights/human_rights_in_third_countries/dh0003_en.htm accessed February 2013.

Faludi, S. (1993) *Backlash: The Undeclared War Against Women*. London, Vintage.

Fawcett Society (2010) *Equal Pay: Where Next?* London, Fawcett Society.

Fawcett, T. (2005) An introduction to ROC analysis. *Pattern Recognition Letters* 27, 861-874.

Fajnzylber, P., Lederman, D. & Loayza, N. (2002) Inequality and violent crime. *Journal Of Law And Economics* 45(1), 1-40.

Feist, A. Ashe, J. Lawrence, J. McPhee, D. Wilson, R. (2007) *Investigating And Detecting Recorded Offences Of Rape*. London, Home Office online report 18/09 [online]

<http://webarchive.nationalarchives.gov.uk/20110218135832/http://rds.homeoffice.gov.uk/rds/pdfs07/rdsolr1807.pdf> accessed January 2013.

Ferber, M. & Nelson, J. (2003) *Feminist Economics Today: Beyond Economic Man*. Chicago and London, The University of Chicago Press.

Fienberg, S. (2009) The relevance or irrelevance of weights for confidentiality and statistical analysis. *Journal Of Privacy And Confidentiality* 1(2), 183-195.

Fisher, R.A. (1956) *Statistical Methods And Scientific Inferences*. New York, Hafner.

- Follingstad, D., Rutledge, L., Berg, B., Hause, E. & Polek, D. (1990) The role of emotional abuse in physically abusive relationships. *Journal Of Family Violence* 5(2), 107-120.
- Fowler, F. (1993) *Survey Research Methods*. 2nd ed. Newbury Park, Sage.
- Fox, B. (1993) On violent men and female victims: A comment on DeKeseredy and Kelly. *Canadian Journal Of Sociology* 18, 320-324.
- Francis, B., Walby, S. & Towers, J. (2011) *Response To The Consultation On The British Crime Survey Intimate Personal Violence Questionnaire* (unpublished).
- Freedom of Information Act: Information Commissioners Office:
http://www.ico.gov.uk/for_organisations/freedom_of_information/guide/act.aspx
 accessed March 2012.
- Freidman, M. (2002) *Capitalism And Freedom: Fortieth Anniversary Edition*. Chicago, University of Chicago Press.
- Fugate, M., Landis, L., Riordan, K., Naueckas, S. & Engel, B. (2005) Barriers to domestic violence help seeking. *Violence Against Women*, 11(3), 290-310.
- Gelles, R. (1999) Methodological issues in the study of family violence. Straus, M. & Gelles, R. (eds) *Physical Violence In American Families: Risk Factors And Adaptations To Violence In 8,145 Families*. New Brunswick, Transaction Publishers, 17-28.
- Gelles, R. and Cornell, C. (1985) *Intimate Violence In Families*. Beverley Hills, Sage.
- Gelles, R. (1974) *The violent Home: A study Of Physical Aggression Between Husbands And Wives*. Beverley Hills, Sage.

Garbarino, J. (1999) *Lost Boys: Why Our Sons Turn Violent And How We Can save Them*. New York, Free Press.

Gilligan, J. (2001) *Preventing Violence*. London, Thames and Hudson.

Gilligan, J. (1996) *Violence: Our Deadly Epidemic And Its Causes*. New York, G.P. Putnam's Sons.

Glasby, J. & Beresford, P. (2006) Commentary and issues: Who knows best? Evidence-based practice and the service user contribution. *Critical Social Policy* 25(1), 268–284.

Goode, J., Callender, C. & Lister, R. (1998) *Purse Or Wallet? Gender Inequalities And Income Distribution Within Families On Benefits*. London, Policy Studies Institute.

Gordon, D. (2006) The concept and measurement of poverty. Pantazis, C., Gordon, D. & Levitas, R. (eds) *Poverty And Social Exclusion In Britain: The Millennium Survey*. Bristol, The Policy Press, 29-70.

Gordon, D. (2000) Inequalities in income, wealth and standard of living in Britain. Pantazis, C. & Gordon, D. (eds) *Tackling Inequalities: Where We Are Now And What Can Be Done?* Bristol, The Policy Press, 25-58.

Greenfeld, L., Rand, M., Craven, D., Klaus, P., Perkins, C. & Warchol, G. (1998) *Violence by Intimates: Analysis Of Data On Crimes By Current Or Former Spouses, Boyfriends And Girlfriends*. Washington, U.S. Department of Justice.

Greco, D. & Dawgert, S. (2007) *Poverty And Sexual Violence: Building Prevention And Intervention Responses: A Guide For Counsellors And Advocates*. Pennsylvania

Coalition Against Rape [online]

<http://www.pcar.org/sites/default/files/file/poverty.pdf> accessed January 2013

Griffing, S., Ragin, D., Sage, R., Madry, L. & Primm, B. (2001) *Attachment And Trauma-Related Symptomatology In Battered Women*. Paper presentation at the Annual Conference of the American Psychological Association, San Francisco, CA .

Gupta, J. (2006) Property ownership of women as protection for domestic violence: The West Bengal experience. ICRW (ed.) *Property Ownership And Inheritance Rights Of Women For Social Protection — The South Asia Experience: Synthesis Report Of Three Studies*. ICRW, Delhi.

Hand, D. & Till, R. (2001) A simple generalisation of the area under the ROC curve for multiple class classification problems. *Machine Learning* 45, 171-186.

Hanmer, J. & Saunders, S. (1984) *Well-Founded Fear: A Community Study Of Violence To Women*. London, Hutchinson.

Hatty, S. (2000) *Masculinities, Violence And Culture*. Thousand Oaks, Sage Publications Ltd.

Harne, L. & Radford, J. (2008) *Tackling Domestic Violence: Theories, Policies and Practice*. Maidenhead, McGraw Hill / Open University Press.

Hegarty, K. & Roberts, G. (1998) How common is domestic violence against women? The definition of partner abuse in prevalence studies. *Australian and New Zealand Journal of Public Health* 22, 49-54.

Heise, L. (1998) Violence against women: An integrated, ecological framework.

Violence Against Women 4(3), 262-290.

Hill, J., Brewer, M., Jenkins, S., Lister, R., Lupton, R., Machin, S., Mills, C., Modood, T.,

Rees, T. & Riddell, S. (2010) *An Anatomy Of Inequality In The UK – Summary Report Of The National Equality Panel*. London, Government Equalities Office.

HM Government (2010) *Call To End Violence Against Women And Girls*. London, Home Office.

Home Office (2012a) *Consultation On The British Crime Survey Intimate Personal Violence Questionnaire: Responses From Home Office Statisticians*. London, Home Office.

Home Office (2012b) *Respondents To The Consultation On Experimental Statistics From The BCS Intimate Personal Violence Questionnaire*. London, Home Office.

Home Office (2009) *British Crime Survey Users Guide 2008/09*. London, Home Office.

Honeycutt, T., Marshall, L. & Weston, R. (2001) Towards ethnically specific models of employment, public assistance and victimization. *Violence Against Women* 7(2), 126-140.

Hornung, C., McCullough, C. & Sugimoto, T. (1981) Status relationship in marriage: Risk factors in spouse abuse. *Journal of Marriage and the Family* 43(3), 679-692.

Hosmer, D.W. & Lemeshow, S. (2000) *Applied Logistic Regression*. 2nd ed. New York, John Wiley & Sons, Inc. 156-164.

Howe, A. (1998) Notes from a 'war' zone: Reporting domestic/family/home/epidemic (men's) violence. Howe, A. *Sexed Crime In The News*. Sydney, The Federation Press, 29-55.

Hox, J. (2002) *Multilevel Analysis: Techniques And Applications*. New Jersey, Lawrence Erlbaum Associates Inc Publishers.

Jacobs, S., Jacobson, R. and Marchbank, J. (2000) Introduction: States of conflict.

Jacobs, S., Jacobson, R. and Marchbank, J. (eds), *States of Conflict: Gender, Violence and Resistance*. London, Zed Books.

Jaquier, V., Johnson, H. & Fisher, B. (2011) Research methods, measures and ethics.

Renzetti, C., Edleson, J. & Kennedy Bergen, R. (eds) *Sourcebook On Violence Against Women*. 2nd ed. Thousand Oaks, Sage, 23-49.

Jasinski, J. (2001) Theoretical explanations for violence against women. Renzetti, C.,

Edleson, J. & Kennedy Bergen, R. (eds) *Sourcebook On Violence Against Women*.

Thousand Oaks, Sage, 5-22.

Jewkes, R. (2002) Intimate partner violence: Causes and prevention. *The Lancet*

359(9315), 1423-1429.

Jewkes, R., Sen P. & Garcia-Moreno, C. (2002) Sexual violence. Krug E., Dahlberg, L.,

Mercy, J., Zwi, A. & Lozano, R. *World Report Of Violence And Health*. Geneva, The

World Health Organization, 147-181.

Johnson, H., Ollus, N. & Nevala, S. (2008) *Violence Against Women: An International Perspective*. New York, Springer.

Johnson, M. (2008) *A Typology Of Domestic Violence: Intimate Terrorism, Violent Resistance, And Situational Couple Violence*. Boston, Northeastern University Press.

Kalmus, D. & Straus, M. (1999) Wife's marital dependency and wife abuse. Straus, M. & Gelles, R. (eds) *Physical Violence In American Families: Risk Factors And Adaptations To Violence in 8,145 Families*. 2nd edition. New Brunswick, Transaction Publishers, 369-382.

Kaukinen, C. (2004) Status compatibility, physical violence and emotional abuse in intimate relationships. *Journal of Marriage And The Family* 66(2), 452-471.

Kelly, L. (2007) *Rape In The 21st Century: Old Behaviours, New Contexts And Emerging Patterns: Full Research Report* ESRC End of Award Report, RES-000-22-1679 Swindon: ESRC.

Kelly, L. & Regan, L. (2005) *A Gap Or A Chasm? Attrition In Reported Rape Cases*. Home Office Research Study 293. London, Home Office.

Kelly, L. (2005) Inside outsiders: Mainstreaming gender into human rights discourse and practice. *International Feminist Journal Of Politics* 7(4), 471-95.

Kelly, L. (2002) *A Research Review On The Reporting, Investigation And Prosecution Of Rape Cases*. London, HMCPSI [online]

http://www.hmcpsi.gov.uk/documents/reports/CJJI_THM/BOTJ/Rapelitrev.pdf

accessed January 2013.

Kelly, L. (2001) *Routes To (In)justice: A Research Review On The Reporting, Investigation And Prosecution Of Rape Cases*. HM Crown Prosecution Service Inspectorate [online]
http://www.hmcpso.gov.uk/documents/reports/CJJI_THM/BOTJ/Rapelitrev.pdf
accessed January 2013.

Kelly, L. (2000) Wars against women: sexual violence, sexual politics and the militarised state. Jacobs, S., Jacobson, R. and Marchbank, J. (eds) *States of Conflict: Gender, Violence And Resistance*. London, Zed Books.

Kelly, L. (1989) *Surviving Sexual Violence*. Cambridge, Polity Press.

Kelly, L. (1987) The continuum of sexual violence. Hanmer, J. And Maynard, M. (eds) *Women, Violence And Social Control*. Basingstoke, MacMillan, 46-60.

Kilpatrick, D., Acierno, R., Resnick, H., Saunders, B. & Best, C. (1997) A 2-year longitudinal analysis of the relationships between violent assault and substance use in women. *Journal of Consulting And Clinical Psychology* 65, 834-847.

Kim, J.O. & Curry, J. (1977) The treatment of missing data in multivariate analysis. *Sociological Methods and Research* 6, 215–241.

Kish, L. (1949) A procedure for objective respondent selection within the household. *Journal of the American Statistical Association* 44, 380-387.

Kishor, S. and Johnson, K. (2004) *Profiling Domestic Violence: A Multi-Country Study*. Calverton, ORC Macro.

Klein, N. (2007) *The Shock Doctrine: The Rise Of Disaster Capitalism*. London, Penguin Books.

Koss, M., Abbey, A., Campbell, R., Cook, S., Norris, J., Testa, M., Ullman, S., West, C. & White, J. (2007) Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychology Of Woman Quarterly* 31, 357-370.

Krebs, C., Lindquist, C., Warner, T., Fisher, B., Martin, S. & Childers, J. (2011) Comparing sexual assault prevalence estimates obtained with direct and indirect questioning techniques. *Violence Against Women* 17(2), 219-235.

Krohn, M. (1999) Social Learning Theory: The continuing development of a perspective. *Theoretical Criminology* 3, 462-476.

Krug E., Dahlberg, L., Mercy, J., Zwi, A. & Lozano, R. (2002) *World Report Of Violence And Health*. Geneva, The World Health Organization.

Kurz, D. (1998) Women, welfare, and domestic violence. *Social Justice* 25(1), 105-122.

Kushel, M., Evans, J., Perry, S., Robertson, M. & Moss, A. (2003) *No Door To Lock: Victimization Among Homeless And Marginally Housed Persons* [online]
<http://archinte.ama-assn.org/cgi/content/full/163/20/2492> accessed January 2013.

Kvalseth, T.O. (1985) Cautionary note about R^2 . *The American Statistician* 39, 279-285.

- Lad, M. (2011) *The English Indices Of Deprivation 2011*. London, Communities and Local Government [online]
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6871/1871208.pdf accessed March 2012.
- Levi, M., Maguire, M. & Brookman, F. (2007) Violent crime. Maguire, M., Morgan, R. and Reiner, R. (eds) *Oxford Handbook Of Criminology*. Oxford, Oxford University Press, 687-732.
- Levinson, D. (1989) *Family Violence in Cross-Cultural Perspective*. Newbury Park, Sage.
- Little, R. & Rubin, D. (2002) *Statistical Analysis With Missing Data*. 2nd ed. New Jersey, John Wiley and Sons.
- Lloyd, S. & Tulac, N. (1999) The effects of male violence on female employment. *Violence Against Women* 5(4), 370-392.
- Lloyd, S. (1997) The effects of domestic violence on women's employment. *Law And Policy* 19(2), 139-167.
- Lovett, J., Regan, L. & Kelly, L. (2004) *Sexual Assault Referral Centres: Developing Good Practice And Maximising Potentials*. Home Office Research Study 285. London, Home Office.
- Lundy, M. & Grossman, S. (2004) Elder abuse: Spouse/intimate partner violence and family abuse among elders. *Journal Of Elder Abuse And Neglect* 16(1), 85-102.

Macmillan, R. & Gartner, R. (1999) When she brings home the bacon: Labour-force participation and the risk of spousal violence against women. *Journal Of Marriage And The Family* 61(4), 947-958.

MADE in Lancashire project: Safer Lancashire; the Community Safety Partnership website: <http://www.saferlancashire.co.uk/statistics/> accessed August 2010.

MADRE (2012) *Struggling To Survive: Sexual Exploitation Of Displaced Women And Girls In Port Au Prince, Haiti*. New York, MADRE [online]
http://www.madre.org/images/uploads/misc/1326311459_Haiti%20SE%20Report%20FINAL%20pub%20011112.pdf accessed January 2013

Messerschmidt, J. (1993) *Masculinities And Crime: A Critique And Reconceptualization Of Theory*. Lanham, Rowman and Littlefield.

Metreaux, S. & Culhane, D. (1999) Family dynamics, housing and recurring homelessness among women in New York city homelessness shelters. *Journal Of Family Issues* 20(3), 371-396.

Miles-Doan, R. (1998) Violence between spouses and intimates: Does neighbourhood context matter? *Social Forces* 77(2), 623-645.

Minitab. *Technical Support Document: Receiver Operator Characteristics (ROC) Curve Macro*. [online]
<http://www.minitab.com/support/documentation/answers/ROCBLR.pdf> accessed February 2013.

Mirrlees-Black, C. (1999) *Domestic Violence: Findings From A New British Crime Survey Self-Completion Questionnaire*. Home Office Research Study 191. London, Home Office.

Mooney, J. (2000) Revealing the hidden figure of domestic violence. Hanmer, J. & Itzin, C. *Home Truths About Domestic Violence: Feminist Influences On Policy And Practice: A Reader*. London, Routledge, 24-43.

Moosa, Z. with Woodroffe, J. (2009) *Poverty Pathways: Ethnic Minority Women's Livelihoods*. London, Fawcett Society.

Moulton, C., Rovi, S., Furniss, K. & Lasser, N. (1999) The associations between health and domestic violence in older women: Results of a pilot study. *Journal Of Women's Health And Gender-based Medicine* 8(9), 1173-1179.

Murie, A. (2000) How can we end inequalities in housing? Pantazis, C. & Gordon, D. (eds) *Tackling Inequalities: Where We Are Now And What Can Be Done?* Bristol, The Policy Press, 101-116.

Myhill, A. & Allen, J. (2002) *Rape And Sexual Assault Of Women: The Extent And Nature Of The Problem: Findings From The British Crime Survey* London, Home Office Research Study 237.

Newman, J. (2005) Regendering governance. Newman, J. (ed). *Remaking Governance: People, Politics And The Public Sphere*. Bristol, Polity Press, 81-100.

OECD (2012) LMF1.5: *Gender Pay Gaps For Full-Time Workers And Earnings Differentials By Educational Attainment*. Social Policy Division [online]

<http://www.oecd.org/social/family/LMF1.5%20Gender%20pay%20gaps%20for%20full%20time%20workers%20-%20updated%20081212.pdf> accessed March 2012.

Office for National Statistics. (2010) *Standard Occupational Classification 2010: Volume Three The National Socio-Economic Classification (Rebased On The SOC 2010 user manual)*. [online]

<https://exchange2010.lancs.ac.uk/owa/redir.aspx?C=MWMUAsZMEGsFOsyBwu3xyPjcrF3c8I-eBABctADRZ9PqWd2-idv4lOpc4egYtEOwQ4MOt42oA.&URL=http%3a%2f%2fwww.ons.gov.uk%2fons%2fguide-method%2fclassifications%2fcurrent-standard-classifications%2fsoc2010%2fsoc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual%2fsoc2010-volume-3.pdf> accessed February 2013.

Office for National Statistics website: www.ons.gov.uk/ons/ accessed May 2010.

Office for National Statistics: NS-SEC Socio-Economic Classification Systems: <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html> accessed January 2012.

Office for National Statistics: household and income (personal earnings) data for England and Wales: www.ons.gov.uk/ons/ accessed October 2012.

Office for National Statistics: Super Output Areas: <http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/census/super-output-areas--soas-/index.html> accessed January 2013.

- Panda, P. & Agarwal, B. (2005) Marital violence, human development and women's property status in India. *World Development* 33(5), 823-850.
- Pantazis, C. & Ruspini, E. (2006) Gender, poverty and social exclusion. Pantazis, C., Gordon, D. & Levitas, R. (eds) *Poverty And Social Exclusion In Britain: The Millennium Survey*. Bristol, The Policy Press, 375-404.
- Pantazis, C. (2000) Introduction. Pantazis, C. and Gordon, D. (eds) *Tackling Inequalities: Where Are We Now And What Can Be Done?* Bristol, The Policy Press, 1-24.
- Parkhill, A. & Koss, M. (2005) Effects of frame of reference on responses to questions about sexual assault victimisation and perpetration. *Psychology Of Woman Quarterly* 29, 364-373.
- Payne, R. & Abel, G. (2012) UK indices of multiple deprivation – a way to make comparisons across constituent countries easier. *Health Statistics Quarterly* 53.
- Percy, A. & Mayhew, P. (1997) Estimating sexual victimisation in a national crime survey: A new approach. *Studies On Crime And Crime Prevention* 6, 125-150.
- Pfeffermann, D., Skinner, C.J., Holmes, D.J., Goldstein, H. & Rasbash, J. (1998) Weighting for unequal selection probabilities in multilevel models. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* 60(1), 23-40.
- Ponic, P., Varcoe, C., Davies, L., Ford-Gilboe, M., Wuest, J. & Hammerton, J. (2011) Leaving ≠ moving: Housing patterns of women who have left an abusive partner. *Violence Against Women* 17(12), 1576-1600.

The Poverty Site: www.poverty.org.uk/ accessed August 2010.

Pridemore, W. (2008) A methodological addition to the cross-national empirical literature on social structure and homicide: A first test of the poverty-homicide thesis. *Criminology* 46(1), 133-154.

Radford, J. & Kelly, L. (1996) 'Nothing really happened': The invalidation of women's experiences of sexual violence. Hester, M., Kelly, L. & Radford, J. (eds) *Women, Violence And Male Power: Feminist Research, Activism And Practice*. Buckingham, Open University Press.

Radford, J. (1987) Policing male violence: Policing women. Hanmer, J. & Maynard, M. (eds). *Violence And Social Control*. London, Macmillan.

Rafferty, A. (Updated by Walthery, P.) (Sept 2011) *Introduction To Complex Sample Design In UK Government Surveys, Version 1.3*. London, ESDS Government.

Raghaven, C., Mennerich, A., Sexton, E. & James, S. (2006) Community violence and it's direct, indirect and mediating effects on intimate partner violence. *Violence Against Women* 12(12), 1132-1149.

Rasbash, J., Steele, F., Browne, W. & Goldstein, H. (2009) *A User's Guide To MLwiN Version 2.10*. Bristol, Centre for Multilevel Modelling.

Refusing to Kill campaign supports the Global Women's Strike:

<http://www.refusingtokill.net/rape/RefusingToRape.htm> accessed February 2011.

Renzetti, C. (2011) Economic issues and intimate partner violence. Renzetti, C., Edleson, J. & Kennedy Bergen, R. (eds) *Sourcebook On Violence Against Women*. 2nd edition. Los Angeles, Sage, 171-188.

Renzetti, C. & Maier, S. (2002) Private crime in public housing: Violent victimization, fear of crime and social isolation among women public housing residents. *Women's Health And Urban Life* 1(2), 46-65.

Riger, S., Staggs, S. & Schewe, P. (2004) Intimate partner violence as an obstacle to employment among mothers affected by welfare reform. *Journal Of Social Issues* 60(4), 801-818.

Robinson, A. (2009) *Independent Sexual Violence Advisors: A Process Evaluation* London, Home Office [online] <http://www.cf.ac.uk/socsi/resources/isvareport.pdf> accessed January 2013.

Romans, S., Forte, T., Cohen, M., Du Mont, J. & Hyman, I. (2007) Who is most at risk for IPV? A Canadian population-based study. *Journal Of Interpersonal Violence* 22(12), 1495-1514.

Roth, P.L. (1994) Missing data: a conceptual review for applied psychologists *Personnel Psychology* 47 (3), 537–560.

Saltzman, L., Fanslow, P., McMahon, P. & Shelly, G. (1999) *Intimate Partner Violence Surveillance: Uniform Definitions And Recommended Data Elements, Version 1.0*. Atlanta, Centres for Disease Control and Prevention.

Sanders, C., Weaver, T. & Schnabel, M. (2007) Economic education for battered women: An evaluation of outcomes. *Journal Of Women And Social Work*, 22(3), 240-254.

Schwartz, M. (2005) The past and future of violence against women. *Journal Of Interpersonal Violence* 20(1), 7-11.

Schwartz, M. (2000) Methodological issues in the use of survey data for measuring and characterising violence against women. *Violence Against Women* 6(8), 815-838.

Sefton, T. & Sutherland, H. (2005) Inequality and poverty under New Labour. Hills, J. & Stewart, K. (eds) *A More Equal Society? New Labour, Inequality And Exclusion*. Bristol, The Policy Press, 231-250.

Seymour, J. (2000) *Poverty In Plenty: A Human Development Report For The UK*. London, Earthscan.

Short, L., McMahon, P., Chervin, D., Shelley, G., Lezin, N., Sloop, K. & Dawkins, N. (2000) "Survivors" identification of protective factors and early warning signs for intimate partner violence. *Violence Against Women* 6(3), 272-285.

Skinner, T., Hester, M. & Malos, E. (2005) Methodology, feminism and gender violence. Skinner, T., Hester, M. & Malos, E. (eds). *Researching Gender Violence: Feminist Methodology In Action*. Culliompton, Willan Publishing, 1-22.

Smart Justice. (2007): <http://www.prisonreformtrust.org.uk/subsection.asp?id=843> accessed March 2010.

Smith, P., Smith, J. & Earp, J. (1999) Beyond the measurement trap: A reconstructed conceptualization and measurement of battery. *Psychology Of Woman Quarterly* 23, 179-195.

Snijder, T. & Bosker, R. (2011) *Multilevel Analysis: An Introduction To Basic And Advanced Multilevel Modelling*. 2ed. London, Stage Publications Ltd.

Snijder, T. (2005) Power and Sample Size in Multilevel Linear Models. Everitt, B.S. & Howell, D.C. (eds.) *Encyclopedia Of Statistics In Behavioral Science*. Volume 3, 1570–1573. Chichester, Wiley.

Snijders, T. and Bosker, R. (1999) *Multilevel Analysis: An Introduction To Basic And Advanced Multilevel Modelling*. London, SAGE Publications Ltd.

Spicker, P. (2007) *The Idea Of Poverty*. Bristol, The Policy Press.

Stanko, E. (1990) *Everyday Violence: How Women And Men Experience Sexual And Physical Danger*. London, Pandora.

Stark, E. (2007) *Coercive Control: How Men Entrap Women In Personal Life*. Oxford, Oxford University Press.

Sterba, S. (2009) Alternative model-based and design-based frameworks for inference from samples to populations: From polarization to integration. *Multivariate Behavioural Research* 44, 711-740.

Stewart, K. & Hills, J. (2005) Introduction. Hills, J. & Stewart, K. (eds) *A More Equal Society? New Labour, Inequality And Exclusion*. Bristol, The Policy Press, 1-22.

Stout, K. (1992) "Intimate Femicide": Effects of legislation and social services.

Radford, J. & Russell, D. (eds). *Femicide: The Politics Of Woman Killing*. Buckingham, Open University Press, 133-140.

Straus, M. (1999a) Measuring Intrafamily conflict and violence: The Conflict Tactics (CT) Scales. Straus, M. & Gelles, R. (eds) *Physical Violence In American families: Risk Factors And Adaptations To Violence In 8,145 Families*. 2nd ed. New Brunswick, Transaction Publishers, 29-45.

Straus, M. (1999b) Injury and frequency of assault and the 'representative sample fallacy' in measuring wife beating and child abuse. Straus, M. & Gelles, R. (eds) *Physical Violence In American families: Risk Factors And Adaptations To Violence In 8,145 Families*. 2nd ed. New Brunswick, Transaction Publishers, 75-89

Strauss, M. (1999c) The National Family Violence Surveys. Straus, M. & Gelles, R. (eds) *Physical Violence In American families: Risk Factors And Adaptations To Violence In 8,145 Families*. 2nd ed. New Brunswick, Transaction Publishers, 3-16.

Straus, M. & Gelles, R. (1999) *Physical Violence In American families: Risk Factors And Adaptations To Violence In 8,145 Families*. 2nd ed. New Brunswick, Transaction Publishers.

Straus, M. (1994). State-to-state differences in social inequality and social bonds in relation to assaults on wives in the United States. *Journal Of Comparative Family Studies* 25, 7-24.

Strube, M. & Barbour, L. (1984) Factors related to the decision to leave an abusive relationship. *Journal Of Marriage And The Family* 46(4), 837-844.

- Strube, M. & Barbour, L. (1983), The decision to leave an abusive relationship: Economic dependency and psychological commitment. *Journal Of Marriage And The Family* 45(4), 785-793.
- Sullivan, M., Senturia, K., Negash, T., Shiu-Thornton, S. & Giday, B. (2005) "For us it is like living in the dark": Ethiopian women's experiences with domestic violence. *Journal Of Interpersonal Violence* 20(8), 922-940.
- Teaster, P. (2002) *A Response To The Abuse Of Vulnerable Adults: The 2000 Survey Of State Adult Protective Services*. Washington, National Centre on Elder Abuse.
- Testa, M., VanZile-Tamsen, C., & Livingstone, J. (2007) prospective prediction of women's sexual victimisation by intimates and nonintimate male perpetrators. *Journal Of Consulting And Clinical Psychology* 75, 52-60.
- Tiefenthaler, J., Farmer, A. & Sambira, A. (2005) Services and intimate partner violence in the US: A country-level analysis. *Journal of Marriage And The Family* 67(3), 565-578.
- Tjaden, P. & Thoennes, N. (2000a) *Full Report Of The Prevalence, Incidence, And Consequences Of Violence Against Women*. Washington, U.S. National Institute of Justice.
- Tjaden, P. & Thoennes, N. (2000b) Prevalence and consequences of male-to-female and female-to-male intimate partner violence as measured by the National Violence Against Women Survey. *Violence Against Women* 6(2), 142-161.

- Tjaden, P. & Thoennes, N. (2000c) *Extent, Nature And Consequences Of Intimate Partner Violence Against Women*. Washington, National Institute of Justice.
- Tjaden, P. & Thoennes, N. (2000d) *Stalking In America: Findings From The National Violence Against Women Survey*. Washington, US Department of Justice.
- Tjaden, P. & Thoennes, N. (1998) *Prevalence, Incidence And Consequence Of Violence Against Women: Findings From The National Violence Against Women Survey*. Washington, National Institute of Justice, CDC.
- Tolman, R. & Raphael, J. (2000) A review of research on welfare and domestic violence. *Journal Of Social Issues*, 56(4), 655-682.
- Towers, J., Walby, S. & Francis, B. (2012) *Response To Home Office Consultation On CSEW Questionnaire Content 2013/14*. [unpublished].
- Townsend, I. (2009) *UK Income Inequality And International Comparisons*. Standard Note SN/EP/3870. London, House of Commons Library.
- Tsikriktsis, N. (2005) A review of techniques for treating missing data in OM survey research. *Journal Of Operations Management* 24, 53–62.
- TUC (Trade Unions Council) (2008) *Closing The Gender Pay Gap: An Update Report For TUC Women's Conference*. [online] <http://www.tuc.org.uk/equality/tuc-14435-f0.pdf> accessed January 2013.
- Turlock, I. (2000) Inequalities in employment: Problems of spatial divergence.
- Pantazis, C. & Gordon, D. (eds) *Tackling Inequalities: Where Are We Now And What Can Be Done?* Bristol, The Policy Press, 59-86.

Turner, C., Kui, L., Rogers, S., Lindberg, L., Pleck, J. & Sonenstein, F. (1998) Adolescent sexual behaviour, drug use and violence: Increasing reporting with computer survey technology. *Science* 280, 867-873.

United Nations (1995) *United Nation Fourth World Conference On Women: Platform For Action*, Beijing, United Nations [online]

<http://www.un.org/womenwatch/daw/beijing/platform/plat1.htm> accessed December 2010.

United Nations (1993) *Declaration On The Elimination Of Violence Against Women*

[online] <http://www.un.org/documents/ga/res/48/a48r104.htm> accessed December 2010.

United Nations (1979) *Convention On The Elimination Of Discrimination Against Women* [online]

<http://www.un.org/womenwatch/daw/cedaw/text/econvention.htm> accessed December 2010.

Votruba-Drzal, E., Lohman, B. & Chase-Lansdale, L.P. (2002) *Violence In Intimate Relationships As Women Transition From Welfare To Work*. Working paper WP-02-32. Chicago, Northwestern University, Institute for Policy Research.

Walby, S. (2012) Violence and society: Introduction to an emerging field of sociology. *Current Sociology* 61(2), 95-111.

Walby, S. (2009) *Globalization And Inequalities: Complexity And Contested Modernities*. London, Sage.

- Walby, S., Armstrong, J. & Humphreys, L. (2008) *Review Of Equality Statistics Research*. Research Report 1. London, Equality and Human Rights Commission.
- Walby, S. (2005) Improving the statistics on violence against women. *Statistical Journal Of The United Nations*. ECE 22: 193-216.
- Walby, S. & Allen, J. (2004) *Domestic Violence, Sexual Assault And Stalking: Findings From The British Crime Survey*. Home Office Research Study 276. London, Home Office.
- Walby, S. & Myhill, A. (2001) New survey methodologies in researching violence against women. *British Journal Of Criminology* 41, 502-522.
- Walby, S. (1990) *Theorizing Patriarchy*. Oxford, Basil-Blackwell.
- Watts, C. & Zimmerman, C. (2000) Violence against women: Global scope and magnitude. *The Lancet* 359, 1232-1237.
- Weaver, T., Sanders, C., Campbell, C. & Schnabel, M. (2009) Development and preliminary psychometric evaluation of the Domestic Violence-Related Financial Issues Scale (DV-FI). *Journal Of Interpersonal Violence*, 24(4), 569-585.
- West, C. & Fenstermaker, S. (1995) Doing difference. *Gender and Society* 9(1), 8-37.
- Wilkinson, R. & Pickett, K. (2010) *The Spirit Level: Why Equality Is Better For Everyone*. London, Penguin Books.
- World Health Organisation / London School of Hygiene and Tropical Medicine (2010) *Preventing Intimate Partner And Sexual Violence Against Women: Taking Action And Generating Evidence*. Geneva, World Health Organisation.

World Health Organisations: *What Is Violence Against Women*: [online]

<http://www.who.int/mediacentre/factsheets/fs239/en/> accessed February 2013.

Yllö, K. (1984) The status of women, marital equality, and violence against wives.

Journal Of Family Issues 5, 307-320.

Yllö, K. & Straus, M. (1999) Patriarchy and violence against wives: The impact of

structural and normative factors. Straus, M. & Gelles, R. (eds.) *Physical Violence In*

American Families: Risk Factors And Adaptations To Violence In 8,145 Families. New

Brunswick, Transaction Publishers, 383-399.

Yodanis, C. (2004) Gender inequality, violence against women, and fear: A cross-

national test of the feminist theory of violence against women. *Journal Of*

Interpersonal Violence 19(6), 655-675.